



Task 4.4:
**DRAFT Service
Implementation Plan**

SLOCOG Coast Rail Corridor Study

March 26, 2021



In Association With:
AMMA Transit Planning
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Executive Summary

This Service Implementation Plan was prepared to develop a phased plan to achieve California's vision for integrated intercity rail and bus service in the Central Coast, as laid out in the 2018 California State Rail Plan. This vision consists of increased frequency, as shown in Table ES-1, and greater integration of the state's transportation network. This plan's study area includes the Coast Rail Corridor within Monterey, San Luis Obispo, and Santa Barbara Counties, as well as connections from the coast to Central Valley rail service, as shown in Figure ES-1.

Table ES-1: Service Targets by Horizon, California State Rail Plan

Corridor	Near-Term		Mid-Term		Long-Term	
	Rail	Integrated Bus & Rail	Rail	Integrated Bus & Rail	Rail	Integrated Bus & Rail
Salinas-San Luis Obispo	1 train/day	Every 2 hours	2 trains/day	Every 2 hours	Every 4 hours	Every hour
San Luis Obispo-Santa Barbara	3 train/day	Every 2 hours	4 trains/day	Every 2 hours	Every 2 hours	Every hour
Central Coast-Central Valley	N/A	"Enhanced"	N/A	Every 2 hours	N/A	Every hour

Figure ES-1. Project Study Area



Stakeholder Engagement

Due to the regional size and community diversity of the study area, implementation of a comprehensive, strategic communications and public outreach program was essential to understanding needs and creating feasible plans to meet those needs for future rail travel. The program focused on a series of effective communications tools and strategies to build awareness, understanding and active engagement in the study process, such as a project website, survey, virtual public meeting, fact sheet, and email and social media communications. Two key committees, the Technical Advisory Committee (TAC) and the Community Working Group (CWG), were formed to allow the team to directly engage with community representatives and leaders to foster relationships and share timely information and input at key milestones within the development of the SIP.

Service Options

Existing intercity service on the Central Coast consists of:

- **Amtrak Coast Starlight:** One round trip per day operates between Los Angeles and Seattle. This is a long-distance service with limited stops along the Central Coast.
- **Amtrak Pacific Surfliner:** The third-highest ridership Amtrak service in the country operates between San Diego and San Luis Obispo. Two daily round trips operate between San Luis Obispo and Los Angeles, making all stops between Santa Barbara and San Luis Obispo, and an additional three round trips terminate in Goleta.
- **Amtrak Thruway:** To extend the reach of intercity rail services, intercity bus connections to all three of California’s state-supported rail services operate along the Central Coast.
 - Route 17 (four round trips per day) connects to Pacific Surfliner trains, three in Santa Barbara and one in SLO, and travels to Salinas and beyond.
 - Route 21 (one round trip per day) connects to the Capitol Corridor in San Jose and extends to Santa Barbara.
 - Route 18 (two round trips per day) connects to San Joaquins trains in Hanford and travels to Santa Maria via Paso Robles.

For increased rail frequency throughout the corridor in the mid-term and long-term horizons, three service options were identified:

- A. **Extension of the Capitol Corridor to San Luis Obispo.** Service targets between Salinas and San Luis Obispo would be achieved by extending service from the north to San Luis Obispo, where riders could connect to the Pacific Surfliner, which would increase in frequency to meet the service levels envisioned for the southern half of the corridor. While the Capitol Corridor is the state supported service with the closest terminus to Salinas, it would also be possible to extend one of the other Northern California rail services, including the San Joaquins, the Altamont Corridor Express, or Caltrain.

Figure ES-2 shows how this option would be implemented in the mid-term horizon.

Figure ES-2. Service Option A, Mid-term



- B. **Extension of the Pacific Surfliner** to the North. All new service would be implemented with expansion of the existing service, with more trains to San Luis Obispo and some extending to Salinas, or beyond.

For modeling purposes, it was assumed that the service would terminate in Salinas, as shown in Figure ES-3, with the State Rail Plan’s service targets north of Salinas achieved by other, connecting services, such as the planned extension of Caltrain service from Gilroy to Salinas.

However, stakeholder coordination throughout the study revealed that this would not optimize connectivity and or provide a feasible layover facility location. Coordination with state and regional partners in the San Francisco and Monterey Bay Areas is recommended to select an alternative terminus, such as San Jose or Gilroy, to optimize connectivity while minimizing any potential operational conflicts with planned rail projects in the region.

- C. **Implementation of a “Coast Daylight”-type service** from Los Angeles to San Francisco. The targets of the State Rail Plan could be achieved by reintroducing intercity rail service directly from Los Angeles to downtown San Francisco. Figure ES-4 shows how this option would be implemented in the mid-term horizon.

For each rail option, rail service would be supplemented by integrated bus service. To meet the service targets of the State Rail Plan, intercity buses would fill in gaps between trains and connect to trains terminating in Salinas, San Luis Obispo, or Santa Barbara.

While the service options considered in this SIP include rail service that travels outside the study area, either to Southern California or the San Francisco Bay Area, the analysis was limited to the study area shown in Figure ES-1. The service targets of the CSRP for other corridors can be met by a variety of combinations of service types and are assumed to be met regardless of what option is ultimately selected for the Coast Corridor. Therefore, to provide an “apples to apples” comparison between the options, the capital and operating costs presented in this SIP only reflect those associated with operations on the Salinas to Santa Barbara and the Central Valley to San Luis Obispo corridors.

Figure ES-3. Service Option B, Mid-term¹



¹While Salinas was assumed as a terminus for modeling and cost estimation purposes, this study does not recommend Salinas as an ultimate Surfliner destination.

Figure ES-4. Service Option C, Mid-term



Assessment of Service Options

With appropriate investment in infrastructure along the Central Coast, there are several feasible ways to achieve the service targets laid out for the corridor in the CSRP. The selection of a specific service option will depend on further deliberation by policymakers in consideration of the relative costs and benefits, as well as the broader statewide rail planning context. Table ES-2 shows a high-level assessment of the performance of each service option regarding costs, availability of one-seat rides, and compatibility with broader statewide rail plans and projects.

Table ES-2. Assessment of Service Options

Performance Area	A-Extend Capitol Corridor	B-Extend Surfliner	C-Coast Daylight
Capital Cost	Less Costly	More Costly	Most Costly
Operating Cost	Less Costly	More Costly	More Costly
Offers one-seat rides to key destinations	Medium	Medium	High
Compatibility with related projects	High	Medium	Low

Option A, extending the Capitol Corridor, would provide connections from San Luis Obispo to Monterey County and the greater Northern California megaregion while avoiding conflict with rail operations on the Peninsula. It would also provide opportunity for cost savings by using shorter trainsets on the north of San Luis Obispo, as shown in Table ES-4 below. Integrating into an existing service also allows this option to take advantage of an established brand and governance structure. However, passengers traveling through San Luis Obispo would be required to transfer.

Option B, extending the Pacific Surfliner, would provide one-seat rides for passengers travelling between the northern and southern portions of the Coast Corridor and has the advantage of building on an existing service with an established brand and governance structure. While terminating south of the Peninsula would avoid conflicts with other rail operations, it would require passengers to transfer to reach destinations in the Bay Area. In addition, operating trains with enough seating capacity for the busiest segments of the route along the entire corridor would incur higher capital, operating, and maintenance costs.

Option C, reintroducing a “Coast Daylight”-type service, would provide one-seat rides to the largest number of origin-destination pairs. By operating on the Peninsula Corridor, however, this option faces potential for significant operational conflicts with Caltrain and High-Speed Rail plans, such as electrification, level boarding, and scheduling based on higher speeds. Furthermore, the long route requires coordination with the greatest number of stakeholders, and there is no clear, ready-to-implement governance structure for the new service. Like Option B, sizing of trainsets for peak loads on both the Southern California and the Bay Area would incur higher costs than operating shorter trains through the less densely populated Salinas Valley. Operating the service independently may not allow the cost efficiencies of integrating into an existing equipment pool, where spare equipment can be shared.

Infrastructure Requirements

To preserve on-time performance for the Amtrak Coast Starlight, maintain operating capacity for freight service, and enable operation of more frequent passenger service, several improvements are recommended between Salinas and San Luis Obispo, as shown in Table ES-3. Improvements agreed to as part of the LOSSAN North Improvement Program are sufficient to enable service every 2 hours between Santa Barbara and San Luis Obispo to meet the long term vision of the State Rail Plan, but additional capacity improvements south of San Luis Obispo, while not necessary to implement service, may improve on-time performance along the route. Note that only the Salinas to Santa Barbara corridor

was modelled, and additional improvements may be required for service to continue to Los Angeles or the Bay Area.

Table ES-3. Infrastructure Improvements by Service Option

Project	A-Extend Capitol Corridor	B-Extend Surfliner	C-Coast Daylight
Mid-Term			
Centralized Traffic Control and Positive Train Control Installation, Salinas to San Luis Obispo	✓	✓	✓
Tunnel Notching and Bridge Replacement	✓	✓	✓
Power up Santa Margarita Siding	✓	✓	✓
Upgrade Siding at Templeton	✓		
Upgrade Siding at King City		✓	✓
Salinas Layover Facility		✓*	**
Long-Term			
Combine McKay Sidings	✓	✓	✓
Upgrade Soledad Siding	✓	✓	✓

* Salinas terminus was assumed for analysis purposes. An alternative terminus may provide preferable layover location options.

**Assumes a layover location is available in San Francisco or San Jose

Summary of Costs

Table ES-4 summarizes the rough order-of-magnitude cost estimates for each service option by time horizon. Differences in cost are primarily driven by the differences in equipment: it is assumed that a Capitol Corridor extension would continue to utilize smaller trainsets than the Pacific Surfliner and that a new, long distance Coast Daylight-type service would require more spare equipment than extending one of the existing services. The cost estimates shown reflect capital and operating costs associated with state-supported rail and bus service on the Salinas to Santa Barbara and the Central Valley to San Luis Obispo corridors, and does not include and capital or operating expenses required to implement the service options outside the study area.

Table ES-4. Comparison of Coast Corridor Rough Order-of-Magnitude Costs by Service Option by Horizon (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Near-term			
Annual Bus Operating Cost	\$5,216,000	\$5,216,000	\$5,216,000
Bus Capital Cost-BEB	\$39,500,000	\$39,500,000	\$39,500,000
Bus Capital Cost-FCEB	\$50,000,000	\$50,000,000	\$50,000,000
Mid-term			
Annual Operating Cost			
Rail	\$25,675,000	\$28,466,000	\$28,466,000
Bus	\$6,643,000	\$6,643,000	\$6,643,000
Total	\$32,318,000	\$35,109,000	\$35,109,000
Capital Cost			
Rail	\$160,388,000	\$164,656,000	\$194,357,000
Bus-BEB	\$35,900,000	\$35,900,000	\$35,900,000
Bus-FCEB	\$38,400,000	\$38,400,000	\$38,400,000
Total	\$198,788,000- \$196,288,000	\$203,056,000- \$200,556,000	\$232,757,000- \$230,257,000
Long-term			
Annual Operating Cost			
Rail	\$63,587,000	\$71,960,000	\$71,960,000
Bus	\$10,511,000	\$10,511,000	\$10,511,000
Total	\$74,098,000	\$82,471,000	\$82,471,000
Capital Cost			
Rail	\$130,772,000	\$135,385,000	\$135,385,000
Bus-BEB	\$6,600,000	\$6,600,000	\$6,600,000
Bus-FCEB	\$4,800,000	\$4,800,000	\$4,800,000
Total	\$135,572,000- \$137,372,000	\$140,185,000- \$141,985,000	\$140,185,000- \$141,985,000

Note: Costs shown reflect only those associated with the Salinas to Santa Barbara and Central Valley to San Luis Obispo corridors. Additional operating expenses and capital costs would be required for service that extends outside the study area.

Governance

The existing state-supported rail services in California are each managed by a joint powers authority (JPA) representing the communities of the respective rail corridor. This Service Implementation Plan considers the introduction of state-supported rail service on corridor where none currently exists (San Jose to San Luis Obispo), either as an extension of an existing service or a new, independent rail service. This would require new institutional arrangements to support management of this service.

For Options A and B, which represent extensions of existing services, the JPA for the respective service would continue to administer the service but would need statutory authority to do so. State law would need to be amended to allow the JPA to expand its service area, and a new transfer agreement would be negotiated with Caltrans. The JPA's joint use of powers agreement may also need to be amended.

Since Option C introduces a new service, there is no existing agency dedicated to its administration. There are several governance options for a "Coast Daylight"-type service using the JPA model:

- Expansion of the LOSSAN Service Area: The agency already manages service on the southern half of the route and represents 4 of the 10 counties on the corridor.

- Partnership between LOSSAN and the Capitol Corridor JPA: Together, the JPAs represent 6 of the 10 corridor counties and manage the two state-supported services with which a Coast Daylight-type service would need to be coordinated with.
- Create a New JPA: As a new, distinct intercity rail service, a new JPA dedicated to management of a Coast Daylight-type operation would allow the greatest degree of local control. However, this would require time and resources to develop.

Each of these options would require similar changes to state law as required for Options A and B.

The existing JPAs are assumed to continue managing integrated intercity bus service, and continued coordination among all three JPAs will be crucial to ensuring that these services function as an integrated network. In the long term, a transition of management responsibility for the Central Valley to Central Coast Thruway service from the San Joaquin Joint Powers Authority to LOSSAN may be warranted when the San Joaquins cease service south of Merced after the opening of the initial operating segment of High-Speed Rail.

Next Steps

With appropriate investment and institutional change, it is feasible to achieve the State's ambitious vision for integrated rail and bus service along the Central Coast. Several actions are needed to achieve the increases in rail frequency targeted in the CSRP:

1. Policymakers along the Central Coast must consider the relative costs and benefits of each service option and select one to implement
2. Track access must be secured from UPRR. This will require negotiations to refine specific capital investments that will be necessary and agreement on a track access fee
3. State operating support must be secured. Depending on the service option chosen, the following governance changes may be necessary:
 - a. Selection of a JPA to manage new service or creation of a new JPA
 - b. Negotiation of an interagency transfer agreement with Caltrans
 - c. Negotiation of (or renegotiation of) the joint use of powers agreement
 - d. Legislation to give statutory for the selected JPA to provide service along the Coast Corridor
4. Additional equipment must be acquired
5. Capital funding must be secured to deliver the necessary infrastructure improvements

1 Introduction

The 2018 California State Rail Plan (CSRP) lays out an ambitious vision for the state to have “a premier, customer focused, integrated rail system that successfully moves people and products while enhancing economic growth and quality of life.”¹ While overall increases in service levels are foundational to this vision, so is integration of rail services with each other and with other modes, including intercity bus and local transit services. This Service Implementation Plan (SIP) lays out a phased approach for achieving this vision along the Coast Rail Corridor within Monterey, San Luis Obispo, and Santa Barbara Counties, as well as connections from the coast to Central Valley rail service.

Based on service parameters laid out in the CSRP for three milestones of progressive service enhancement, this SIP identifies the following:

- Potential options for delivering enhanced rail service through the Central Coast
- Necessary infrastructure improvements and equipment purchases, along with associated costs for rail and intercity bus
- Operations and maintenance costs for rail and intercity bus
- Governance and institutional structures for managing intercity services

1.1 Study Purpose

The purpose of the SIP is to develop a phased implementation plan to achieve higher integrated intercity rail and bus service levels, with rail service supplemented by bus connections to trains that terminate in Goleta, San Luis Obispo (SLO), Salinas, or San Jose. Within the limits of the study area, the plan includes the following intercity service improvement milestones consistent with the 2018 CSRP:

- Near-term
 - Integrated intercity bus every 2 hours between San Jose-Santa Barbara
 - Enhanced integrated intercity bus from Paso Robles to the Central Valley
- Mid-term
 - Integrated intercity rail and intercity bus from Salinas to SLO, including at least 1 intercity rail service in addition to Amtrak Coast Starlight
 - Integrated intercity rail and intercity bus every 2 hours from SLO to Santa Barbara, including at least 3 intercity rail frequencies in addition to Amtrak Coast Starlight
 - Integrated intercity bus every 2 hours from Paso Robles to the Central Valley
- Long-term
 - Integrated intercity rail and intercity bus every hour from Salinas to SLO, including intercity rail at least every 4 hours
 - Integrated intercity rail and intercity bus every hour from SLO to Goleta/Santa Barbara, including at least bi-hourly intercity rail service
 - Integrated intercity bus every hour from Paso Robles to the Central Valley

The CSRP also identifies service targets for the corridors that connect to the study corridor. The Transportation Agency for Monterey County (TAMC) and Santa Barbara County Association of Governments (SBCAG) are conducting parallel network integration studies with study areas overlapping the Salinas-Santa Barbara corridor from the north and south, respectively. The CSRP’s targets for connecting service in Salinas and Santa Barbara are:

¹ California Department of Transportation. 2018. *California State Rail Plan*. <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>

- Near-term
 - Salinas-San Jose: integrated bus and rail service every 2 hours, including at least 2 intercity trains per day
 - Santa Barbara-Los Angeles: integrated bus and rail service every 2 hours, including at least 1 additional intercity rail round trip
- Mid-term
 - Salinas-San Jose: intercity rail every 2 hours
 - Santa Barbara-Los Angeles: intercity rail every 2 hours
- Long-term
 - Salinas-San Jose: intercity rail every hour
 - Santa Barbara-Los Angeles: intercity rail every hour

The CSRP identified horizon years for its near-, mid-, and long-term goals as 2022, 2027, and 2040, respectively. However, this SIP does not commit SLOCOG, the State, or other agencies to implementing capital or service improvements in a specific timeframe. Rather, it provides a phased plan to achieve service levels, which could be implemented earlier or later than the initial targets set in the CSRP. The 2022 update to the CSRP is currently underway, which will reflect changing travel behavior and fiscal realities as a result of the COVID-19 pandemic.

The CSRP and 2019 SLOCOG Regional Transportation Plan (RTP) served as guiding documents for this study. While phrasing is slightly different, the goals listed in the RTP are consistent with those listed in the CSRP (as shown in Table 1-1). These goals form the basis of the evaluation of service options for each phase.

Table 1-1. Goals of Regional Transportation Plan and California State Rail Plan

SLOCOG RTP	CSRP
Preserve the transportation system	Preserve the multimodal transportation system
Improve intermodal mobility and accessibility for all people	Improve multimodal mobility and accessibility for all people
Support a vibrant economy	Support a vibrant economy
Improve public safety and security	Improve public safety and security
Foster livable, healthy communities and promote social equity	Foster livable and healthy communities and promote social equity
Practice environmental stewardship	Practice environmental stewardship
Practice financial stewardship	

1.2 Study Need

A literature review of prior studies and plans along the corridor indicated that travel demand along the Central Coast is anticipated to increase as a result of both population and employment growth as well as imbalances between jobs and housing. While jobs continue to concentrate in central cities, housing growth is pushing farther into outlying areas, increasing commute times. Tourism and universities also generate intercity trips between the Central Coast and other parts of California and the country.

The southern half of the corridor demonstrates strong demand, with the Pacific Surfliner carrying more passengers than any other state-supported Amtrak service in the country. The nation's second highest state-supported rail service, the Capitol Corridor, connects to the Coast Corridor from the north in San Jose. This leaves a gap between northern and southern California that is unserved by state-supported intercity rail. The existing Coast Starlight service is not well positioned to serve the needs of intra-state travel, with only one daily round trip, limited stops, and reliability concerns due to its long route from Seattle to Los Angeles.

Accommodating this increase in travel demand with highway expansion along the environmentally sensitive coast is costly and inconsistent with regional and state goals to preserve the natural environment, improve air quality, and reduce vehicle miles travelled. Prior studies of the corridor have forecast that reintroducing service between San Francisco and Southern California could attract over 100,000 riders per year, along with attendant benefits in reducing air pollution and vehicle collisions.^{2,3}

1.3 Stakeholder Engagement

Due to the regional size and community diversity of the study area, implementation of a comprehensive, strategic communications and public outreach program was essential to understanding needs and creating feasible plans to meet those needs for future rail and bus travel. The program focused on development of effective communications tools and strategies to build awareness, understanding and active engagement in the study process. More information on stakeholder engagement is included as **Appendix C**.

The engagement process included:

- **Comprehensive property owner/stakeholder database** including business, residential, advocacy, educational, and medical interests
- **Project branding and messaging** which provided a standardized look and feel to project communications
- **A project-specific website** hosting up-to-date materials and linking to key resources
- **Bilingual fact sheet**
- **Email notifications** using a standardized project email address
- **Social media and media relations campaigns** utilizing SLOCOG's Facebook account, press releases, and news articles
- **Online survey** available from mid-June to early October 2020, which garnered 451 responses

Two key committees, the Technical Advisory Committee (TAC) and the Community Working Group (CWG), were formed to allow the team to directly engage with community representatives and leaders to foster relationships and share timely information and input at key milestones within the development of the SIP.

- The TAC included members from local and regional governments and transportation providers. Three TAC meetings were held in July 2020, December 2020, and March 2021.
- CWG membership included local business, medical, educational, environmental, and transportation advocacy representatives. Two CWG meetings were held in July 2020 and December 2020, with a third and final meeting scheduled for April 2021.

² AECOM. 2013. *Coast Corridor Service Development Plan*. Prepared for the California Department of Transportation. <https://www.dropbox.com/s/by8rkhr6qk1jq5j/COAST-DAYLIGHT-SDP-5.2013.PDF?dl=0>

³ Amtrak. 2016. *Coast Daylight Route, Service Ridership & Financial Evaluation*. <https://www.dropbox.com/s/hsgkk3ptb776f8z/Amtrak%20Coast%20Daylight%20Study%20Final.pdf?dl=0>

In addition to the committee meetings, the SLOCOG Board and the Coast Rail Coordinating Committee received project updates at key intervals. A virtual public meeting was held on September 30, 2020 via Webex, which was intended to build study awareness and seek initial input from a broad base of interested parties.

Through discussion with the TAC and with input from other key stakeholders throughout the study area, a list of objectives was developed for integrated bus and rail service along the Coast Rail Corridor which correspond directly with SLOCOG RTP goal areas. These service objectives are described in Table 1-2.

Table 1-2. Study Service Objectives

RTP Goal	Service Objective
Preserve the transportation system	Maximize the efficiency of the existing transportation system (primarily US-101) by shifting trips from private automobiles to transit
	Maintain resilience to projected climate change impacts (e.g., extreme weather, landslides) in the development of increased passenger rail service along the Coast Corridor
Improve intermodal mobility and accessibility for all people	Increase intercity rail and bus ridership
	Provide more convenient, frequent, and reliable intercity rail and bus service (especially to colleges/universities, tourist destinations)
	Provide intercity bus service to population centers not on the existing rail line
	Ensure that all stations and trains are ADA accessible
Support a vibrant economy	Expand transit options for tourists and visitors to Central Coast communities
	Avoid impacting freight rail operations with implementation of passenger rail service improvements
Improve public safety and security	Reduce the likelihood of transportation-related injuries and fatalities
	Provide sufficient capacity to allow social distancing to slow spread of diseases like COVID-19
Foster livable, healthy communities and promote social equity	Improve access to major destinations (e.g., colleges/universities, tourist attractions)
	Expand travel options for populations who cannot or do not drive (i.e. seniors, people with disabilities, people who don't own a car)
	Encourage walking and biking
	Provide affordable access to economically or socially disadvantaged groups
Practice environmental stewardship	Support state climate goals by reducing vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions
	Improve air quality by reducing criteria emissions
	Preserve community character by reducing the need for roadway expansions and parking
Practice financial stewardship	Plan intercity rail and bus improvements that are well-positioned to compete for local, state, and federal funds
	Plan intercity rail and bus improvements that are coordinated with related projects in surrounding areas to make strategic investments (e.g. passenger rail extensions from San Jose to Salinas) and strengthen intermodal connectivity throughout the region
	Provide cost effective service
	Generate fare revenue by providing attractive rail service

2 Existing Conditions

2.1 Study Area

The study area is anchored by the segment of Union Pacific Railroad's (UPRR) Coast Line between Santa Barbara and Salinas, serving the Central Coast counties of Monterey, San Luis Obispo, and Santa Barbara. In addition, the study area includes the Highway 41 corridor from Paso Robles to the Central Valley, which connects the Coast Rail Corridor to rail services in the Central Valley.

The railroad travels roughly parallel to US-101, travelling along the Pacific Coast from Santa Barbara to San Luis Obispo County. In San Luis Obispo County, the railroad crosses the Santa Lucia Mountains and continues north through the Salinas Valley. Within the study area, the rail corridor contains eight passenger rail stations: Salinas, Paso Robles, San Luis Obispo, Grover Beach, Guadalupe, Lompoc-Surf, Goleta, and Santa Barbara.

For the purposes of this SIP, the study area is divided into three corridors, corresponding to service targets in the CSRP: Salinas to San Luis Obispo, San Luis Obispo to Santa Barbara, and Paso Robles to the Central Valley. Located in the center of the corridor, San Luis Obispo is the current terminus of the Pacific Surfliner and is a natural stopping point for rail service, given the geographic barrier presented by the Santa Lucia Mountains to the north.

While the service options considered in this SIP include rail service that travels outside the study area, either to Southern California or the San Francisco Bay Area, the analysis was limited to the study area shown in Figure 2-1. The service targets of the CSRP for other corridors can be met by a variety of combinations of service types and are assumed to be met regardless of what option is ultimately selected for the Coast Corridor. Therefore, to provide an "apples to apples" comparison between the options, the capital and operating costs presented in this SIP only reflect those associated with the Salinas to Santa Barbara and the Central Valley to San Luis Obispo corridors.

Figure 2-1: Study Area



2.2 Existing Rail Services

Two rail services operated by Amtrak currently serve portions of the study corridor: the Pacific Surfliner and the Coast Starlight. In addition, intercity bus services within the study area connect to California’s two other state-supported rail services. The service levels described below reflect the baseline frequencies prior to disruptions related to the COVID-19 pandemic.

2.2.1 Pacific Surfliner

The Pacific Surfliner is a state-supported intercity service operated by Amtrak and managed by the Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor Agency. It is the third highest ridership Amtrak service in the country.

Two daily Pacific Surfliner round trips operate between San Luis Obispo and Los Angeles, making all stops between Santa Barbara and San Luis Obispo. In addition, three daily round trips operate between Los Angeles, Santa Barbara and Goleta.

2.2.2 Coast Starlight

The Coast Starlight provides daily long-distance service between Los Angeles and Seattle, including stops at Santa Barbara, San Luis Obispo, Paso Robles, and Salinas.

2.2.3 Other State Supported Rail Services

In addition to the Pacific Surfliner, the California Department of Transportation (Caltrans) funds intercity rail services in Northern California and the Central Valley. As discussed in Section 2.3.1, bus connections to these services operate in the Central Coast.

Capitol Corridor. This service connects the Sacramento area to the San Francisco Bay Area, travelling from Auburn to San Jose via Oakland, with seven round trips serving San Jose. The service is managed by the Capitol Corridor Joint Powers Authority. The Capitol Corridor is the Amtrak service with the fourth highest ridership in the nation.

San Joaquins. Managed by the San Joaquin Joint Powers Authority, this service connects Central Valley communities to each other, the San Francisco Bay Area, and Sacramento. Seven round trips operate from Bakersfield to Stockton, where the route splits, with five round trips continuing to Oakland and two to Sacramento.

2.3 Existing Bus Services

Existing bus services in the study area are more varied than rail services, with multiple operators and a range of service types.

2.3.1 Amtrak Thruway

Amtrak operates Thruway bus service in the study area to connect to the three state-supported rail services in California:

- Pacific Surfliner: Route 17 (four round trips per day) connects to Pacific Surfliner trains, three in Santa Barbara and one in SLO, and travels to Salinas and beyond
- Capitol Corridor: Route 21 (one round trip per day) connects to the Capitol Corridor in San Jose and extends to Santa Barbara
- San Joaquins: Route 18 (two round trips per day) connects to San Joaquins trains in Hanford and travels to Santa Maria via Paso Robles

Previously, Thruway services in California were intended to be used to connect to trains, and passengers could only purchase tickets as part of a journey that includes a rail trip. However, recent state legislation - Senate Bill (SB) 742 - opened the possibility for rail joint powers authorities (JPAs) to contract with Amtrak for intercity bus services that would not require passengers to connect to trains. SB 742 enables Caltrans to provide funding for bus connections to be administered by rail JPAs and permits such bus services to allow passengers to board without having to purchase a rail ticket.

The JPAs managing the San Joaquin and Capital Corridor services have taken advantage of this legislation to offer bus-only tickets on their connecting Thruway routes.

2.3.2 Regional Public Transit

There are multiple regional public transit agencies operating bus service within the study corridor that parallels the railroad. However, these services are generally oriented towards intra-regional rather than inter-regional trips and operate largely within individual counties. Designed around current market needs, existing public transit service is concentrated in peak travel periods, with additional service at bi-hourly and sometimes longer intervals in the off-peak periods. These services are not intended to provide one-seat rides along the entire corridor.

Local public transit services are characterized by:

- **Subregions within the corridor** – Public transit providers include the two primary providers in this corridor: San Luis Obispo Regional Transit Authority (SLORTA) and Monterey-Salinas Transit (MST). SLORTA serves the entire corridor within San Luis Obispo County, from Paso Robles to the Five Cities area in South County. MST serves the area from Salinas south of Paso Robles and Templeton in San Luis Obispo County. Two smaller providers, Breeze and Clean Air Express, serve small communities in the southern end of the corridor.
- **Service types** – Public transit services provide both local services with stops at shorter intervals and more direct, express-bus service with fewer stops. Due the differences in operating patterns, these routes may look duplicative, but they serve different markets.
- **Fund sources** – Public transit subsidy funding that comes to each operator is a mix of funds received from sources that include the Federal Transit Administration (FTA), State of California Transportation Development Act, State Transit Assistance Act, and local sales tax sources. To some extent, the fund source determines the type of service provided. Certain public transit routes operated within the corridor are supported, in part, by FTA Section 5311 which provides formula grant funding for rural areas for provision of public transportation and intercity bus services to rural areas with less than 50,000 population. Within Section 5311, paragraph (f) stipulates that states dedicate 15 percent of their allocation to intercity bus serving the needs of rural communities.

Existing services parallel to the rail corridor include:

- Monterey-Salinas Transit (MST) Route 23 from Salinas to King City
- MST Route 82 from Salinas to Fort Hunter Liggett
- MST Route 84 from King City to Paso Robles
- MST Route 85 from Monterey to Templeton
- MST Route 86 from King City to San Jose
- San Luis Obispo Regional Transit Authority (SLORTA) Route 9 from Paso Robles to San Luis Obispo
- SLORTA Route 10 from San Luis Obispo to Santa Maria
- Breeze Bus Route 100 from Santa Maria to Lompoc
- Breeze Bus Route 200 from Santa Maria to the Santa Ynez Valley (i.e. Buellton and Solvang)
- Clean Air Express shuttles from Santa Maria, Lompoc, and the Santa Ynez Valley to Santa Barbara and Goleta

It is important to note that the Amtrak Thruway and regional bus services are not mutually exclusive. For example, MST Route 86, which connects rural communities of the Salinas Valley to Capitol Corridor service in San Jose, is both a Thruway route and receives 5311(f) funding. Given the limited funding available and low population density of rural areas, it is important to align intercity and regional services to serve a variety of travel needs cost effectively.

2.3.3 Private Operators

In addition to the public intercity and local transit services discussed above, Greyhound operates intercity bus service between Los Angeles and San Francisco, with intermediate stops along the Central Coast in Santa Barbara, Santa Maria, King City, and Salinas. While Greyhound serves the rail stations at either end of the study corridor, it does not serve the intermediate stations along the railroad.

In addition to coastal routes, Greyhound and other private operators have parallel routes between Los Angeles and San Francisco via the Central Valley that offer faster travel times than are currently possible by rail along the coast.

Since the State and SLOCOG cannot dictate the service planning of private operators, private operators are not assumed to contribute to the overall integrated bus and rail service levels for each phase. However, this does not preclude contracting with Greyhound or other private bus operators to provide the intercity bus services detailed in the phased plan.

2.4 Travel Times

Table 2-1 shows travel times by mode for major origin-destination (OD) pairs along the coast. Due to the circuitous nature of the railroad, travel times are generally higher for rail than bus.

Table 2-1. Comparative Travel Times by Mode

City Pair	Direction	Rail	Bus	Auto
Los Angeles and San Francisco	North	11:55*	7:35-10:15	5:20-7:10
	South	13:15*	7:35-9:30	5:30-7:20
Santa Barbara and San Luis Obispo	North	2:42-2:52	2:10-2:20	1:30-2:00
	South	2:29-2:44	2:00-2:40	1:30-2:00
San Luis Obispo and Salinas	North	2:53	2:45-3:15	1:50-2:20
	South	3:19	2:30-3:25	1:50-2:20
Santa Barbara and Salinas	North	5:48	4:55-5:15	3:20-4:10
	South	6:07	4:50-5:50	3:10-4:00

Sources: Google Maps, 2019 Amtrak Schedules

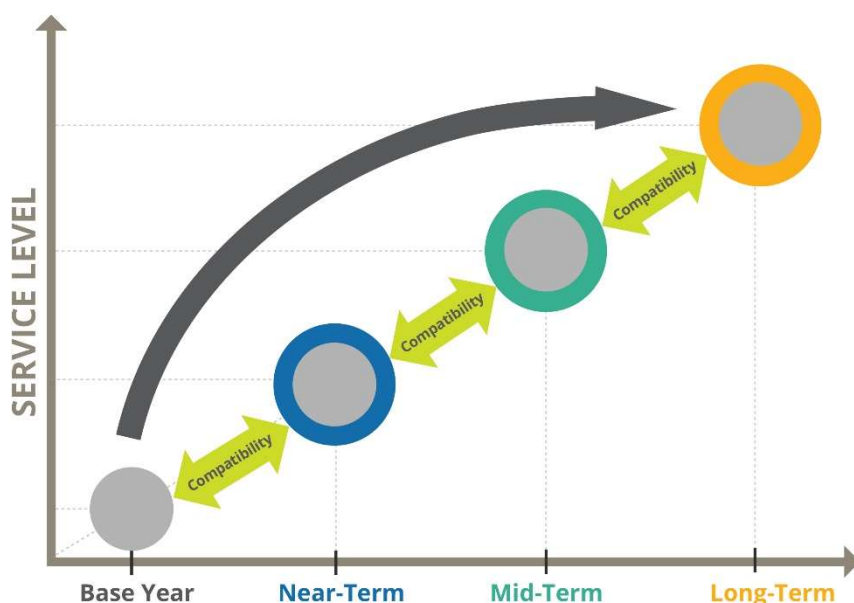
*Includes bus connection from Oakland to San Francisco

3 Integrated Rail/Bus Service Options

3.1 Service Option Development

Service options that fulfill the parameters in the CSRP were identified and refined for near, mid- and long-term horizons. After defining service options, analysis was performed to understand each option’s infrastructure needs, costs, governance implications, and compatibility with other relevant transportation initiatives. For nearer-term scenarios, evaluation included ensuring compatibility with the recommendations for the long-term horizon.

Figure 3-1. Relationship of Service Planning Horizons



3.2 Assumptions and Constraints

A principal tenet of the CSRP is to establish an integrated intercity rail and bus operation. This multi-modal strategy is crucial in order to achieve the hourly service planned for the long-term horizon and to provide travelers in the corridor with sufficiently flexible service options to meet a range of travel needs. This approach was recognized, in part, in SB 742 [Government Code Section 15035.55], which enables intercity rail JPAs to enter into contracts necessary to deliver intercity transportation via various bus service providers. Furthermore, SB 742 allows tickets for these services to be purchased without a connecting rail trip, which was previously prohibited for dedicated Amtrak Thruway service.

Managing a coordinated, integrated rail and bus operation along the entire Central Coast may require new long-term organizational and operational structures. This study assumes that bus operations within the corridor can begin to address near-term goals of the CSRP (leveraging existing motor carrier service where possible), even while building towards the long-term organizational, operational and funding structures that will be required to achieve longer-term targets.

3.2.1 Rail and Bus Integration Framework

The State’s vision for the intercity rail and bus network is exemplified by “pulsed” scheduling, where service operates at regular, repeating intervals and different services connect at hubs with a predictable pattern. This makes schedules easy for customers to understand and enables meaningful connections between services. The CSRP sets targets for overall service frequency; individual transit trips are provided by either rail or bus, and these service levels add together to meet the overall desired service level. Figure 3-2 and Figure 3-3 illustrate an example of this integration and frequency improvement from near-term to long-term.

Figure 3-2. Near-Term Integrated Rail and Bus Illustration

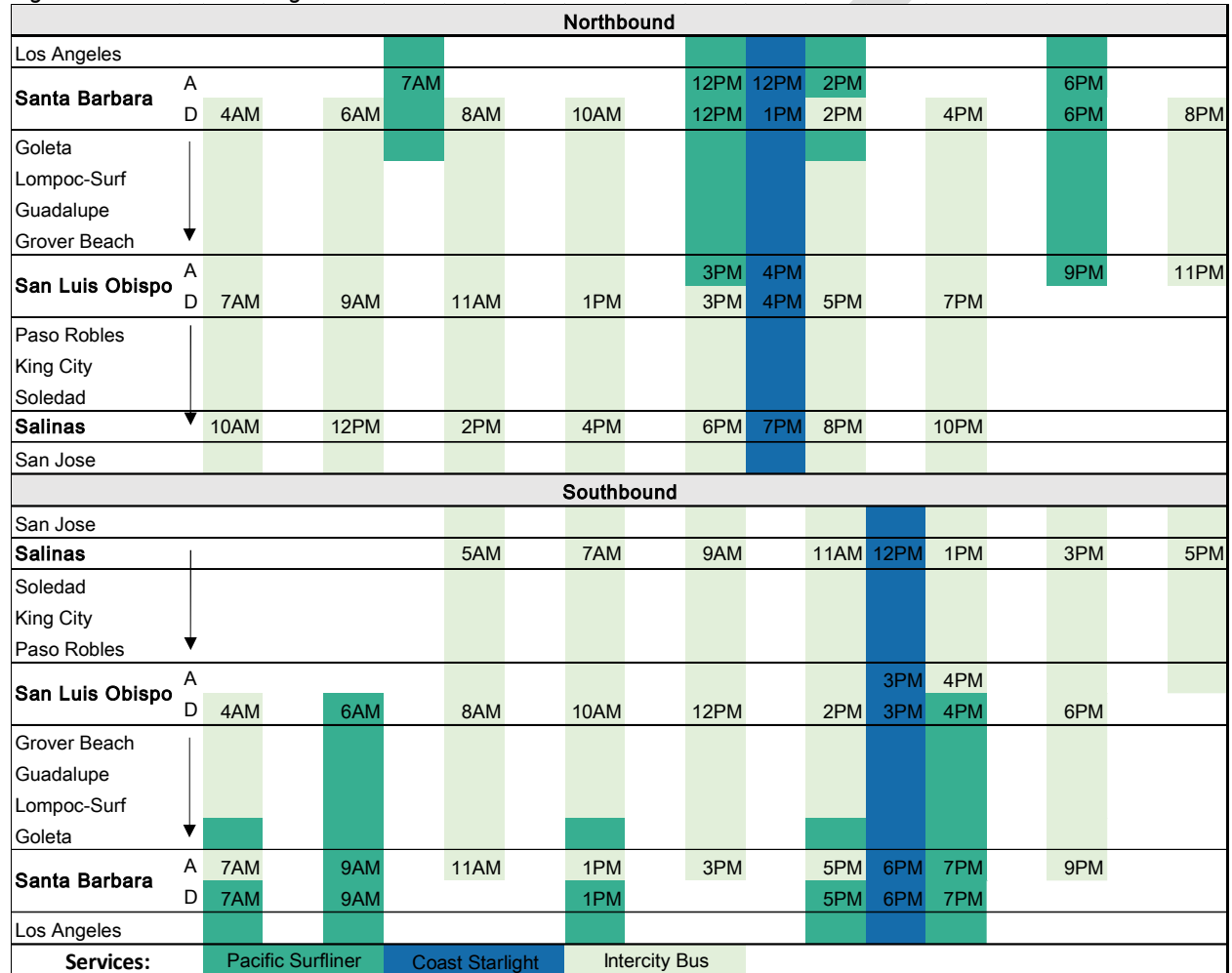


Figure 3-3. Long-Term Integrated Rail and Bus Illustration



Service Span

Service is assumed to operate for most of the day, but without passenger service at night, where demand is low. Schedules will be anchored to arrival times in the three hubs of the corridor: Salinas, San Luis Obispo, and Santa Barbara. The service span will be such that arrivals are provided roughly between 6am and 11pm in each location. To align the arrival windows at each location, departures must begin at roughly similar times from each location as well. As a result, the first trains departing San Luis Obispo early in the morning and last trains arriving at night may not have connections, as this would require operating late into the night when travel demand is limited.

3.3 Near-Term

For the near-term horizon, rail service is assumed to return to 2019 pre-COVID levels. In this timeframe, the CSRPs call for increased bus service along the Salinas-Santa Barbara corridor to every two hours each way, along with “enhancement” of connections from the Central Coast to the San Joaquins service in Hanford.

Because this horizon does not include additional rail service, there are no separate options for the near-term period. Near-term service assumes a coordinated mix of bus services, among the existing providers

and services, that will not be a corridor-length service but builds upon what is currently in place. Coordination around times and transfers will be important to facilitate corridor-length travel.

3.4 Mid-Term

In the mid-term horizon, the CSRPs call for service every two hours on all three segments of the study area, with rail service increasing by one round trip along the Central Coast. Three options were identified to achieve an additional intercity train round trip along the Coast Corridor, as described below. Since rail operations are less flexible than bus operations, conceptual schedules that fulfill this service target were developed first by identifying approximate rail times, then scheduling buses to fill in the remaining gaps in bihourly service.

The following key assumptions were made for each option:

1. A slight change in the Coast Starlight schedule, as described in Section 4.1.1.
2. Pacific Surfliner schedules were aligned to a “clockface” with arrivals departures at regular intervals. Service between Goleta and Los Angeles is assumed to be every 2 hours in each direction, consistent with the CSRPs.
3. Capital improvements as part of the ongoing LOSSAN North Improvement Program are completed.
4. No changes to the San Joaquins schedule are assumed.
5. The new service north of San Luis Obispo would have additional stops in Soledad and King City.

The three service options are presented in Table 3-1 and discussed in sections 3.4.1 – 3.4.3 below. Note that these options are modifiable and do not preclude different service patterns. For example, an extension of the Pacific Surfliner may be better served by a terminus other than Salinas.

Table 3-1. Summary of Service Options, Round Trips per Day by Corridor Segment, Mid-Term Horizon

Service Option	Santa Barbara-SLO	SLO-Salinas	SLO-Hanford
A: Extend Capitol Corridor	1 Coast Starlight 3 Pacific Surfliners 5 buses	1 Coast Starlight 1 new service from Bay Area to SLO via Salinas 8 buses	8 buses
B: Extend Surfliner	1 Coast Starlight 3 Pacific Surfliners 5 buses	1 Coast Starlight 1 Pacific Surfliner extended to Salinas or beyond 8 buses	8 buses
C: Coast Daylight	1 Coast Starlight 1 “Coast Daylight” 2 Pacific Surfliners 5 buses	1 Coast Starlight 1 “Coast Daylight” from LA to San Jose or San Francisco 8 buses	8 buses

3.4.1 Option A: Extend Capitol Corridor

Figure 3-4. Service Option A, Mid-term



This option increases service by one train on the northern and southern segments by adding a new extension of service from San Jose to SLO, along with a third Surfliner trip between Santa Barbara and SLO. This option would allow passengers to make a platform connection between the trains at SLO.

The Capitol Corridor is the state supported service with the closest terminus to Salinas. However, it is also possible to implement a service from the Bay Area to SLO through an extension of one of the other Northern California rail services, including the San Joaquins, the Altamont Corridor Express, or Caltrain.

For the development of conceptual schedules, times for the additional Pacific Surfliner for were derived from draft conceptual schedules from ongoing LOSSAN planning efforts.

3.4.2 Option B: Extend Surfliner

Another option to achieve an additional train on both segments of the corridor is to add a Pacific Surfliner trip that extends beyond SLO to Salinas or beyond. For modeling purposes, it was assumed that the service would terminate in Salinas, with the State Rail Plan's service targets north of Salinas achieved by other, connecting services, such as the planned extension of Caltrain service from Gilroy to Salinas.

However, while terminating in Salinas would allow one-seat rides between the southern and northern portions of the corridor, it would require transfers for passengers travelling between the Central Coast and the Bay Area. Furthermore, coordination with regional stakeholders revealed concern over the feasibility of locating an additional layover facility in Salinas.

Therefore, an alternative terminus north of the study area, such as San Jose or Gilroy, is likely to optimize connectivity and reduce potential operational conflicts in Salinas.

Figure 3-5. Service Option B, Mid-term¹



¹While Salinas was assumed as a terminus for modeling purposes, this is not recommended for implementation.

For the development of conceptual schedules, times between Santa Barbara and SLO were derived from draft conceptual schedules from ongoing LOSSAN planning efforts. Runtimes for the northern segment were developed using the Rail Traffic Controller (RTC) simulation (discussed further in Section 4).

3.4.3 Option C: Coast Daylight

Providing an additional train on the northern and southern portions of the corridor could be achieved by operating an intercity train between Los Angeles and San Francisco. This route was originally served by Southern Pacific Railroad’s “Coast Daylight.” In 1971, Amtrak assumed operation of the service, renamed the train the “Coast Starlight”, routed the train through Oakland and extended it to Portland and Seattle. In the intervening decades, Central Coast communities have lobbied for the reintroduction of intercity rail service operating into downtown San Francisco.

In developing conceptual schedules, the proposed times from the 2016 Amtrak Coast Daylight Study were modified to operate in clockface time slots along with Pacific Surfliners.

Figure 3-6. Service Option C, Mid-term



3.4.4 Integrated Bus Service

The mid-term horizon assumes a move towards an integrated administration and operation of intercity bus service in the Central Coast corridor to meet the service level recommendations outlined in the CSR. Local public transit agencies will still operate circulator services within this corridor that connect to rail services, with some overarching regional express service as well.

Express bus service every two hours between SLO and Hanford would connect travelers to enhanced Coastal rail and bus service, as well as the San Joaquins in the Central Valley, laying the foundation for robust connections to future High-Speed Rail.

3.5 Long-Term

For the long-term horizon, the CSR calls for integrated intercity rail and bus operating hourly on each of the study segments. Intercity rail will operate at least every four hours between Salinas and San Luis Obispo and every two hours between San Luis Obispo and Goleta/Santa Barbara.

The following key assumptions were made for each option:

1. A slight change in the Coast Starlight schedule, as described in Section 4.1.1.
2. Pacific Surfliner schedules were aligned to a “clockface” with arrivals departures at regular intervals. Service between Goleta and Los Angeles is assumed to be hourly in each direction, consistent with the CSR.
3. Capital improvements as part of the ongoing LOSSAN North Improvement Program are completed.
4. San Joaquins service to Hanford is ceased, and High-Speed Rail service is available at a new Kings/Tulare station every half hour.

The three service options are presented in Table 3-2 and discussed in sections 3.5.1 – 3.5.3 below. These options are modifiable and are not mutually exclusive. Extensions of existing service could be implemented with different termini, or frequency targets for the corridor could be met by a combination of the service types below.

Table 3-2. Summary of Service Options: Round Trips per Day by Corridor Segment, Long-Term Horizon

Service Option	Santa Barbara-SLO	SLO-Salinas	SLO-Hanford
A: Extend Capitol Corridor	1 Coast Starlight 7 Pacific Surfliners 8 buses	1 Coast Starlight 3 new service from Bay Area to SLO via Salinas 11 buses	13 buses
B: Extend Surfliner	1 Coast Starlight 7 Pacific Surfliners 8 buses	1 Coast Starlight 3 Pacific Surfliner extended to Salinas or beyond 11 buses	13 buses
C: Coast Daylight	1 Coast Starlight 3 "Coast Daylight" 4 Pacific Surfliners 8 buses	1 Coast Starlight 3 "Coast Daylight" from LA to San Jose or San Francisco 11 buses	13 buses

3.5.1 Option A: Extend Capitol Corridor

In the long-term horizon, the new Bay Area to SLO service would be expanded from one round trip to three. These trains would connect to the Pacific Surfliner and hourly bus service to the Central Valley in SLO. Pacific Surfliner service would be extended to SLO every two hours.

Figure 3-7. Service Option A, Long-term

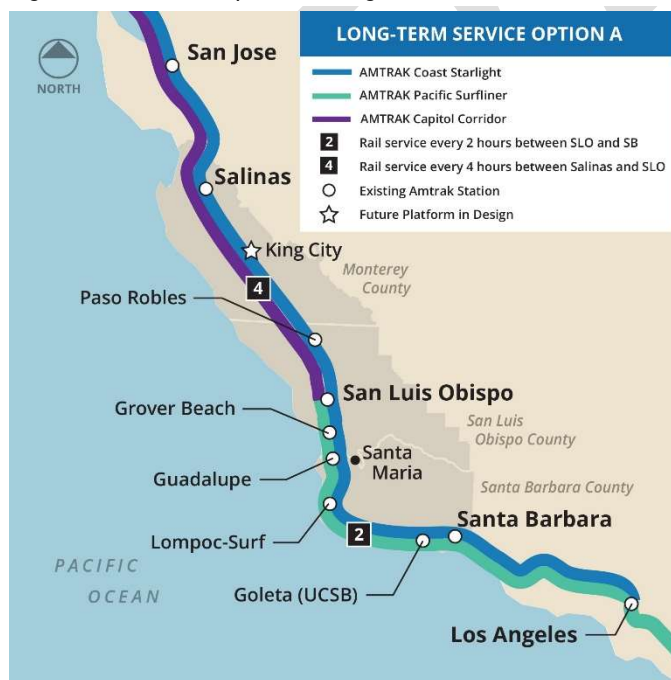


Figure 3-8. Service Option B, Long-term¹



¹While Salinas was assumed as a terminus for modeling purposes, this is not recommended for implementation.

3.5.2 Option B: Extend Surfliner

The Surfliner extension would build on the expansion in the mid-term horizon, with a total of 3 round trips to Salinas and 4 to SLO to achieve the 4-hour and 2-hour service targets.

Like the Coast Daylight, this service would allow one-seat rides between the southern and northern portions of the corridor but would require transfers for passengers travelling between the Central Coast and Bay Area.

As described in Section 3.4.2, Salinas was assumed as the terminus for modeling purposes, but connectivity and operations would likely be optimized by alternative terminus north of the study area, such as San Jose or Gilroy.

3.5.3 Option C: Coast Daylight

The Coast Daylight option would include 2 additional Coast Daylight round trips from Los Angeles to San Francisco for a total of 3 round trips spaced four hours apart from each other.

To achieve the every 2-hour service target from Santa Barbara to SLO, additional Pacific Surfliners would be added for a total of 4 round trips.

Figure 3-9. Service Option C, Long-term



3.5.4 Integrated Bus Service

Additional bus service is included in the long-term horizon to meet the goal of hourly integrated service throughout the Coast Corridor as well as connecting to Central Valley service. Since rail is less flexible, the bus service is timed to operate as regularly as possible between rail intervals. The long-term horizon assumes a full transfer to integrated administration and operation of intercity bus and rail service. As with the mid-term horizon, local public transit agencies will still operate circulator services within this corridor that connect to rail, with some overarching regional express service as well.

For the Central Coast to Central Valley, the east terminus of the service is moved from the existing Hanford Station to the future Kings/Tulare High-Speed Rail station.

DRAFT

4 Operations, Infrastructure, and Cost Analysis

4.1 Operating Assumptions

4.1.1 Rail Operating Assumptions

In 2018, the California State Transportation Agency (CalSTA) awarded LOSSAN funding for the LOSSAN North Improvement Program through the Transit and Intercity Rail Capital Program (TIRCP). The program consists of improvements to increase frequency and on-time performance between Los Angeles, Santa Barbara, and SLO, including enabling a third round trip to SLO. In 2020, LOSSAN, CalSTA, and UPRR reached agreement on infrastructure improvements between Santa Barbara and SLO.

As programmed projects, these improvements were assumed in the baseline infrastructure for the mid-term and long-term horizons. These improvements include:

- Complete installation of Centralized Traffic Control (CTC) and Positive Train Control (PTC) systems (105 miles)
- Powering selected sidings for train meets. Sidings converted to powered, controlled sidings include:
 - Callender, Milepost (MP) 266.3-268.1 (Callender is also extended to 9000 feet)
 - Guadalupe, MP 272.7-273.6
 - Waldorf, MP 276.7-277.5
 - Devon, MP 282.8-283.7
 - Narlon, MP 289.4-290.7
 - Tangair, MP 293.7-294.8
 - Honda, MP 303.4-304.8
 - Concepcion, MP 320.7-322.0

For both horizons, Pacific Surfliner schedules are adjusted to a “clockface” pattern, with trains consistently arriving the same minute of each hour, consistent with the CSRP.

To reflect ongoing negotiations between Amtrak and UPRR, a slight change to the Coast Starlight schedule was assumed in both horizons, per UPRR direction:

- Northbound operates 16 minutes earlier at all stations
- Southbound operates 25 minutes later at all stations

Note that negotiations between Amtrak and UPRR may result in a final schedule that may differ from that used in this analysis.

4.1.2 Bus Operating Assumptions

The corridor’s length of over 220 miles between Santa Barbara and Salinas poses challenges for bus service. Bus drivers’ base locations impact operations in a corridor that crosses three county jurisdictional boundaries. While basing most bus operations out of centrally-located San Luis Obispo makes sense logistically, there are early bus trips originating in the northern part of the study corridor that need to be accommodated to serve particular markets. Trip scheduling is among the key issues to be addressed, along with vehicle maintenance facility locations and where drivers report and end their shifts.

For intercity bus the following key assumptions and constraints apply to all time horizons:

- Buses and bus drivers must be scheduled to end their day at the same place where they started service. The length of this corridor makes it prohibitively expensive to assume that drivers and vehicles can deadhead back to base yards.

- Driver shifts can include a significant break during the day, to facilitate scheduling, but must not exceed a maximum spread time of 12 to 13 scheduled hours.
- Planning for bus operations must ensure compliance with California's Innovative Clean Transit (ICT) regulations for zero-emission vehicles (ZEVs), applicable to the mid-term and long-term scenarios. Such planning must recognize that:
 - Current vehicle ranges for electric bus operations are often under 100 miles before re-charging is required.
 - Scheduling of vehicle trips must accommodate ZEV charging times, if done during the service day rather than as over-night charging.
 - Charging infrastructure requirements, including placement, installation and funding all must be addressed.
 - Hydrogen-powered vehicles generally have longer operating ranges of 250 miles or more.
 - The Innovative Clean Transit Rule includes exceptions if no ZEVs can cover the required trip mileage.
 - Organizational responsibility for ICT compliance and administration must be included within the assignment of functions.
- Vehicle scheduling must ensure that running times accommodate near- and mid-term traffic delays and known congestion patterns within the corridor.
- Post-COVID-19 commute patterns are not yet known; while there may be opportunity to serve the long-distance, infrequent commuter trip in this corridor, it cannot be assumed that pre-COVID commute patterns will return.

4.2 Rail Operations Modeling

Determining the most cost-effective approach to support increased passenger rail service in the region is critical to successfully implementing the service and ensuring its long-term success. Overestimating the infrastructure required to support both future freight and passenger service would negatively impact the ability to attract funding to support those improvements; conversely, underestimating the infrastructure requirements may inhibit the new service from operating on time to the degree needed to both attract and retain riders. This section provides an overview of the modeling methodology; additional detail on the methodology and results are provided in **Appendix A**.

To identify infrastructure improvements, hypothetical schedules were developed and tested through rail simulation analysis using Rail Traffic Controller (RTC), a software used by the Federal Railroad Administration and most Class I railroads, including UPRR. UPRR's existing RTC model of the project area provided valuable input to the development of this SIP.

The model limits spanned the Pacific Santa Barbara and Coast Subdivisions between Santa Barbara and Salinas. For both existing and proposed passenger services, the model assumed a train consist of a diesel-electric locomotive and six passenger coaches, based on the typical Pacific Surfliner consist.

The modeling process included the following steps:

1. Test and validate the base model to ensure all trains and the infrastructure operate as intended in the existing condition
2. Develop mid-term model

- Insert infrastructure improvements agreed upon by LOSSAN, Caltrans and UPRR between Santa Barbara and San Luis Obispo
 - Adjust existing passenger rail schedules for consistency with the CSR, and insert infrastructure improvements requested by UPRR between SLO and Salinas
 - Test proposed options
 - Option A: Model a train from the north operating between Salinas and SLO, providing a platform transfer option for passengers between this service and Pacific Surfliner trains at SLO
 - Options B and C: Extend one train currently terminating in SLO to/from Salinas (Option B) or San Francisco (Option C). Within the limits of the model, these options are the same. Salinas is assumed as a terminus for modeling purposes and should not be construed as a service recommendation.
 - Insert additional infrastructure improvements between SLO and Salinas, if required
 - Re-run model to gauge the effectiveness of the added infrastructure improvements.
3. Develop long-term model
- Develop clockface Pacific Surfliner schedules consistent with the CSR between Santa Barbara and SLO, using infrastructure developed in the mid-term model
 - Insert additional infrastructure improvements between Santa Barbara and SLO, if required
 - Extend three of the SLO trains to/from Salinas. To generate a high-level assessment of necessary infrastructure investment, only one conceptual schedule was modeled, as it was assumed that all service options (A, B, and C) would use similar train slots. Differences in specific infrastructure requirements between the long-term options would be influenced by interaction with future schedules of the Coast Starlight, as well as Pacific Surfliner, Capitol Corridor, Metrolink, and High-Speed rail outside the Coast Corridor, which are unknown at this time.
 - Insert additional infrastructure improvements between SLO and Salinas, if required
 - Re-run model to gauge the effectiveness of the added infrastructure improvements

For all simulations, the primary goal is to validate that the proposed infrastructure improvements not only support the new services, but also maintain on-time performance for Amtrak's Coast Starlight long-distance service and the continued ability of UPRR freight trains to serve industrial customers along the corridor.

This model did not analyze how these schedules interact with Metrolink, Pacific Surfliner or freight schedules south of Goleta. These schedules merely display workable clockface schedules within the project area and can be shifted to better integrate with Surfliner services between Goleta and San Diego and available train slots on the Metrolink route segment between Montalvo and Los Angeles Union Station.

4.3 Cost Estimate Methodology

Rough order-of-magnitude cost estimates for both intercity rail and bus service were estimated based on typical unit costs for infrastructure, vehicles, and operating expenses, as described below.

4.3.1 Rail

4.3.1.1 Capital Costs

Capital Improvements

Capital costs for necessary infrastructure improvements were estimated based on typical unit costs from industry experience. For example, cost of a new or extended siding would be estimated by multiplying the number of track feet by typical cost per track foot. Subsequently, a percentage increase was applied to account for overhead costs, such as design, project management, and flagging along the railroad. The

capital improvements presented in this plan include elements necessary to achieve enhanced frequency along the corridor, but not all potential capital expenditures (e.g. new station costs). Further detail on the assumptions, methodology, and resulting cost estimates is provided in **Appendix B**.

Equipment

To estimate costs for rail equipment, the number of trainsets required to operate daily service was estimated based on the number of new train miles, in comparison to the current average daily train miles of LOSSAN trainsets. For both Pacific Surfliner and Coast Daylight-type services, a 6-car consist with one locomotive was assumed, and a 5-car consist was assumed for the Capitol Corridor extension. Table 4-1 shows the unit costs and trainset composition assumed for each service.

Table 4-1. Consist Assumptions by Service Option

Vehicle Type	Estimated Unit Cost (\$2021)	Capitol Corridor	Pacific Surfliner	Coast Daylight
Diesel-Electric Locomotive	\$7,380,000	1	1	1
Bi-Level Coach Car	\$4,100,000	2	2	2
Bi-Level Coach Café Car	\$4,920,000	1	1	1
Bi-Level Business Class Car	\$4,612,500	1	2	2
Bi-Level Coach Baggage Cab Car	\$5,022,500	1	1	1
Total Cost		\$30,135,000	\$34,747,500	\$34,747,500

Source: Unit costs in 2020 dollars from Caltrans were inflated at 2.5% per year

4.3.1.2 Operations and Maintenance

Operations and maintenance (O&M) costs were estimated based on unit costs for existing state-supported rail services on the corridor and inflated to 2021 dollars at a rate of 2.5 percent per year, as shown in Table 4-2. For Pacific Surfliner and potential Coast Daylight operations, costs for the Pacific Surfliner are assumed to be most comparable. For a potential Bay Area to SLO service, costs for the Capitol Corridor, which utilizes shorter trainsets, are assumed.

For each option, train miles for each service are multiplied by the appropriate unit cost to estimate total O&M costs. The analysis was limited to the study corridor, considering only train miles between Salinas and Santa Barbara, as it was assumed that differences in service provided outside the corridor would be made up by increases or decreases in other services to meet the CSRP’s service goals for other corridors.

Table 4-2. Unit Cost Assumptions by Service Option

Service Option	Rail Services	Comparable Service	Cost per Train Mile (2019\$)	Cost per Train Mile (2021\$)
Extend Capitol Corridor	Capitol Corridor (Oakland-SLO)	Capitol Corridor	\$52.89	\$55.57
	Pacific Surfliner (LA-SLO)	Pacific Surfliner	\$79.65	\$83.68
Extend Pacific Surfliner	Pacific Surfliner (LA-Salinas)	Pacific Surfliner	\$79.65	\$83.68
	Pacific Surfliner (LA-SLO)	Pacific Surfliner	\$79.65	\$83.68
Coast Daylight	Coast Daylight (LA-San Jose or San Francisco)	Pacific Surfliner	\$79.65	\$83.68
	Pacific Surfliner (LA-SLO)	Pacific Surfliner	\$79.65	\$83.68

Notes:

LOSSAN cost per train mile was imputed for a typical 480-seat, 6-coach consist based on total federal fiscal year to date expenses and seat miles as of January 2020, prior to service disruptions resulting from the COVID-19 pandemic.^{4,5}

Capitol Corridor cost per train mile for Fiscal Year 2019 derived from 2020 CCJPA Business Plan.⁶

4.3.2 Bus

4.3.2.1 Capital Costs

Vehicle purchase requirements were estimated based on the number of vehicles in maximum daily service, and at least one spare for each end of both the Coast Corridor and SLO-Central Valley corridor. Based on FTA useful life benchmarks of 500,000-mile useful life, vehicles were assumed to have one mid-cycle overhaul and be replaced after 1 million miles.

Capital costs were estimated for both Battery Electric Buses (BEBs) and hydrogen Fuel Cell Electric Buses (FCEBs), given the uncertainty in future technological and regulatory landscape.

Based on recent experience with Foothill Transit and the California Association for Coordinated Transportation/Morongo Basin Transit Authority Electric Vehicle Purchasing Collaborative, a cost of \$900,000 per 40ft electric bus was assumed. Plug-in electric bus chargers (324 kW) are assumed to be required in SLO and each terminal city (Salinas, Santa Barbara, and Hanford). For FCEB, a cost of \$1.2 million was assumed.

For all time horizons, the bus service is assumed to require a maintenance facility similar to the MST South County Operations and Maintenance Facility that broke ground in July 2020 and is being built to accommodate future electric and hydrogen fuel cell vehicles.

4.3.2.2 Operations and Maintenance

Bus O&M costs were estimated based on total revenue hours and the average cost per revenue hour reported to the 2019 National Transit Database for three bus operators along the Central Coast, as shown in Table 4-3. The 2019 costs were escalated with two years of inflation at 2.5 percent to approximate 2021 costs.

⁴ Amtrak. 2020. *January 2020 Monthly Performance Report*.

⁵ LOSSAN Rail Corridor Agency. 2019. *FY 2019-20 to FY 2020-21 Business Plan*.

⁶ Capitol Corridor Joint Powers Authority. 2020. *2020 Business Plan Update*.

Table 4-3. Bus Operating Cost Assumptions

Operator	NTD Mode	Cost per Revenue Hour
Monterey Salinas Transit	Motor Bus	\$139.36
Ventura County Transportation Commission	Commuter Bus	\$130.28
San Luis Obispo Regional Transportation Authority	Motor Bus	\$127.78
Average (\$2019)		\$132.47
Inflated Average (\$2021)		\$139.18

Source: 2019 National Transit Database

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5 Near-Term Horizon Overview

The near-term horizon assumes rail service returns to 2019 pre-COVID levels. In this timeframe, the CSRP calls for increased bus service along the Salinas-Santa Barbara corridor to every two hours each way, along with enhanced bus connections from the Central Coast to the San Joaquins service in Hanford.

5.1 Rail Service

No increases in rail service above the 2019 baseline are assumed in the near-term horizon. Service changes in the near-term will consist of restoration of pre-COVID service levels and routine schedule changes to improve customer experience and accommodate the needs of railroad partners outside the corridor.

5.2 Integrated Bus Service

With no increases in rail service above pre-COVID levels, increases in intercity bus trips will allow the corridor to meet the CSRP goal of service every 2 hours. Preliminary conceptual schedules were developed which integrate bus trips between scheduled Surfliner and Coast Starlight service. These conceptual schedules utilize timing and stopping patterns from Amtrak Thruway, MST, SLORTA, and other provider services, in order to provide service where it is most needed throughout the day. Running times were developed using Amtrak Thruway schedules.

The cost estimates below assume that the coastal integrated bus service is operated as a single, standalone bus operation. Cost savings may be possible by integrating part of all of the service with other regional or intercity bus operations.

5.2.1 Capital Costs

Table 5-1 shows the capital costs for vehicles and facilities required to operate a dedicated Coast Corridor intercity bus service. For the purpose of estimating vehicle replacement cost, the mid-term horizon is assumed to span from 2027 to 2035. With BEB technology, more vehicles are required in maximum daily service to account for lower range and long charging time. However, this allows revenue miles to be spread over more vehicles than for FCEB. As a result, while BEB vehicles must be purchased at the outset, they do not reach the average of 1 million miles per vehicle during the near-term horizon, and these costs are postponed to the mid-term horizon.

Table 5-1. Intercity Bus Capital Costs, Near-Term (2021 Dollars)

Service	# of Units	Unit Price	Total Cost
Battery Electric Bus			
New Vehicle Purchase	19	\$900,000	\$17,100,000
Replacement Vehicle Purchase	0	\$900,000	\$0
Charging Equipment	6	\$200,000	\$1,200,000
Facilities			\$21,200,000
Total			\$39,500,000
Fuel Cell Electric Bus			
New Vehicle Purchase	14	\$1,200,000	\$16,800,000
Replacement Vehicle Purchase	10	\$1,200,000	\$12,000,000
Facilities			\$21,200,000
Total			\$50,000,000

Using hydrogen FCEB would require higher upfront capital cost than BEB. This would be partially offset by lower costs in the long term, due to the ability to provide service with fewer buses. However, as alternative fuel vehicles are a rapidly-evolving technology, the relative cost efficiencies of these options may change over time.

Operationally, FCEB provides significant operational flexibility due to quick refueling and longer range than BEB. These characteristics are particularly valuable for long-distance intercity service.

5.2.2 Operating and Maintenance Costs

Table 5-2 shows the annual revenue hours and associated operating costs for the integrated intercity bus service along the Coast Corridor and Central Valley to Central Coast corridors.

Table 5-2. Near-Term Intercity Bus Operating Costs (2021 Dollars)

Service	Annual Revenue Hours	Annual Operating
Coast Corridor	30,175	\$4,200,000
Central Valley	7,260	\$1,016,000
Total	37,435	\$5,216,000

5.3 Summary of Findings

Table 5-3 summarizes the cost of implementing enhanced integrated bus service in the near-term. Utilizing FCEB would incur greater upfront capital cost than BEB, but would provide greater operational flexibility due to longer range and quicker refueling, which are advantageous for long-distance, intercity routes.

Table 5-3. Summary of Rough Order-of-Magnitude Costs, Near-Term (2021 Dollars)

	A-Capitol Corridor Extension
Annual Bus Operating Cost	\$5,216,000
Bus Capital Cost-BEB	\$39,500,000
Bus Capital Cost-FCEB	\$50,000,000

6 Mid-Term Horizon Overview

The mid-term horizon includes integrated bus and rail service every two hours on all three segments of the study area, with rail service increasing by one round trip along the Central Coast. The three rail options evaluated below all allow for an additional intercity train round trip along the Coast Corridor. Conceptual schedules to meet the CSRPs mid-term horizon targets were developed first by identifying approximate rail times, then scheduling buses to fill in the remaining gaps in bihourly service.

6.1 Analysis of Rail Options

6.1.1 Infrastructure Needs

Table 6-1 summarizes the improvements requested by UPRR or identified through operational modeling for each service option. Note that only the Santa Barbara to Salinas segment was modeled, and service options traveling north of Salinas may require additional improvements subject to further study and negotiation with host railroads. Improvements required for each option are discussed further in the sections below.

Table 6-1. Summary of Infrastructure by Service Option, Mid-Term Horizon

	A-Capitol Corridor Extension	B-Extend Pacific Surfliner	C-Coast Daylight
Santa Barbara-SLO	Additional service can be achieved with completion of ongoing LOSSAN North Improvement Program		
SLO-Salinas	<ul style="list-style-type: none"> Complete centralized traffic control (CTC) and positive train control (PTC) installation Power up Santa Margarita Siding and install universal crossover near center of siding Notching of 9 tunnels Upgrade siding at Templeton 	<ul style="list-style-type: none"> Complete CTC and PTC installation Power up Santa Margarita Siding and install universal crossover near center of siding Notching of 9 tunnels Upgrade siding at King City Layover/light maintenance facility in Salinas* 	<ul style="list-style-type: none"> Complete CTC and PTC installation Power up Santa Margarita Siding and install universal crossover near center of siding Notching of 9 tunnels Upgrade siding at King City
North of Salinas	Subject to further study	N/A	Subject to further study

* Assumes service terminates in Salinas. Extending further north may allow equipment to lay over at an existing facility.

Amtrak’s Coast Starlight is the only scheduled passenger service currently operating on this segment of the corridor. In order to accommodate additional passenger service, the UPRR requests some infrastructure improvements, in addition to other contractual conditions and operating/access fees that may be negotiated between UPRR and the operating agency. Improvements requested by UPRR include:

- Complete installation of CTC and PTC systems
- Powering up and signaling the Santa Margarita siding, mileposts (MP) 229.5-233.2, and installation of a universal crossover near the center of the siding to facilitate freight and passenger operations.

UPRR has also asked the team to provide a high-level cost estimate of clearing the segment for operation of double-stack freight trains. There are 9 tunnels that would require some excavation of the tunnel

ceiling, or “notching”, and one bridge that would require some modification to its structure. Although these improvements are not required to operate passenger trains, UPRR may make this task part of the value proposition it seeks to allow for additional passenger service.

Rail simulation modeling was used to determine which existing sidings should be powered to facilitate passenger train meets for each option.

6.1.1.1 Coast Daylight or Pacific Surfliner Extension (Options B and C)

For the purpose of this analysis, the same schedule of slots used for the Surfliner extension to Salinas were used for the Coast Daylight schedule.

Recommended Infrastructure improvements for both the Coast Daylight and Pacific Surfliner Extension

In order to facilitate appropriate train meets between the southbound and northbound Coast Starlight and the Surfliner extension/Coast Daylight between SLO and Salinas, the existing UPRR siding at King City (MP 160.3) should be upgraded (signals, power switches, track) to support the meets.

Recommended Infrastructure improvements exclusively for the Pacific Surfliner Extension

Given the long duration of the trip between Los Angeles Union Station (LAUS) and Salinas (8-plus hours), it was not possible to find schedules that would allow for a daytime turn of equipment at Salinas while offering reasonable departure and arrival times at either end of the route. Extending service further north would further impede the ability to schedule daytime equipment turns. Therefore, this service option would require a light layover/light maintenance facility for the overnight layover of the trainset.

This analysis includes a high-level cost estimate for a Salinas layover/light maintenance facility. However, TAMC has plans to build a layover facility in Salinas to facilitate their plans to extend either Caltrain or Capitol Corridor service to Salinas, and the construction of additional layover capacity may not be feasible. Extending the service to an alternative terminus further north, such as San Jose or Gilroy, may provide better locations for trains to lay over.

Infrastructure Summary

The recommended improvements support this proposed mid-term schedule alternative. The primary focus of these improvements is to facilitate train meets between the northbound and southbound Coast Starlight and the extended regional passenger train service between San Luis Obispo and Salinas. One of UPRR’s requirements is that the new trains have no negative impact on Coast Starlight performance. If the Coast Starlight schedule changes, the infrastructure solutions that work for the Starlight and regional trains in this analysis may not work in the future. A siding recommended for upgrade may not materially support extended passenger service, while another siding may provide that support. If the proposed service schedules or Coast Starlight schedules change, the meet location changes, and another siding could be substituted for one recommended in this study.

6.1.1.2 Capitol Corridor Extension (Option A)

An extension of a service from the north to SLO was modeled. In order to facilitate an appropriate meet between the southbound Coast Starlight and the extension of service between Salinas and SLO, the existing UPRR siding at Templeton (MP 218.4) should be upgraded (signals, power switches, track) to support the meet.

The recommended improvement supports this proposed mid-term schedule alternative. One of UPRR’s primary requirements is that the new trains have no negative impact on Coast Starlight performance. If the proposed service schedules or Coast Starlight schedules change, the meet location changes, and another siding could be substituted for one recommended in this study.

6.1.2 Impacts on UPRR Freight Service

UPRR freight trains were included in the model. For the most part, there are few conflicts between existing UPRR freight operations and the addition of one passenger train between Salinas and SLO. Some local trains may face minor delays, depending on the customers served that day, but overall freight operational flexibility will benefit from the installation of CTC and powering of sidings on the route segment.

6.1.3 Capital Costs

6.1.3.1 Infrastructure Costs

Table 6-2 shows the costs associated with constructing infrastructure to enable each service option. Note that this does not account for potential infrastructure required north of Salinas to implement Options A and C.

Table 6-2. Infrastructure Costs by Service Option, Mid-Term (2021 Dollars)

Project	Cost	A-Extend Capitol Corridor	B-Extend Surfliner	C-Coast Daylight
CTC/PTC Installation	\$48,960,000	✓	✓	✓
Tunnel Notching and Bridge Replacement	\$20,256,000	✓	✓	✓
Power up Santa Margarita Siding	\$19,468,800	✓	✓	✓
Upgrade Siding at Templeton	\$15,532,800	✓		
Upgrade Siding at King City	\$10,142,400		✓	✓
Salinas Layover Facility	\$5,046,480		✓*	**
Totals		\$104,218,000	\$103,874,000	\$98,827,000

*Assumes the service terminates in Salinas. Continuing north may provide preferable layover locations options.

**Assumes a layover location is available in San Francisco or San Jose

6.1.3.2 Equipment Needs

Table 6-3 summarizes the estimate cost of equipment required to operate each service option. High-level estimates for extensions of the Capitol Corridor or Pacific Surfliner were derived based on average daily train miles. A Coast Daylight-type service is assumed to require one trainset travelling in each direction each day, resulting in a higher number of vehicles required. Further analysis and consultation with Caltrans and the corridor JPAs is recommended to determine how new service can be incorporated into existing equipment pools, as further discussed below.

Note that these estimates reflect train miles on the Central Coast and do not include the equipment requirements for increasing service frequencies between San Diego, Los Angeles and Santa Barbara or north of Salinas.

Table 6-3. Rail Equipment Cost Estimates by Service Option, Mid-Term Horizon (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Trainsets in daily service	1	1	2
6-car	0	1	2
4-car	1	0	0
Spare ratio	20%	20%	20%
Vehicles Required			
Diesel-Electric Locomotive	2	2	3
Bi-Level Coach Car	3	3	5
Bi-Level Coach Café Car	2	2	3
Bi-Level Business Class Car	2	3	5
Bi-Level Coach Baggage Cab Car	2	2	3
Total Cost	\$56,170,000	\$60,783,000	\$95,530,000

Capitol Corridor Extension

Extending one round trip from Salinas to SLO would add 272 daily train miles to any fleet supporting the service. Given the fact that an existing Pacific Surfliner set averages 567 train miles per day, operating roughly half that number of train miles would likely require an additional trainset to be added to that equipment pool.

Extend one Pacific Surfliner to San Luis Obispo

There are 9 full trainsets currently in the LOSSAN Pacific Surfliner equipment pool, with 567 average daily train miles (including the third Goleta-SLO round trip). For this option, one trainset laying overnight at SLO would instead lay over at Salinas. It is possible that the existing 9 trainsets could support extending one train to Salinas; however, given the fact that the fleet supports all services between San Diego and SLO, adding 272 daily train miles to the fleet's operation may require an additional trainset in daily service. Further analysis and consultation with LOSSAN is recommended.

Coast Daylight Service

Generally, an independent operation of an intercity train of this route length would require two trainsets, one operating in each direction every day, plus some spare equipment. At a minimum, the spare pool should include at least one type of each piece of equipment (locomotive, coach, food service car) in order to replace damaged equipment and cycle all equipment for scheduled maintenance.

However, it is possible that a Coast Daylight-type service could be integrated into the existing operation of the Pacific Surfliner or Capitol Corridor. Expansion of either fleet to include the Coast Daylight service would likely be more cost effective than operating an independent fleet. Joining an existing equipment pool would provide for a larger pool of spare equipment, reducing spare requirements, and reduced maintenance costs with equipment and parts interchangeability.

6.1.1 Operating and Maintenance Costs

Table 6-4 shows the estimated incremental cost of operating each service option along the Central Coast. Extending service from the north shows lower cost due to lower costs per train mile for the Capitol Corridor. However, these cost estimates reflect only the costs associated with the Salinas-Santa Barbara corridor, and do not reflect O&M costs for extending service from San Jose to Salinas.

Table 6-4. Rail Operating and Maintenance Cost by Service Option, Mid-Term (2021 Dollars)*

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Round Trips by Service	4	3	3
Pacific Surfliner (Santa Barbara to SLO)	3	2	2
Pacific Surfliner to (Santa Barbara-Salinas)	0	1	0
Coast Daylight (Santa Barbara to Salinas)	0	0	1
Capitol Corridor (Salinas-SLO)	1	0	0
Daily Train Miles by Service	932	932	932
Pacific Surfliner	660	932	440
Coast Daylight	0	0	492
Capitol Corridor	272	0	0
Annual Operating Cost	\$25,675,000	\$28,466,000	\$28,466,000

*O&M costs reflect the study area (Salinas – Santa Barbara) only.

6.2 Bus Service

The mid-term will move towards an integrated operation of intercity bus service in the Central Coast corridor to meet the service level recommendations outlined in the California State Rail Plan.

The cost estimates below assume that the coastal integrated bus service is operated as a single, standalone bus operation. Cost savings may be possible by integrating part of all of the service with other regional or intercity bus operations.

6.2.1 Capital Costs

Table 6-5 shows the capital costs for vehicles and facilities required to operate a dedicated Coast Corridor intercity bus service. For the purpose of estimating vehicle replacement cost, the mid-term horizon is assumed to span from 2035 to 2050. A higher number of replacement buses are needed for the BEB option than FCEB to make up for the lower number of replacement bus in the near-term horizon.

Table 6-5. Intercity Bus Capital Costs, Mid-Term (2021 Dollars)

Service	# of Units	Unit Price	Total Cost
Battery Electric Bus			
New Vehicle Purchase	3	900,000	\$2,700,000
Replacement Vehicle Purchase	36	900,000	\$32,400,000
Charging Equipment	4	200,000	\$800,000
Total			\$35,900,000
Fuel Cell Electric Bus			
New Vehicle Purchase	2	1,200,000	\$2,400,000
Replacement Vehicle Purchase	30	1,200,000	\$36,000,000
Total			\$38,400,000

6.2.2 Operating and Maintenance Costs

Table 6-6 shows the annual revenue hours and associated operating costs for the integrated intercity bus service along the Coast Corridor and Central Valley to Central Coast corridors.

Table 6-6. Mid-Term Intercity Bus Operating Costs (2021 Dollars)

Service	Annual Revenue Hours	Annual Operating Cost
Coast Corridor	28,258	\$3,933,000
Central Valley	19,362	\$2,710,000
Total	47,621	\$6,643,000

6.3 Summary of Findings

As shown in Table 6-7, Option A could be implemented with lower capital and operating cost than Options B and C. While a Coast Daylight-type service would provide one seat rides to the largest number of origin-destination pairs along the corridor, it would require the largest capital investment to acquire additional spare equipment to support an independent service.

Table 6-7. Summary of Rough Order-of-Magnitude Mid-term Costs (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Annual Operating Cost			
Rail	\$25,675,000	\$28,466,000	\$28,466,000
Bus	\$6,643,000	\$6,643,000	\$6,643,000
Total	\$32,318,000	\$35,109,000	\$35,109,000
Capital Cost			
Rail	\$160,388,000	\$164,656,000	\$194,357,000
Bus-BEB	\$35,900,000	\$35,900,000	\$35,900,000
Bus-FCEB	\$38,400,000	\$38,400,000	\$38,400,000
Total	\$198,788,000- \$196,288,000	\$203,056,000- \$200,556,000	\$232,757,000- \$230,257,000

Note: Costs shown reflect only those associated with the Salinas to Santa Barbara and Central Valley to San Luis Obispo corridors. Additional operating expenses and capital costs would be required for service that extends outside the study area.

7 Long-Term Horizon Overview

For the long-term horizon, the CSRP calls for integrated intercity rail and bus operating hourly on each of the study segments. Intercity rail will operate at least every four hours between Salinas and San Luis Obispo and every two hours between San Luis Obispo and Goleta/Santa Barbara. Administration and operation of a fully integrated rail/bus service is envisioned for this time horizon.

7.1 Rail Service

7.1.1 Infrastructure Needs

7.1.1.1 *Santa Barbara to San Luis Obispo*

As mentioned earlier in the report, LOSSAN, CalSTA and UPRR reached agreement in 2020 on infrastructure improvements between Santa Barbara and SLO to support a third round trip to/from SLO and protect passenger on-time performance. The proposed long-term clockface schedules utilize these improvements. However, the increase in daily service from 6 to 16 daily passenger trains will incur far more train meets, increasing the possibility of trains being delayed with the potential to cascade delays further down the passenger schedule. Higher frequency increases the likelihood that train meets which are scheduled at a siding that has been improved may need to be shifted to one that was not included in the 2020 infrastructure improvement plan.

Powering the four remaining unpowered sidings on this route may be beneficial in improving operational flexibility, reliability and capacity for both passenger and freight traffic, but the bihourly target of the CSRP can be implemented with the planned infrastructure.

7.1.1.2 *San Luis Obispo to Salinas*

In addition to the siding improvements recommended for the mid-term services, it is recommended that the sidings at Soledad (MP 139.58) and McKay (MP 200.2) be upgraded to powered, controlled sidings. There are currently two short sidings at McKay on either side of the main track. The improvement would include combination of the sidings to one siding and realignment of the main track.

7.1.2 Impacts on UPRR Freight Service

The operation of eight daily passenger train round trips between Goleta and SLO, and four between SLO and Salinas, will reduce the availability of windows for freight trains to operate during daylight hours. Some freight operations could be potentially shifted to times of the day when passenger trains are not operating, while others serving online customers may not be able to do so. Depending on UPRR freight volumes and customer requirements in 2040, additional infrastructure improvements, such as powering additional existing sidings, may be needed to support both long-term passenger schedules and UPRR freight services.

7.1.3 Capital Costs

7.1.3.1 *Infrastructure Costs*

Table 7-1 shows the costs associated with constructing infrastructure to enable the increase in service from the mid-term to long term horizons. Note that this does not account for potential infrastructure required north of Salinas to implement Options A or C.

Table 7-1. Infrastructure Costs by Service Option, Long-Term (2021 Dollars)

Project	Cost
Combine McKay Sidings	\$12,258,000
Upgrade Soledad Siding	\$10,171,000
Total	\$22,430,000

7.1.3.2 Equipment Needs

Table 7-2 summarizes the estimated cost of equipment required to in the long-term horizon beyond those acquired for the implementation of mid-term service. These high-level estimates were derived based on average daily train miles, and further analysis and consultation with Caltrans and the corridor JPAs is recommended to determine how new service can be incorporated into existing equipment pools, as further discussed below.

Note that these estimates reflect train miles on the Central Coast and do not include the equipment requirements for increasing service frequencies between San Diego, Los Angeles and Santa Barbara or north of Salinas.

Table 7-2. Additional Rail Equipment Cost Estimates by Service Option, Long-Term Horizon (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Additional Daily Train Miles	1424	1424	1424
Santa Barbara-SLO	880	440	440
SLO-Salinas	544	0	0
Santa Barbara-Salinas	0	984	984
Additional trainsets in daily service	3	3	3
6-car	2	3	3
4-car	1	0	0
Additional Vehicles Required, including spares*			
Diesel-Electric Locomotive	3	3	3
Bi-Level Coach Car	7	7	7
Bi-Level Coach Café Car	3	3	3
Bi-Level Business Class Car	6	7	7
Bi-Level Coach Baggage Cab Car	3	3	3
Total Cost	\$108,343,000	\$112,955,000	\$112,955,000

*Total equipment needs were calculated by including a 20% spare requirement above the sum of additional trains in daily service for mid-term and long-term horizons. Additional vehicles required reflect the total minus the number of vehicles previously acquired for mid-term service.

7.1.4 Operating and Maintenance Costs

Table 7-3 shows the estimated incremental cost of operating each service option along the Central Coast. Extending service from the north is less costly due to lower costs per train mile for the Capitol Corridor. However, these cost estimates reflect only the costs associated with the Salinas-Santa Barbara corridor, and do not reflect O&M costs for extending service from San Jose to Salinas.

Table 7-3. Rail Operating and Maintenance Cost by Service Option, Long-Term (2021 Dollars)*

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Round Trips by Service	10	7	7
Pacific Surfliner (Santa Barbara to SLO)	7	4	4
Pacific Surfliner to (Santa Barbara-Salinas)	0	3	0
Coast Daylight (Santa Barbara to Salinas)	0	0	3
Capitol Corridor (Salinas-SLO)	3	0	0
Daily Train Miles by Service	2356	2356	2356
Pacific Surfliner	1540	2356	880
Coast Daylight	0	0	1476
Capitol Corridor	816	0	0
Annual Operating Cost	\$63,587,000	\$71,960,000	\$71,960,000

*O&M costs reflect the study area (Salinas – Santa Barbara) only.

7.2 Bus Service

In the long-term horizon, bus frequency is increased to provide overall hourly integrated bus and rail service along the Central Coast and from the Central Coast to the Central Valley.

The cost estimates below assume that the coastal integrated bus service is operated as a single, standalone bus operation. Cost savings may be possible by integrating part of all of the service with other regional or intercity bus operations.

7.2.1 Capital Costs

Table 7-4 shows the capital costs for vehicles and facilities required to operate a dedicated Coast Corridor intercity bus service. Since the long-term horizon does not have a clear end date, replacement vehicle costs were not estimated.

Table 7-4. Intercity Bus Capital Costs, Long-Term (2021 Dollars)

Service	# of Units	Unit Price	Total Cost
Battery Electric Bus			
New Vehicle Purchase	6	900,000	\$5,400,000
Replacement Vehicle Purchase	TBD	TBD	TBD
Charging Equipment	6	200,000	\$1,200,000
Total			\$6,600,000
Fuel Cell Electric Bus			
New Vehicle Purchase	4	1,200,000	\$4,800,000
Replacement Vehicle Purchase	TBD	TBD	TBD
Total			\$4,800,000

7.2.1 Operating and Maintenance Costs

Table 7-5 shows the annual revenue hours and associated operating costs for the integrated intercity bus service along the Coast Corridor and Central Valley to Central Coast corridors.

Table 7-5. Long-Term Intercity Bus Operating Costs (2021 Dollars)

Service	Annual Revenue Hours	Annual Operating Cost
Coast Corridor	43,891	\$6,109,000
Central Valley	31,458	\$4,402,000
Total	75,349	\$10,511,000

7.3 Summary of Findings

As shown in Table 7-6, extension of the Capitol Corridor (Option A) would have lower operating and capital costs than Options B or C, which are expected to have similar costs. This is driven by the assumption that the Capitol Corridor service would be provided with shorter trainsets.

Table 7-6. Summary of Rough Order-of-Magnitude Costs, Long-Term (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Annual Operating Cost			
Rail	\$63,587,000	\$71,960,000	\$71,960,000
Bus	\$10,511,000	\$10,511,000	\$10,511,000
Total	\$74,098,000	\$82,471,000	\$82,471,000
Capital Cost			
Rail	\$130,772,000	\$135,385,000	\$135,385,000
Bus-BEB	\$6,600,000	\$6,600,000	\$6,600,000
Bus-FCEB	\$4,800,000	\$4,800,000	\$4,800,000
Total	\$135,572,000- \$137,372,000	\$140,185,000- \$141,985,000	\$140,185,000- \$141,985,000

Note: Costs shown reflect only those associated with the Salinas to Santa Barbara and Central Valley to San Luis Obispo corridors. Additional operating expenses and capital costs would be required for service that extends outside the study area.

8 Compatibility with Other Rail Initiatives in the State

While detailed modeling was only performed for the Santa Barbara-Salinas corridor, a review of other rail projects along the broader Los Angeles to San Francisco Corridor was conducted to assess potential conflict between the service options and other planned rail projects. The results are summarized in Table 8-1, and described in further detail below. Since the rail service south of San Luis Obispo is assumed to operate in the same slots regardless of service option, differences between the options are driven by the operations to the north.

Table 8-1. Compatibility of Service Options with Other Rail Initiatives in California

Related Project	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
LOSSAN North Improvements	No Conflict	No Conflict	Minimal Conflict
Caltrain electrification	No Conflict	No Conflict	Potential Conflict
Caltrain level boarding improvements	No Conflict	No Conflict	Significant Conflict
California High-Speed Rail, San Francisco to San Jose	No Conflict	No Conflict	Significant Conflict
California High-Speed Rail, San Jose to Gilroy	No Conflict	No Conflict	No Conflict
Extension of Caltrain to Salinas	Potential Conflict	Potential Conflict*	Potential Conflict
Monterey Bay Area Regional Rail	No Conflict	Potential Connectivity Gap*	No Conflict
Ventura to Santa Barbara Commuter Rail	Any potential conflicts would apply to the service options equally		
California High-Speed Rail, Burbank to Los Angeles	Any potential conflicts would apply to the service options equally		
Metrolink Southern California Optimized Rail Expansion	Any potential conflicts would apply to the service options equally		

*Conflicts with the Surfliner Extension assume a terminus in Salinas and may be mitigable by continuing further north.

8.1 Option A: Capitol Corridor Extension

Extending the Capitol Corridor service has the potential to conflict with extension of Caltrain commuter rail service to Salinas, if capacity agreed to by UPRR is not sufficient to operate desired levels of both intercity and commuter service. However, this could likely be alleviated with additional capital improvements to expand capacity. This service option avoids conflicts with Caltrain or High-Speed Rail on the Peninsula Corridor and is assumed to utilize UPRR non-electrified track south of San Jose.

8.2 Option B: Pacific Surfliner Extension

If terminating in Salinas, the Pacific Surfliner extension would avoid conflict with operations on busy San Francisco Bay Area rail corridors but would not provide connections to proposed regional rail stations in Castroville and Pajaro or connect to the planned High-Speed Rail station in Gilroy. Furthermore, Pacific Surfliner trains laying over in Salinas would pose a conflict with the extension of Caltrain service to Salinas, which would also require layover capacity. Therefore, Salinas is not recommended as a terminus for the study, and further study is recommended to identify an alternative terminus that would provide optimal connectivity to the state rail network.

8.3 Option C: Coast Daylight

Introducing Coast Daylight service poses significant potential operational conflicts with planned projects on the Peninsula Corridor. Current state-supported intercity rail trains have lower floor heights than those

planned for use by Caltrain and High-Speed Rail and would not be able to utilize the same platforms. Furthermore, the current diesel locomotives used cannot match the higher speeds of electric trains and may not be able to fit the clockface “slot catalog” developed based on higher operating speeds on the Peninsula.⁷

These conflicts could be avoided or reduced by shortening the route of a Coast Daylight-type service. Terminating in San Jose or Gilroy, with connections to faster Caltrain and High-Speed Rail services, would allow passengers to reach San Francisco without requiring incompatible rail services on the Peninsula Corridor. The loss of potential one-seat rides to San Francisco may be offset to a degree if frequent, higher-speed connections are available.

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⁷ The State’s vision for an integrated statewide network relies on regular and repeating schedules on each corridor, such that train meets occur in the same locations and reliable connections can be made at transfer hubs. Service frequency is increased by filling in train runs (or “slots”) from the hypothetical schedule with maximum frequency (“slot catalog”). These train runs can potentially be filled by any service that travels at a similar speed, but slower trains cannot meet others in the appropriate location.

9 Institutional Considerations and Local Agency Coordination

9.1 Rail Service Options

9.1.1 Options A and B: Extending Capitol Corridor or Pacific Surfliner

Extension of the Capitol Corridor or Pacific Surfliner would be best managed by the existing JPA for the service, CCJPA or LOSSAN, respectively. These agencies have established staffing arrangements, institutional knowledge, and relationships with host railroads. However, neither JPA has statutory authority to provide service between SLO and San Jose, and their member agencies do not represent all communities that would be served by the service extensions.

Therefore, for either option, the following institutional changes would be required:

- Legislation to amend statutory service area
- Renegotiation of interagency transfer agreement with Caltrans
- Potential amendment of Joint Use of Powers Agreement

9.1.2 Option C: Coast Daylight-Type Service

Unlike the other service options, a Coast Daylight-type service does not have a clear optimal governance structure. Without substantial changes to state legislation and inter-agency agreements, Caltrans is currently the only agency with the authority to implement a service of this nature, but the State has shown a commitment to the JPA-based local control model through the devolution of each state supported service and the passage of SB 742. While LOSSAN has authority to manage service on the southern half of the corridor, no state supported rail JPA has authority over the segment north of SLO.

To operate a Coast Daylight-type service using the current JPA model, there are several options, as described below.

9.1.2.1 Management by LOSSAN

Similar to an extension of the Pacific Surfliner to Salinas, a Coast Daylight-type service could be managed by LOSSAN, which represents 4 of the 10 counties along the corridor and manages the only state-supported intercity rail service that significantly overlaps the route of a potential Coast Daylight. However, this option would require the legislative changes described above and would represent a much more significant change in service area, expanding to not one but six additional counties.

9.1.2.2 Partnership between LOSSAN and CCJPA

Together, LOSSAN and CCJPA represent 6 of the 10 counties a Coast Daylight-type service would traverse, and they manage the two state-supported services that would connect to the new service. This option would also be consistent with a hybrid approach to increasing service along the Central Coast, where frequency is added by providing both Coast Daylight-type service and extensions of existing Capitol Corridor or Pacific Surfliner service. This governance model, however, would require the aforementioned changes to enable one or both JPAs to expand their service areas.

9.1.2.3 Create a New JPA

As a new, distinct intercity rail service, a new JPA dedicated to management of a Coast Daylight-type operation would allow the greatest degree of local control. However, this would require significant institutional change:

- Member agencies would need to organize a coalition and formalize a joint use of powers agreement
- The legislature would need to entrust the new agency with management authority
- Caltrans would need to negotiate an interagency transfer agreement with the new JPA

- The agency would need to be staffed, either directly or through a managing agency
- Relationships between the new JPA and host railroads would need to be developed

The Coast Rail Coordinating Council (CRCC), composed of the San Luis Obispo Council of Governments (SLOCOG), Santa Barbara County Association of Governments (SBCAG), Santa Cruz County Regional Transportation Commission (SCCRTC), Transportation Agency for Monterey County (TAMC), and Ventura County Transportation Commission (VCTC), could form the basis of a new rail JPA to manage a Coast Daylight-type service. However, the CRCC only represents 5 of the 10 counties of the corridor, excluding Los Angeles and the counties of the Peninsula Corridor, where the largest operational impediments to implementing the service are located.

9.2 Intercity Bus

No new legislation is required to establish authority to operate intercity bus connecting to rail services, nor the creation of a new agency. All three of the state's rail JPAs are permitted to contract for bus service connecting the Central Coast to their rail service and both private operators and regional transit agencies can separately seek funding through the 5311(f) Program.

As new rail services are introduced and service areas of state-supported intercity rail services increasingly overlap, strong partnerships between rail JPAs and with regional operators will be necessary to ensure that the state's intercity bus services operate as an integrated network, rather than a collection of feeder services to each rail service.

In addition to service planning, coordination will be required to ensure a cohesive marketing and customer information strategy. As connections between bus and rail increase, it will be important to provide clear and concise information to the public so that riders can take advantage of integrated service.

In the long-term horizon, a transfer of operating responsibility for the Central Valley to Central Coast service may be warranted. The service is currently managed by SJJPA and connects to the San Joaquins in Hanford. However, after the opening of the initial operating segment of California High-Speed Rail, the San Joaquins will terminate in Merced. The Thruway connection to the San Joaquins in Hanford would be replaced by a connection to High-Speed Rail at the planned Kings/Tulare station. Thus, it may be optimal for the JPA(s) managing rail on the Central Coast to take over responsibility for the route. Regardless of which JPA manages the route, coordination with CHSRA will be crucial to providing seamless rail-bus connections on both ends.

9.3 Local Connectivity

In addition to integration of the intercity rail and bus networks, coordination with local bus operations is important to expand the reach of intercity services with limited stops. Making local connections to and from the intercity bus and rail service will extend travelers' opportunities and, in some cases, encourage them to make the trip and leave their personal auto behind. Local connections will vary by station and area, likely influenced by three factors:

- **Local markets** – what types of travelers are likely to arrive, or depart, from a given station. These could include students, employees, tourists making leisure trips; markets unique to each station's surrounding area. Local operators will be most aware of these markets and potential markets and the locations to or from which they need connections.
- **Local resources** – the opportunity for local connections will be greatly influenced by the public transit services that currently exist at each station. Some stations, or potential stations, are not currently served by local transit. Some do have service that may or may not align with existing Coast Starlight or Surfliner trains. Local operators will need to program these connections into their Short-Range Transit Plans and longer-term planning processes.

- **Coordinated alignments** - as intercity rail and bus service frequencies build, and as local markets mature in their understanding of this new longer-distance travel resource, local public transit operators can work to coordinate local schedules and increase service to reflect the intercity bus/rail schedule. Localized priorities in scheduling should be market-driven, to reflect the destinations and routing important to a given station's likely markets: e.g. tourism destinations with coastal access or university dormitories of Cal Poly San Luis Obispo, Fort Hunter-Liggett military base and civilian employment locations or major Salinas-based employers.

Other first-mile, last-mile modes to support local travel of passengers will also be appropriate at different stations along the route. These could potentially include:

- Subsidized fares to Transportation Network Companies, such as Uber or Lyft, to provide connections within a certain circumference of a station
- Bike rentals for those open to active transportation, particularly in high tourism areas
- Carsharing and short-term rentals, such as Zipcar, Car2Go, Turo and more, where there is a sufficient local market to support the necessary infrastructure and integrated technology is available to invite intercity train and bus travelers to place a car reservation

10 Conclusions

With appropriate investment in infrastructure along the Central Coast, there are several feasible ways to achieve the service targets laid out for the corridor in the CSRP. The selection of a specific service option will depend on further deliberation by policymakers in consideration of broader statewide rail planning efforts. The key findings regarding advantages and disadvantages of each service option are discussed below, and Table 10-1 shows a high-level assessment of the performance of each service option relative to capital and operating costs, availability of one-seat rides, and compatibility with broader statewide rail plans and projects. Differences in cost are primarily driven by the differences in equipment: it is assumed that a Capitol Corridor extension would continue to utilize smaller trainsets than the Pacific Surfliner and that a new, long distance Coast Daylight-type service would require more spare equipment than extending one of the existing services.

Table 10-1. Assessment of Service Options

Performance Area	A-Extend Capitol Corridor	B-Extend Surfliner	C-Coast Daylight
Capital Cost	Less Costly	More Costly	Most Costly
Operating Cost	Less Costly	More Costly	More Costly
Offers one-seat rides to key destinations	Medium	Medium	High
Compatibility with related projects	High	Medium	Low

10.1 Option A: Extend Capitol Corridor

Advantages of increasing service via an extension of the Capitol Corridor to SLO include:

- This option provides one-seat rides between the northern portion of the study corridor and the southern and eastern portions of the San Francisco Bay Area, which have strong mega-regional connections to the Monterey Bay Area.
- Extending an existing service builds on an established governance structure and a successful brand with an existing customer base.
- As shown in Table 10-2 below, the use of shorter trainsets on the northern segment of the corridor enables cost savings for both capital and O&M expenses. However, this advantage assumes that Capitol Corridor trainsets continue to be smaller than those used by the Pacific Surfliner, which may not be the case in the future.
- Travelling along the East Bay to Oakland rather than to San Francisco would avoid conflicts with planned Caltrain and California High-Speed Rail service plans.

Disadvantages include:

- The service would not provide one-seat rides through the Central Coast. Timed connections could be made in SLO to reduce the transfer penalty that degrades the customer experience, but the need to coordinate schedules with the Coast Starlight, Pacific Surfliner, and Bay Area rail services may inhibit the reliability of those timed connections.
- Capacity constraints between San Jose and Salinas may require greater capital investment to accommodate extension of both Capitol Corridor intercity rail and Caltrain commuter rail service to Salinas. However, there may be opportunities to plan both services in a way that is complimentary, rather than competitive.

10.2 Option B: Extend Pacific Surfliner

Advantages of increasing service via an extension of the Surfliner include:

- This option provides one-seat rides within the study corridor and from the study corridor to Los Angeles.
- Extending an existing service builds on an established governance structure and a successful brand with an existing customer base.
- Terminating in Salinas, San Jose or Gilroy, rather than continuing onto Peninsula Corridor as in Option C, would avoid operational conflicts with Bay Area rail operations.

Disadvantages include:

- This service option would not provide one-seat rides to San Francisco. The number of trips that would require connections to other rail or bus services, and the availability of connecting service would depend on the northern terminus selected.
 - If the service were to terminate in Salinas, riders travelling further north may need to transfer to connecting buses to reach their destinations. Extension of Caltrain to Salinas could potentially provide rail connections to the north if schedules can be aligned, but near-term plans are focused on peak-hour commutes to the Bay Area that would not connect to afternoon Surfliner arrivals.
 - Terminating in Salinas would also leave a connectivity gap between the intercity service extension and proposed regional rail service between Monterey and Santa Cruz, which would overlap the UPRR mainline from Watsonville to Castroville. The service would also not connect to the planned High-Speed Rail station in Gilroy.
 - For the above reasons, combined with the potential challenges of developing appropriate terminal facilities in Salinas, Salinas is not an optimal terminus for the service, and consideration of alternative termini, such as San Jose or Gilroy is recommended. However, these may present different operational conflicts.
- Pacific Surfliner trainsets are sized for peak passenger loads that occur in the dense urban centers of Southern California. As shown in Table 10-2 below, operating long trainsets along the entire Coast Corridor increases capital and operating costs compared to shorter trainsets that are likely sufficient to meet demand between SLO and Salinas.

10.3 Option C: Coast Daylight

Advantages of achieving increased service with a Coast Daylight-type service:

- The service would provide one seat rides along the entire Central Coast and from Los Angeles to San Francisco.

Disadvantages include:

- Potential for significant operational conflicts with Caltrain and California High-Speed Rail plans on the Peninsula Corridor, including electrification, level boarding, and schedule slots based on high-speed run times. Conflicts could be reduced by terminating in San Jose, with transfer to Caltrain for travel to San Francisco.
- There is no clear optimal governance structure for a Coast Daylight-type service. Creating a new JPA or drastically expanding the service area of an existing JPA would represent significant institutional change that may not be in the interest in all stakeholders. Furthermore, the length of the route makes successful coordination across the corridor crucial, as the service would overlap and potentially conflict with the largest number of other rail services.
- Trainsets for a Coast Daylight-type service would need to be sized to accommodate peak passenger loads in the dense urban segments of the corridor, but using longer trainsets for the entire length of the route would incur higher capital and operating cost compared to utilizing shorter trains on the San Jose to SLO segment (as the Capital Corridor would, for example).

- There may be cost inefficiencies relating to equipment if the service is not operated as part of the equipment pools for the existing state-supported rail services. For example, if different equipment is used for the service to provide a higher level of amenities than the Pacific Surfliner, the two services would not be able to share spare equipment or use interchangeable parts.

10.4 Integrated Bus Service

For each rail option, integrated intercity bus service is crucial to meet overall service targets and expand service coverage beyond areas with rail stations. Key findings related to intercity bus service include:

- Compliance with the ICT rule will require new bus purchases to be zero-emission vehicles, which include BEB and FCEB options. As shown in Table 10-2, BEB would generally have lower upfront capital costs; however, FCEB have greater operational flexibility due to longer range and quick refueling capability. These tradeoffs are important considerations for long-distance, intercity service, but may change as zero-emission technology continues to evolve.
- Despite bus service accounting for more trips in the schedule than rail, total bus operating and capital costs are significantly lower, providing a cost-effective way to supplement rail frequency.
- For near-term service, no new governance structures are required for implementation of increased bus service levels, but continued coordination among rail JPAs and regional operators will be crucial to managing an integrated network. SB 742's provision for rail feeder bus service to also serve passengers not taking a rail trip further increases the need for coordination with regional providers, to ensure that service is complementary, rather than duplicative of regional service.
- Enhanced bus service between the Central Coast and the Central Valley is important to linking these two regions, which are not connected by rail. This service will also contribute to the success of future High-Speed Rail by connecting the communities of the Central Coast to the new service. However, the introduction of High-Speed Rail service to a new Kings/Tulare station and corresponding cessation of San Joaquins service to Hanford will necessitate modification of the route from San Luis Obispo to the Central Valley and may require changes to management responsibility for the service.

Table 10-2. Comparison of Coast Corridor Estimated Rough Order-of-Magnitude Costs by Service Option Across Milestones (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Near-term			
Annual Bus Operating Cost	\$5,216,000	\$5,216,000	\$5,216,000
Bus Capital Cost-BEB	\$39,500,000	\$39,500,000	\$39,500,000
Bus Capital Cost-FCEB	\$50,000,000	\$50,000,000	\$50,000,000
Mid-term			
Annual Operating Cost			
Rail	\$25,675,000	\$28,466,000	\$28,466,000
Bus	\$6,643,000	\$6,643,000	\$6,643,000
Total	\$32,318,000	\$35,109,000	\$35,109,000
Capital Cost			
Rail	\$160,388,000	\$164,656,000	\$194,357,000
Bus-BEB	\$35,900,000	\$35,900,000	\$35,900,000
Bus-FCEB	\$38,400,000	\$38,400,000	\$38,400,000
Total	\$198,788,000- \$196,288,000	\$203,056,000- \$200,556,000	\$232,757,000- \$230,257,000
Long-term			
Annual Operating Cost			
Rail	\$63,587,000	\$71,960,000	\$71,960,000
Bus	\$10,511,000	\$10,511,000	\$10,511,000
Total	\$74,098,000	\$82,471,000	\$82,471,000
Capital Cost			
Rail	\$130,772,000	\$135,385,000	\$135,385,000
Bus-BEB	\$6,600,000	\$6,600,000	\$6,600,000
Bus-FCEB	\$4,800,000	\$4,800,000	\$4,800,000
Total	\$135,572,000- \$137,372,000	\$140,185,000- \$141,985,000	\$140,185,000- \$141,985,000

Note: Costs shown reflect only those associated with the Salinas to Santa Barbara and Central Valley to San Luis Obispo corridors. Additional operating expenses and capital costs would be required for service that extends outside the study area.

10.5 Next steps

With appropriate investment and institutional change, it is feasible to achieve the State's ambitious vision for integrated rail and bus service along the Central Coast. Several actions are needed to achieve the increases in rail frequency targeted in the CSRP:

1. Policymakers along the Central Coast must consider the relative costs and benefits of each service option and select one to implement
2. Track access must be secured from UPRR. This will require negotiations to refine specific capital investments that will be necessary and agreement on a track access fee
3. State operating support must be secured. Depending on the service option chosen, the following governance changes may be necessary:
 - a. Selection of a JPA to manage new service or creation of a new JPA
 - b. Negotiation of an interagency transfer agreement with Caltrans
 - c. Negotiation of (or renegotiation of) the joint use of powers agreement
 - d. Legislation to give statutory for the selected JPA to provide service along the Coast Corridor
4. Additional equipment must be acquired
5. Capital funding must be secured to deliver the necessary infrastructure improvements

To support enhanced integrated bus service, additional operating support will be required to implement overall increases in frequency. In addition, coordination among agencies will be crucial to ensuring a seamless customer experience and minimizing duplicative use of public funds. In addition to coordinating service planning to ensure the availability of meaningful connections between services, the rail JPAs, Caltrans, and regional transit providers should coordinate a cohesive marketing and customer information strategy to ensure that riders are aware of and can take advantage of the integrated statewide network.

In the long term, a transition of management responsibility for the Central Valley to Central Coast Thruway service from the San Joaquin Joint Powers Authority to LOSSAN may be warranted when the San Joaquins cease service south of Merced after the opening of the initial operating segment of High-Speed Rail.

In addition to integration of the longer distance intercity rail and bus services, coordination with local bus operations is important to expand the reach of intercity services with limited stops. Making local connections to and from the intercity bus and rail service will extend travelers' opportunities beyond the immediate vicinity of each rail or bus stop. Given that many key destinations along the Central Coast are close but not immediately adjacent to intercity rail or bus stops, continued coordination with feeder services will be important to maximize the benefits of intercity services and optimize the customer experience for using the integrated rail and bus system.

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Task 4.4:
Service Improvement Plan
Appendix A: Rail
Operations Modeling
Results

SLOCOG Coast Corridor Rail Service Study

March 26, 2021

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1 Introduction

This Appendix details methodology and results of the intercity rail operations modeling conducted for the Coast Corridor Rail Service Study, in support of the Service Implementation Plan.

Determining the most cost-effective approach to support increased passenger rail service in the region is critical to the ability to successfully implement the service and ensure its long-term success.

Overestimating the infrastructure required to support both future freight and passenger service would negatively impact the ability to attract sufficient funding to support those improvements. Conversely, underestimating the infrastructure requirements may inhibit the new service from operating at the high service level needed to both attract and retain new customers.

Conducting a rail simulation analysis helps determine the optimal infrastructure level needed to support future freight and passenger rail services long before final design and construction commences. The simulation replicates, in a virtual environment, future train operations and infrastructure, and can test and validate whether proposed improvements provide the benefit intended. The simulation can also help compare various infrastructure scenarios to help determine the most cost-effective solution.

1.1 Rail Operations Modeling Methodology

There are several software products that perform rail simulation analysis, including the Viriato Timetable Planning Tool, developed by SMA, which is used by agencies and rail operators throughout California to determine existing and future schedules and infrastructure requirements. Another tool, Rail Traffic Controller (RTC), developed by Berkeley Simulation Systems LLC, also tests and validates service plans and infrastructure improvements and is used by the Federal Railroad Administration and most Class I railroads, including Union Pacific Railroad (UPRR). RTC excels at simulating random delay events that are representative of typical of day-to-day railroad operations.

UPRR has an RTC model of the project area and has graciously allowed the use of their model to assist in development of the SIP.

The assumptions and methodology used in the simulation process are summarized below:

1. Model limits are the UPRR Santa Barbara and Coast Subdivisions between Santa Barbara and Salinas.
2. The train consist used in the model, for both existing and proposed state-supported passenger services (including the Coast Daylight) is the standard Pacific Surfliner consist operated in 2021:
 - a. One diesel-electric locomotive. For modeling purposes, an EMD F-59PH locomotive was used, because a model of the Siemens “Charger” locomotive was not available in the software suite.
 - b. Six bi-level passenger cars
3. Test and validate the base model to ensure accuracy: Since the host railroad (UPRR) had provided the model, the test and validation process was condensed to:
 - a. Making sure the model functions properly with HDR’s version of the RTC software.
 - b. Performing runs of the existing model to ensure all trains and infrastructure operate as intended.
4. Develop mid-term model:
 - a. Insert infrastructure improvements agreed upon by LOSSAN, CalSTA and UPRR between Santa Barbara and San Luis Obispo (SLO).
 - b. Adjust existing passenger schedules to create clockface Pacific Surfliner schedules between Santa Barbara and SLO, consistent with the CSR.

- c. Extend one Surfliner train between Goleta and SLO, providing three total daily round trips.
 - d. Insert infrastructure improvements requested by UPRR between SLO and Salinas.
 - i. Option A: Model a hypothetical train from the north operating between Salinas and SLO, providing a platform transfer option for passengers between this service and Pacific Surfliner trains. While the service was only modeled between Salinas and SLO, it is assumed to originate north of Salinas.
 - ii. Option B, extend one of the Pacific Surfliner trains terminating in SLO to/from Salinas. Salinas is used as a terminus for analysis purposes, and should not be construed as a service recommendation.
 - iii. Option C: the proposed Coast Daylight service between Los Angeles and San Jose/San Francisco would operate in the same schedule slot as the extended Surfliner.
 - e. Insert additional infrastructure improvements between SLO and Salinas, if required, into model.
 - f. Re-run model to gauge the effectiveness of the added infrastructure improvements.
5. Develop long-term model:
- a. Develop bi-hourly, clockface Pacific Surfliner schedules between Santa Barbara and SLO, using infrastructure developed in the mid-term model.
 - b. Insert additional infrastructure improvements between Santa Barbara and SLO, if required, into model.
 - c. Extend three of the SLO trains to/from Salinas. As mentioned above, Salinas is used as a terminus for analysis purposes, and should not be construed as a service recommendation. To generate a high-level assessment of necessary infrastructure investment, only one conceptual schedule was modeled, as it was assumed that all service options (A, B, and C) would use similar train slots. Differences in specific infrastructure requirements between the long-term options would be influenced by interaction with future schedules of the Coast Starlight, as well as Pacific Surfliner, Capitol Corridor, Metrolink, and High-Speed rail outside the Coast Corridor, which are unknown at this time.
 - d. Insert additional infrastructure improvements between SLO and Salinas, if required, into model.
 - e. Re-run model to gauge the effectiveness of the added infrastructure improvements.

For all simulations, the primary goal is to validate that the proposed infrastructure improvements not only support the new services, but also maintain on-time performance for Amtrak's Coast Starlight long-distance service and the ability of UPRR freight trains to serve industries along the corridor.

The analysis will include:

1. Hypothetical passenger train schedules for each model.
2. Time-distance (stringline) graphs for each modeling case.
3. High-level cost estimates for recommended infrastructure improvements.

2 Mid-Term Horizon

The mid-term rail service options analyzed are:

- o Three clockface intercity rail frequencies between Santa Barbara and San Luis Obispo, in addition to Amtrak's Coast Starlight.

- One additional intercity rail service between Salinas and San Luis Obispo, in addition to Amtrak's Coast Starlight. Three options are analyzed:
 - Option A: A new train service operating between San Jose and SLO, providing a platform connection for passengers between this service and Pacific Surfliner trains
 - Option B: An extension of a Pacific Surfliner schedule from SLO to Salinas and return. While Salinas is assumed as a terminus for modeling purposes, it should not be construed as a service recommendation.
 - Option C: A "Coast Daylight"-type service between Los Angeles and San Jose or San Francisco

2.1 Santa Barbara to San Luis Obispo

2.1.1 Base Infrastructure

In 2018, the California State Transportation Agency (CalSTA) awarded LOSSAN funding for the LOSSAN North Improvement Program through the Transit and Intercity Rail Capital Program (TIRCP). The program consists of improvements to increase frequency and on-time performance between Los Angeles, Santa Barbara, and SLO, including enabling a third round trip to SLO. In 2020, LOSSAN, CalSTA, and UPRR reached agreement on infrastructure improvements between Santa Barbara and SLO. These improvements include:

- Complete installation of Centralized Traffic and Positive Train Control systems (105 miles)
- Powering selected sidings for train meets. Sidings converted to powered, controlled sidings include:
 - Callender, Milepost (MP) 266.3-268.1 (Callender is also extended to 9000 feet)
 - Guadalupe, MP 272.7-273.6
 - Waldorf, MP 276.7-277.5
 - Devon, MP 282.8-283.7
 - Narlon, MP 289.4-290.7
 - Tangair, MP 293.7-294.8
 - Honda, MP 303.4-304.8
 - Concepcion, MP 320.7-322.0

These improvements were incorporated into the Base infrastructure model. There are other improvements in the agreement, including replacing rail, ties, and corridor hardening (slope stabilization, fencing, etc.), but these improvements do not impact train performance or line capacity in the model.

The existing UPRR infrastructure between SLO and Salinas was unchanged for the Base model.

2.1.2 Proposed Clockface Schedules between Santa Barbara and SLO

The RTC model was used to determine hypothetical clockface schedules using the existing infrastructure while remaining somewhat consistent with pre-Covid Surfliner schedules. There are three proposed round trips between Santa Barbara and SLO: northbound trains 759, 765 and 777, and southbound trains 774, 790 and 796. Figures 4.1 and 4.2 show the proposed clockface schedules between Santa Barbara and SLO for Option C. In Options A and B, a third Pacific Surfliner would operate instead of the Coast Daylight (shown in yellow) with the same times from SLO to Santa Barbara.

Figure 2-1. Mid-Term Northbound Schedule (Santa Barbara – San Luis Obispo)

	Coast Daylight			Coast Starlight			
Train number	759	761	765	14	773	777	785
SANTA BARBARA	08:03	10:03	12:03	12:24	16:03	18:03	20:03
GOLETA	08:15	10:15	12:15	-	16:15	18:15	20:15
LOMPOC/SURF	09:21		13:21	-		19:21	
GUADALUPE	09:57		13:57	-		19:57	
GROVER BEACH	10:16		14:16	-		20:16	
SAN LUIS OBISPO	10:45		14:45	15:19		20:45	

Figure 2-2. Mid-Term Southbound Schedule (San Luis Obispo – Santa Barbara)

				Coast Daylight		Coast Starlight	
Train number	768	774	782	790	792	11	796
SAN LUIS OBISPO		06:33		12:33		15:45	16:33
GROVER BEACH		06:53		12:53		-	16:53
GUADALUPE		07:09		13:09		-	17:09
LOMPOC/SURF		07:49		13:49		-	17:49
GOLETA	06:55	08:55	10:55	14:55	16:55	-	18:55
SANTA BARBARA	07:13	09:13	11:13	15:13	17:13	18:27	19:13

It should be noted that our model did not analyze how these schedules interact with Metrolink, Pacific Surfliner or freight schedules south of Goleta. These schedules merely display workable clockface schedules within the project area and can be shifted to better integrate with Surfliner services between Goleta and San Diego and available train slots on the Metrolink route segment between Montalvo and Los Angeles Union Station.

2.2 San Luis Obispo to Salinas

2.2.1 Base Infrastructure

Amtrak’s Coast Starlight is the only scheduled passenger service currently operating on this segment of the corridor. In order to accommodate additional passenger service, the UPRR requests some infrastructure improvements, in addition to other contractual conditions and operating/access fees that may be negotiated between UPRR and the operating agency. Improvements requested by UPRR include:

- Complete installation of Centralized Traffic and Positive Train Control systems
- Powering UPRR and signaling the Santa Margarita siding, MP229.5-233.2, and installation of a universal crossover near the center of the siding to facilitate freight and passenger operations.

UPRR has also asked the team to provide a high-level cost estimate of clearing the segment for operation of double-stack freight trains. There are 9 tunnels that would require some excavation of the tunnel

ceiling, or “notching”, and one bridge that would require some modification to its structure. Although these improvements are not required to operate passenger trains, UPRR may make this task part of the value proposition it seeks to allow for additional passenger service.

Rail simulation modeling will help determine which existing sidings should be powered to facilitate passenger train meets.

2.2.2 Option A: Extension of Train Service from the North to San Luis Obispo

For this scenario, a hypothetical train departs Salinas at 9:12 AM and arrives at SLO at 12:10 PM. Passengers wishing to transfer to a Surfliner can connect with Train 790, departing SLO at 12:33 PM. An approximate 20-minute dwell time was used to provide a small cushion for connecting passengers if the southbound train was running late. The arrival time can be adjusted, as there are no opposing passenger train meets for this train in the morning.

The train lays over for slightly over an hour in SLO to allow for light cleaning and servicing of the consist and a platform transfer with northbound Surfliner Train 761, arriving SLO at 12:45 PM. For this exercise, Train 761 was extended to SLO (as opposed to Train 759 as in Options B and C) to allow for a northbound platform transfer between the Pacific Surfliner and the northern service. Figure 2-3 and Figure 2-4 show the proposed Mid-Term, clockface schedules between Salinas and SLO with the extension of one round trip from Salinas to SLO.

Figure 2-3. Mid-Term Southbound Schedule Option A (San Luis Obispo - Salinas)

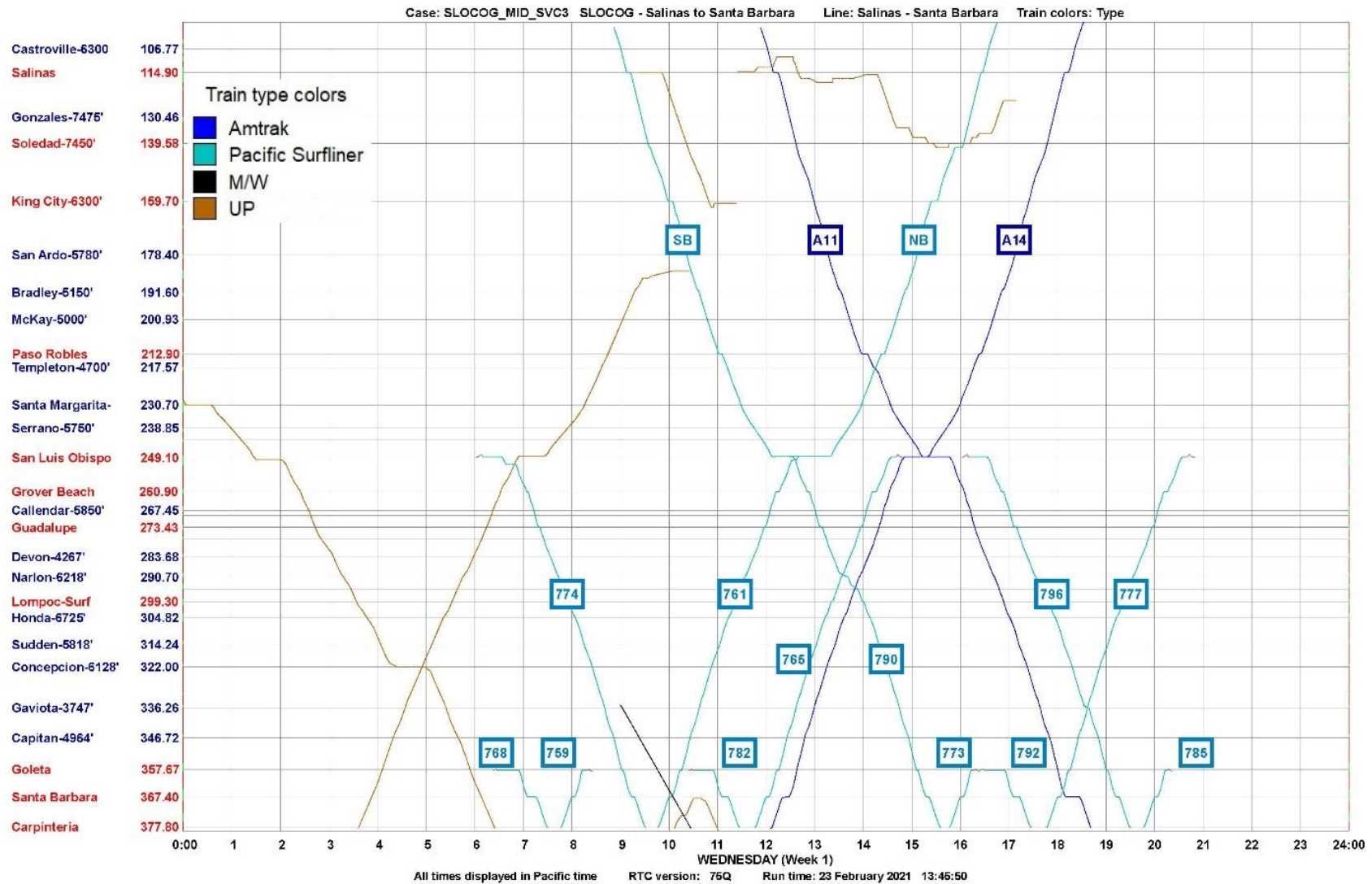
							Coast Starlight	
Train number	768	774	782	TAMC	790	792	11	796
SALINAS				09:12			12:13	
SOLEDAD				09:37			-	
KING CITY				10:04			-	
PASO ROBLES				11:05			14:03	
SAN LUIS OBISPO		06:33		12:10	12:33		15:45	16:33
GROVER BEACH		06:53			12:53		-	16:53
GUADALUPE		07:09			13:09		-	17:09
LOMPOC/SURF		07:49			13:49		-	17:49
GOLETA	06:55	08:55	10:55		14:55	16:55	-	18:55
SANTA BARBARA	07:13	09:13	11:13		15:13	17:13	18:27	19:13

Figure 2-4. Mid-Term Northbound Schedule Option A (San Luis Obispo - Salinas)

					Coast Starlight			
Train number	759	761	TAMC	765	14	773	777	785
SANTA BARBARA	08:03	10:03		12:03	12:24	16:03	18:03	20:03
GOLETA	08:15	10:15		12:15	-	16:15	18:15	20:15
LOMPOC/SURF		11:21		13:21	-		19:21	
GUADALUPE		11:57		13:57	-		19:57	
GROVER BEACH		12:16		14:16	-		20:16	
SAN LUIS OBISPO		12:45	13:20	14:45	15:19		20:45	
PASO ROBLES			14:26		16:21			
KING CITY			15:31		-			
SOLEDAD			16:02		-			
SALINAS			16:25		18:12			

Figure 2-5 shows the stringline diagram for the extension of one train from Salinas to SLO.

Figure 2-5. Stringline Diagram, Mid-Term Schedule Option A (Salinas - Santa Barbara)



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2.2.2.1 *Recommended Infrastructure improvements for the extension of service from the north to SLO*

Upgrade siding at Templeton

In order to facilitate an appropriate meet between the southbound Coast Starlight and the extension of service between Salinas and SLO, the existing UPRR siding at Templeton (MP 218.4) should be upgraded (signals, power switches, track) to support the meet.

The recommended improvement supports this proposed mid-term schedule alternative. One of UP's primary requirements is that the new trains have no negative impact on Coast Starlight performance. If the proposed service schedules or Coast Starlight schedules change, the meet location changes, and another siding could be substituted for one recommended in this study. Unpowered sidings on this segment that are not upgraded in this service alternative include:

- Gonzales, MP 131.2
- Soledad, MP 140.2
- King City, MP 160.3
- San Ardo, MP 179.5
- Bradley, MP 192.5
- McKay, MP 200.2
- Serrano, MP 238.8
- Chorro, MP 242.7

2.2.3 Options B and C: Through Service Between SLO and Salinas

The extension of one round trip to Salinas must make sense from a ridership standpoint, while mitigating any adverse operational impacts to existing Amtrak and UPRR services. Of the three northbound trains reaching SLO, 765 arrives within 34 minutes of the northbound Coast Starlight, which is not desirable from a ridership standpoint. Train 777 wouldn't arrive in Salinas until nearly midnight, also not desirable for ridership. For these reasons, it was decided to extend Train 759 to Salinas. Extending Train 761 to SLO and Salinas was also considered, but RTC modeling indicated that it would have a problem meeting the southbound Coast Starlight near Paso Robles while staying on a clockface schedule south of SLO.

For the southbound train, Train 790 was chosen for its reasonable morning departure time of 9:00 at Salinas and arrival at LAUS in the early evening.

Amtrak completed the Coast Daylight Study in 2016, two years before the California State Rail Plan was issued which stressed the importance of clockface schedules. For the purpose of this analysis, the same schedule slots used for the Surfliner extension to Salinas were used for the Coast Daylight schedule, which are the closest to the original schedule while providing clockface service. Figure 2-6 and Figure 2-7 show the proposed mid-term, clockface service schedules between Santa Barbara and SLO, with the extension of one round trip to Salinas.

Figure 2-6. Mid-Term Northbound Schedule Options B and C (Santa Barbara – San Luis Obispo - Salinas)

	Coast Daylight			Coast Starlight			
Train number	759	761	765	14	773	777	785
SANTA BARBARA	08:03	10:03	12:03	12:24	16:03	18:03	20:03
GOLETA	08:15	10:15	12:15	-	16:15	18:15	20:15
LOMPOC/SURF	09:21		13:21	-		19:21	
GUADALUPE	09:57		13:57	-		19:57	
GROVER BEACH	10:16		14:16	-		20:16	
SAN LUIS OBISPO	10:45		14:45	15:19		20:45	
PASO ROBLES	11:51			16:21			
KING CITY	12:56			-			
SOLEDAD	13:27			-			
SALINAS	13:50			18:12			

Figure 2-7. Mid-Term Southbound Schedule Options B and C (Salinas - San Luis Obispo – Santa Barbara)

				Coast Daylight		Coast Starlight	
Train number	768	774	782	790	792	11	796
SALINAS				09:10		12:13	
SOLEDAD				09:33		-	
KING CITY				10:00		-	
PASO ROBLES				11:05		14:03	
SAN LUIS OBISPO		06:33		12:33		15:45	16:33
GROVER BEACH		06:53		12:53		-	16:53
GUADALUPE		07:09		13:09		-	17:09
LOMPOC/SURF		07:49		13:49		-	17:49
GOLETA	06:55	08:55	10:55	14:55	16:55	-	18:55
SANTA BARBARA	07:13	09:13	11:13	15:13	17:13	18:27	19:13

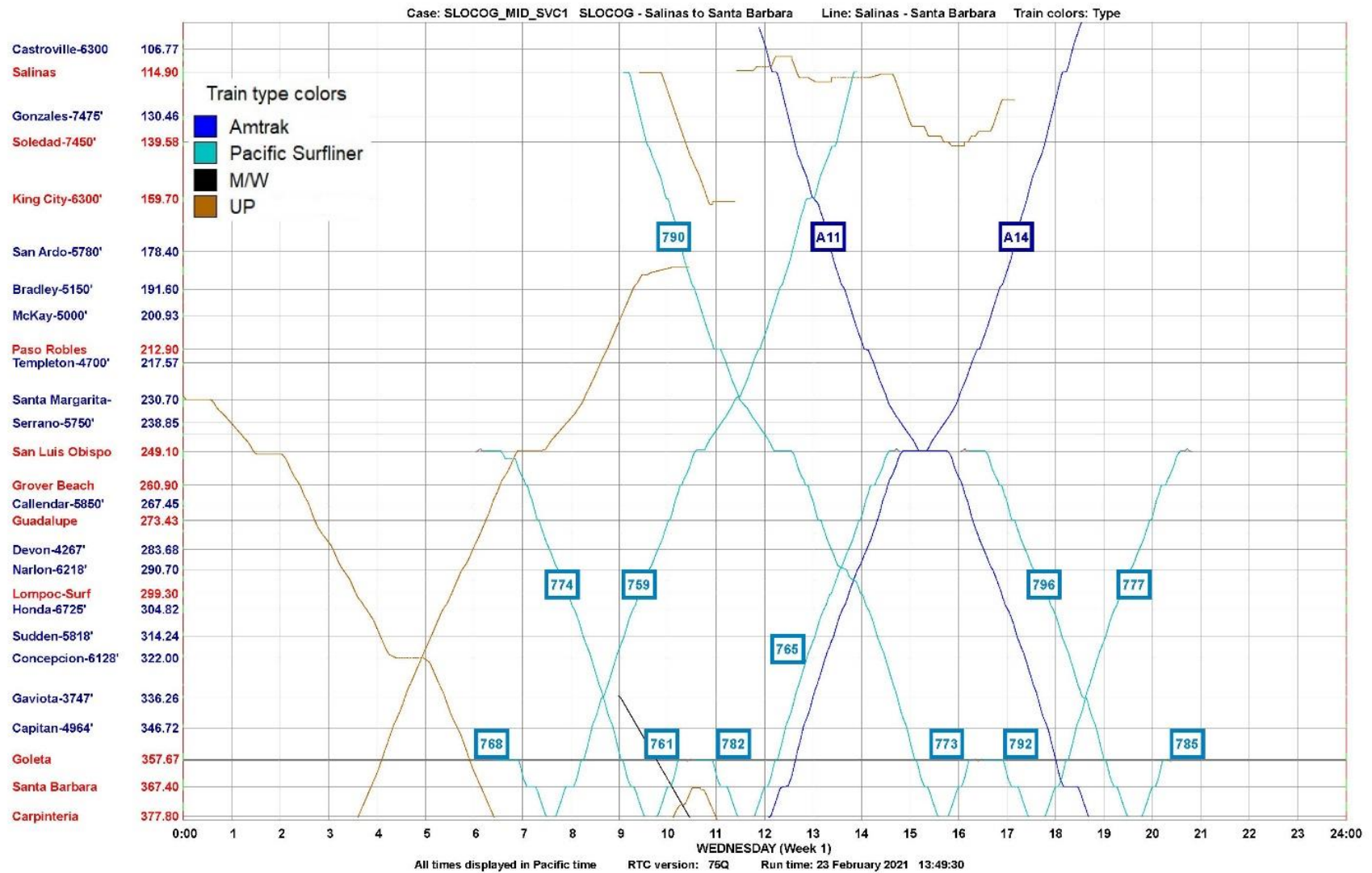
Stringline diagrams depict the operation of all trains over a route for a specific time period.

- The horizontal axis represents time of day
- The vertical axis portrays the stations (highlighted in red) and siding locations along the route
- Each line represents the operation of a single train.
 - When the lines cross it indicates the location where trains meet and pass each other. This indicates that the schedule must utilize a second track at this location.

- When a line is horizontal it indicates when a trainset is stopped at a location for a station stop, work event, or layover.
- If the horizontal line is dotted, it indicated unscheduled dwell or delay.
- Individual train types are color-coded by type (Amtrak long-distance, Pacific Surfliner, UPRR freight, and UPRR maintenance of way crews)

Figure 2-8 shows the stringline diagram for the proposed mid-term, clockface schedules between Santa Barbara and Salinas:

Figure 2-8. Stringline Diagram, Mid-Term Schedule Options B and C (Salinas - Santa Barbara)



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2.2.3.1 *Recommended Infrastructure improvements for both the Coast Daylight and Pacific Surfliner Extension*

Upgrade siding at King City

In order to facilitate appropriate train meets between the southbound Coast Starlight and the northbound Surfliner extension/Coast Daylight between SLO and Salinas, the existing UPRR siding at King City (MP 160.3) should be upgraded (signals, power switches, track) to support the meets.

2.2.3.2 *Recommended Infrastructure improvements exclusively for the Pacific Surfliner Extension*

Layover/light maintenance facility in Salinas

Given the long duration of the trip between Los Angeles Union Station (LAUS) and Salinas (8-plus hours), it was not possible to find schedules that would allow for a daytime turn of equipment at Salinas while offering reasonable departure and arrival times at either end of the route. Extending service further north would further impede the ability to schedule daytime equipment turns. Therefore, this service option would require a light layover/light maintenance facility for the overnight layover of the trainset.

This analysis includes a high-level cost estimate for a Salinas layover/light maintenance facility. However, TAMC has plans to build a layover facility in Salinas to facilitate their plans to extend either Caltrain or Capitol Corridor service to Salinas, and the construction of additional layover capacity may not be feasible. Extending the service to an alternative terminus further north, such as San Jose or Gilroy, may provide better locations for trains to lay over.

2.2.3.3 *Infrastructure Summary*

The recommended improvements support this proposed mid-term schedule alternative. The primary focus of these improvements is to facilitate train meets between the northbound and southbound Coast Starlight and the extended state-supported passenger train service between San Luis Obispo and Salinas. One of UPRR's requirements is that the new trains have no negative impact on Coast Starlight performance. If, in the future, the Coast Starlight schedule undergoes change, the infrastructure solutions that work for the Starlight and state-supported trains in this analysis may not work in the future. A siding recommended for upgrade may not materially support extended passenger service, while another siding may provide that support. If the proposed service schedules or Coast Starlight schedules change, the meet location changes, and another siding could be substituted for one recommended in this study. Unpowered sidings on this segment that are not upgraded in this service alternative include:

- Gonzales, MP 131.2
- Soledad, MP 140.2
- San Ardo, MP 179.5
- Bradley, MP 192.5
- McKay, MP 200.2
- Templeton, MP 217.6
- Serrano, MP 238.8
- Chorro, MP 242.7

2.3 Summary of Infrastructure by Option

Table 2-1 summarizes the improvements requested by UPRR or identified through operational modeling for each service option. Note that only the Santa Barbara to Salinas corridor was modelled, and service options travelling north of Salinas may require additional improvements subject to further study and negotiation with host railroads.

Table 2-1. Summary of Infrastructure by Service Option, Mid-Term Horizon

	A-Capitol Corridor Extension	B-Extend Pacific Surfliner	C-Coast Daylight
Santa Barbara-SLO	Additional service can be achieved with completion of ongoing LOSSAN North Improvement Program		
SLO-Salinas	<ul style="list-style-type: none"> • Complete centralized traffic control (CTC) and positive train control (PTC) installation • Power up Santa Margarita Siding and install universal crossover near center of siding • Notching of 9 tunnels • Upgrade siding at Templeton 	<ul style="list-style-type: none"> • Complete CTC and PTC installation • Power up Santa Margarita Siding and install universal crossover near center of siding • Notching of 9 tunnels • Upgrade siding at King City • Layover/light maintenance facility in Salinas* 	<ul style="list-style-type: none"> • Complete CTC and PTC installation • Power up Santa Margarita Siding and install universal crossover near center of siding • Notching of 9 tunnels • Upgrade siding at King City
North of Salinas	Subject to further study	N/A	Subject to further study

* Assumes service terminates in Salinas. Extending further north may allow equipment to lay over at an existing facility.

2.4 Impacts on UPRR Freight Service

UPRR freight trains were included in the model. For the most part, there are few conflicts between existing UPRR freight operations and the addition of one passenger train between Salinas and SLO. Some local trains may face minor delays, depending on the customers served that day, but overall freight operational flexibility will benefit from the installation of CTC and powering of sidings (Santa Margarita and King City for Options 1 and 2 or Santa Margarita and Templeton for Option 3) on the route segment.

2.5 Mid-Term Service Option Equipment Needs

2.5.1 Extend service from the North

Equipment requirements for extending service to SLO from the north depends upon several factors. The operator of the proposed service and their existing equipment pool would be a factor, as well as plans for fleet expansion to support extension of service from San Jose or Gilroy to Salinas. Extending one round trip from Salinas to SLO would add an additional 272 daily train miles to any fleet supporting the service. Given the fact that an existing Pacific Surfliner set averages 567 train miles per day, operating roughly half that number of train miles would likely require additional equipment to be added to that equipment pool. For the purpose of estimating capital costs, one additional trainset in daily service and one spare of each type of vehicle (locomotive, café car, etc) are assumed to be required.

2.5.2 Extend one Pacific Surfliner to San Luis Obispo

There are 9 full trainsets currently in the LOSSAN Pacific Surfliner equipment pool. In 2020, LOSSAN was planning on extending one train to SLO using the existing pool, creating three daily round trips between LA and SLO.

Extending one of those trains from SLO to Salinas would add 272 daily revenue train miles to the Pacific Surfliner service fleet. The average daily train miles for the 9 existing trainsets (including the third Goleta-SLO round trip) is 567 miles.

For this option, one trainset laying overnight at SLO would instead lay over at Salinas. It is possible that the existing 9 trainsets could support extending one train to Salinas, however given the fact that the fleet supports all services between San Diego and SLO, adding 272 daily train miles to the fleet's operation may require more equipment. Thus, it is assumed that one new trainset for daily service and one spare of each type of vehicle will be required for Option B. However, further analysis and consultation with LOSSAN is recommended.

2.5.3 Coast Daylight Service

The Coast Daylight Study did not estimate additional equipment required to support the service. Generally, an independent operation of an intercity train of this route length would require two trainsets, one operating in each direction every day, plus some spare equipment. At a minimum, the spare pool should include at least one type of each piece of equipment in order to replace damaged equipment and cycle all equipment for scheduled maintenance.

It is assumed that the Daylight would occupy an existing Pacific Surfliner slot, which would reduce daily train miles for the Surfliner fleet by anywhere from 444 to 700 miles, depending on whether the train's southern terminus is Los Angeles or San Diego. If the Daylight was part of the Surfliner pool, additional equipment would still be required to support the additional 400 to 500 (San Jose or San Francisco) daily train miles the equipment would be operating. Conversely, the Daylight could become part of another equipment pool such as the Capitol Corridor fleet.

Expansion of either fleet to include the Coast Daylight service would likely be more cost effective than operating an independent fleet. Joining an existing equipment pool would provide for a larger pool of spare equipment, reducing spare requirements, and reduced maintenance costs with equipment and parts interchangeability.

For the purpose of estimating capital costs, the service is assumed to require two trainsets in daily service plus one spare of each type of vehicle.

2.6 Estimated Capital Costs

Table 2-2 and Table 2-3 show the capital costs for infrastructure and equipment associated with each service option, respectively. Further detail on the estimates of infrastructure costs are provided in Appendix B. Note that, for the purpose of estimating equipment costs, 5-car trainsets are assumed for a potential extension of service from the north, and 6-car trainsets are assumed for other service options.

Table 2-2. Infrastructure Costs by Service Option, Mid-Term (2021 Dollars)

Project	Cost	A-Extend Capitol Corridor	B-Extend Surfliner	C-Coast Daylight
CTC/PTC Installation	\$48,960,000	✓	✓	✓
Tunnel Notching and Bridge Replacement	\$20,256,000	✓	✓	✓
Power up Santa Margarita Siding	\$19,468,800	✓	✓	✓
Upgrade Siding at Templeton	\$15,532,800	✓		
Upgrade Siding at King City	\$10,142,400		✓	✓
Salinas Layover Facility	\$5,046,480		✓*	**
Totals		\$104,217,600	\$103,873,680	\$98,827,200

*Assumes the service terminates in Salinas. Continuing north may provide preferable layover locations options.

**Assumes a layover location is available in San Francisco or San Jose

Table 2-3. Rail Equipment Cost Estimates by Service Option, Mid-Term Horizon (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Trainsets in daily service	1	1	2
6-car	0	1	2
4-car	1	0	0
Spare ratio	20%	20%	20%
Vehicles Required			
Diesel-Electric Locomotive	2	2	3
Bi-Level Coach Car	3	3	5
Bi-Level Coach Café Car	2	2	3
Bi-Level Business Class Car	2	3	5
Bi-Level Coach Baggage Cab Car	2	2	3
Total Cost	\$56,170,000	\$60,782,500	\$95,530,000

3 Long-Term Horizon

The Long-Term Horizon service goals in the corridor are:

- o Integrated intercity rail and intercity bus every hour between Salinas and San Luis Obispo, including intercity rail at least every 4 hours
- o Integrated intercity rail and intercity bus every hour between San Luis Obispo and Goleta/Santa Barbara, including at least bi-hourly intercity rail service

There are many potential schedules that fit these parameters. To generate a high-level assessment of necessary infrastructure investment, only one conceptual schedule was modeled, as it was assumed that all service options (A, B, and C) would use similar train slots. Differences in specific infrastructure requirements between the long-term options would be influenced by interaction with future schedules of

the Coast Starlight, as well as Pacific Surfliner, Capitol Corridor, Metrolink, and High-Speed rail outside the Coast Corridor, which are unknown at this time.

The clockface schedules between Goleta and SLO developed in Section 2.1 utilizes infrastructure improvements agreed upon by LOSSAN, CalSTA and UP. With the exception of the Amtrak Coast Starlight, all northbound and southbound passenger trains meet at the same siding locations. Adding additional trains does not necessarily require additional infrastructure, as long as each schedule fits within the clockface slot. The exception is the corridor between SLO and Salinas, where a meet with the Coast Starlight and Train 761 necessitates upgrading the siding at Soledad (MP 140.2) to accommodate this meet.

The long-term schedule provides for seven daily round trips between Goleta and SLO, and three round trips extended north to Salinas. Figure 3-1 and Figure 3-2 show the proposed long-term schedules:

Figure 3-1. Long-term Northbound Schedule (Santa Barbara-Salinas)

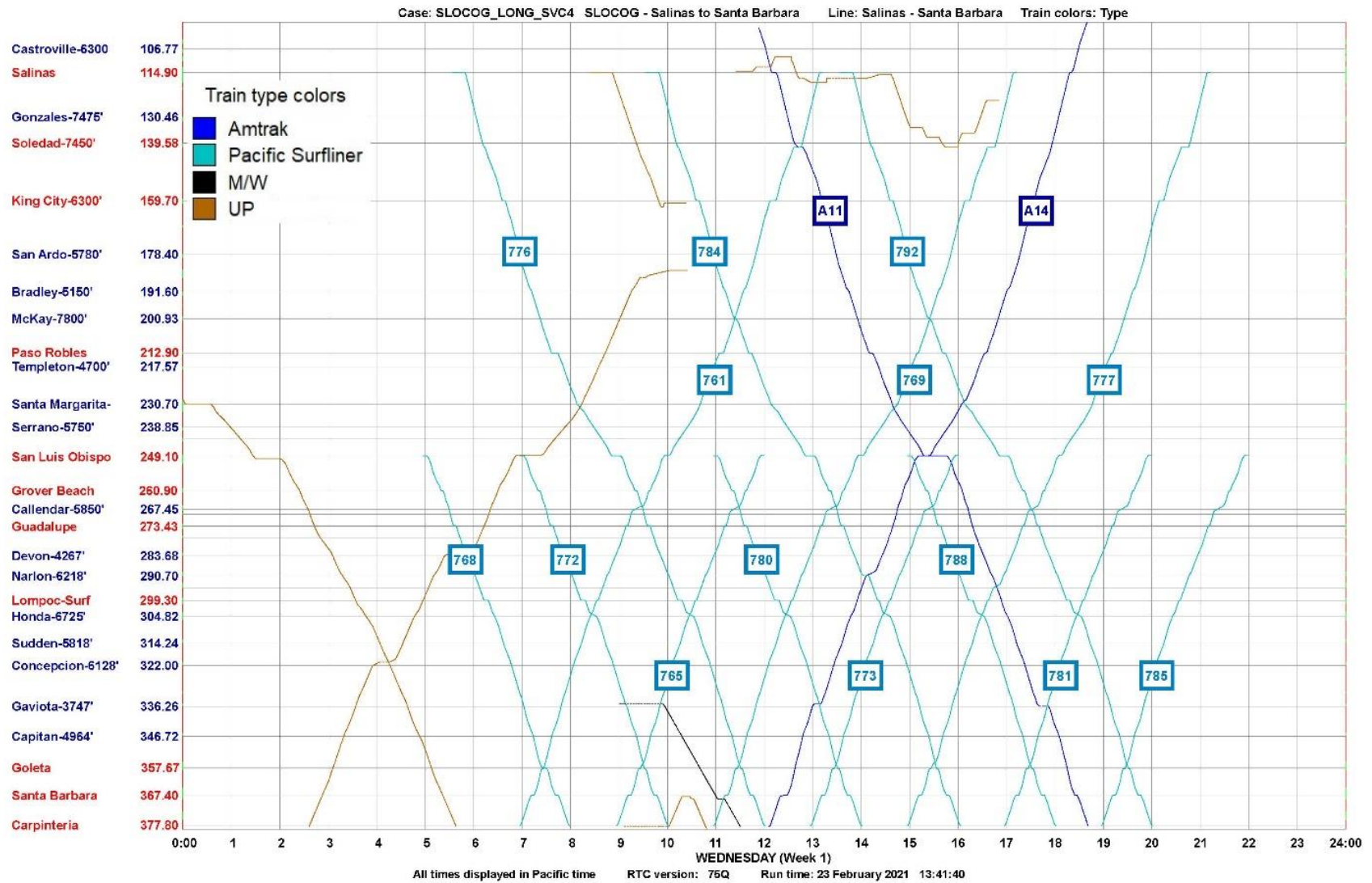
				Coast Starlight				
Train number	761	765	769	14	773	777	781	785
SANTA BARBARA	07:14	09:14	11:14	12:24	13:14	15:14	17:14	19:14
GOLETA	07:26	09:26	11:26	-	13:26	15:26	17:26	19:26
LOMPOC/SURF	08:34	10:34	12:34	-	14:34	16:34	18:34	20:34
GUADALUPE	09:10	11:10	13:10	-	15:10	17:10	19:10	21:10
GROVER BEACH	09:29	11:29	13:29	-	15:29	17:29	19:29	21:29
SAN LUIS OBISPO	10:03	12:03	14:03	15:19	16:03	18:03	20:03	22:03
PASO ROBLES	11:09		15:09	16:21		19:09		
KING CITY	12:14		16:14	-		20:14		
SOLEDAD	12:45		16:45	-		20:45		
SALINAS	13:08		17:08	18:12		21:08		

Figure 3-2. Long-term Southbound Schedule (Santa Barbara-Salinas)

							Coast Starlight	
Train number	768	772	776	780	784	788	11	792
SALINAS			05:49		09:49		12:13	13:49
SOLEDAD			06:12		10:12		-	14:12
KING CITY			06:39		10:39		-	14:39
PASO ROBLES			07:44		11:44		14:03	15:44
SAN LUIS OBISPO	05:02	07:02	09:02	11:02	13:02	15:02	15:45	17:02
GROVER BEACH	05:22	07:22	09:22	11:22	13:22	15:22	-	17:22
GUADALUPE	05:38	07:38	09:38	11:38	13:38	15:38	-	17:38
LOMPOC/SURF	06:18	08:18	10:18	12:18	14:18	16:18	-	18:18
GOLETA	07:24	09:24	11:24	13:24	15:24	17:24	-	19:24
SANTA BARBARA	07:39	09:39	11:39	13:39	15:39	17:39	18:27	19:39

Figure 3-3 shows the stringline diagram for long-term schedule:

Figure 3-3. Stringline Diagram, Long-Term Schedule (Salinas – Santa Barbara)



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3.1 Recommended Infrastructure improvements for the Long-Term Horizon

3.1.1 Santa Barbara to San Luis Obispo

As mentioned earlier in the report, LOSSAN, CalSTA and UPRR reached agreement in 2020 on infrastructure improvements between Santa Barbara and SLO to support a third round trip to/from SLO, and protect passenger on-time performance.

The proposed long-term clockface schedules utilize the Santa Barbara to SLO improvements. The increase in daily service from 6 to 16 daily passenger trains will incur far more train meets on a single-track rail section, increasing the possibility of trans being delayed with the potential to cascade delays further down the passenger schedule. Train meets that are scheduled at the Honda siding (MP 304), for example, may need to be performed at another siding if one of the trains is delayed enroute. For this particular example, the meet may need to occur at the next siding north (Surf, MP 299) or the next siding south (Sudden, MP 313.5). Neither sidings are included in the 2020 infrastructure improvement plan. Powering the remaining unpowered sidings on this route may be beneficial in improving operational flexibility, reliability and capacity for both passenger and freight traffic. Sidings not part of the 2020 improvement plan include:

- Grover, MP 260.34-261.61
- Surf, MP 298.8-299.9
- Sudden, MP 314.2-313.1
- Capitan, MP 346.7-345.7

3.1.2 San Luis Obispo to Salinas

In addition to the siding improvements recommended for the Mid-Term services, it is recommended that the sidings at Soledad (MP 139.58) and McKay (MP 200.2) be upgraded to powered, controlled sidings. There are currently two short sidings at McKay on either side of the main track. The improvement would include combination of the sidings to one siding and realignment of the main track.

3.1.3 Summary of Infrastructure Improvements and Costs

Table 3-1 summarizes the improvements requested by UPRR or identified through operational modeling for each service option. Note that only the Santa Barbara to Salinas corridor was modelled, and additional improvements subject to further study and negotiation with host railroads may be required for service north of Salinas.

Table 3-1. Summary of Infrastructure, Long-Term Horizon

Project	Cost
Combine McKay Sidings	\$12,258,432
Upgrade Soledad Siding	\$10,171,200
Total	\$22,429,632

3.2 Impacts on UPRR Freight Service

The operation of eight daily passenger train round trips between Goleta and SLO, and four between SLO and Salinas, will reduce the availability of windows for freight trains to operate during daylight hours. Some freight operations could be potentially shifted to times of the day when passenger trains are not operating, while others serving online customers may not be able to do so. Depending on UPRR freight volumes and customer requirements in 2040, additional infrastructure improvements, such as powering

additional existing sidings, may be needed to support both long-term passenger schedules and UPRR freight services.

3.2.1 Equipment Needs and Costs

Determining, at a high level, the additional number of trainsets need to support 4 more daily round trips between Goleta and SLO and 3 round trips between SLO and Salinas is relatively straightforward if daily train miles are used as a measurement. Table 3-2 shows the additional train miles by service and the additional trainsets that may be required.

Total equipment needs were calculated by adding the number of additional trains in daily service for the mid-term and long-term horizons and applying a 20% spare ratio. Additional vehicles required reflect this total minus the number of vehicles previously acquired for mid-term service

Note that these estimates reflect train miles on the Central Coast and do not include the equipment requirements for increasing service frequencies between San Diego, Los Angeles and Santa Barbara or north of Salinas.

Table 3-2. Additional Rail Equipment Cost Estimates by Service Option, Long-Term Horizon (2021 Dollars)

	A-Capitol Corridor Extension	B-Extend Surfliner	C-Coast Daylight
Additional Daily Train Miles	1424	1424	1424
Santa Barbara-SLO (220 miles)	880	440	440
SLO-Salinas (272 miles)	544	0	0
Santa Barbara-Salinas (492 miles)	0	984	984
Additional trainsets in daily service	3	3	3
6-car	2	3	3
4-car	1	0	0
Additional Vehicles Required, including spares			
Diesel-Electric Locomotive	3	3	3
Bi-Level Coach Car	7	7	7
Bi-Level Coach Café Car	3	3	3
Bi-Level Business Class Car	6	7	7
Bi-Level Coach Baggage Cab Car	3	3	3
Total Cost	\$108,342,500	\$112,955,000	\$112,955,000



Task 4.4:
Service Improvement Plan
Appendix B:
Infrastructure
Improvements and High-
Level Cost Estimate

SLOCOG Coast Corridor Rail Service Study

March 26, 2021

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Memo

Date: Monday, March 15, 2021

Project: San Luis Obispo Council of Governments (SLOCOG)
Coast Corridor Rail Service Study

To: Rick Degman

From: Gerard Reminiskey

Subject: Infrastructure Improvements and High-Level Cost Estimate
Coast Corridor Rail Service Study Service Improvement Plan

Background

HDR is preparing a Service Improvement Plan (SIP) to develop of a phased implementation plan to achieve higher integrated intercity rail and bus service levels, providing bus connections to trains that terminate in Goleta, San Luis Obispo, Salinas, or San Jose.

Purpose

The contents of this memo are intended for use within an appendix to the SIP.

Proposed Title of the Appendix

Appendix B: Infrastructure Improvements and High-Level Cost Estimate

Infrastructure Improvements Evaluated for the SIP

The SIP includes the following infrastructure improvements projects (Infrastructure Projects). Infrastructure Project locations are indicated on Figure 1.

- Salinas Layover/Light Maintenance Facility (may not be required if service terminates in a different location)
- Tunnel Notching Project and Bradley Bridge Replacement
- McKay Siding Combination Mile Post (MP) 200.2 to MP 201.8
- Centralized Traffic and Positive Train Control Systems MP 113.0 to MP 233.2
- Controlled Sidings Converted from Existing Sidings in Soledad, King City, Templeton and Santa Margarita

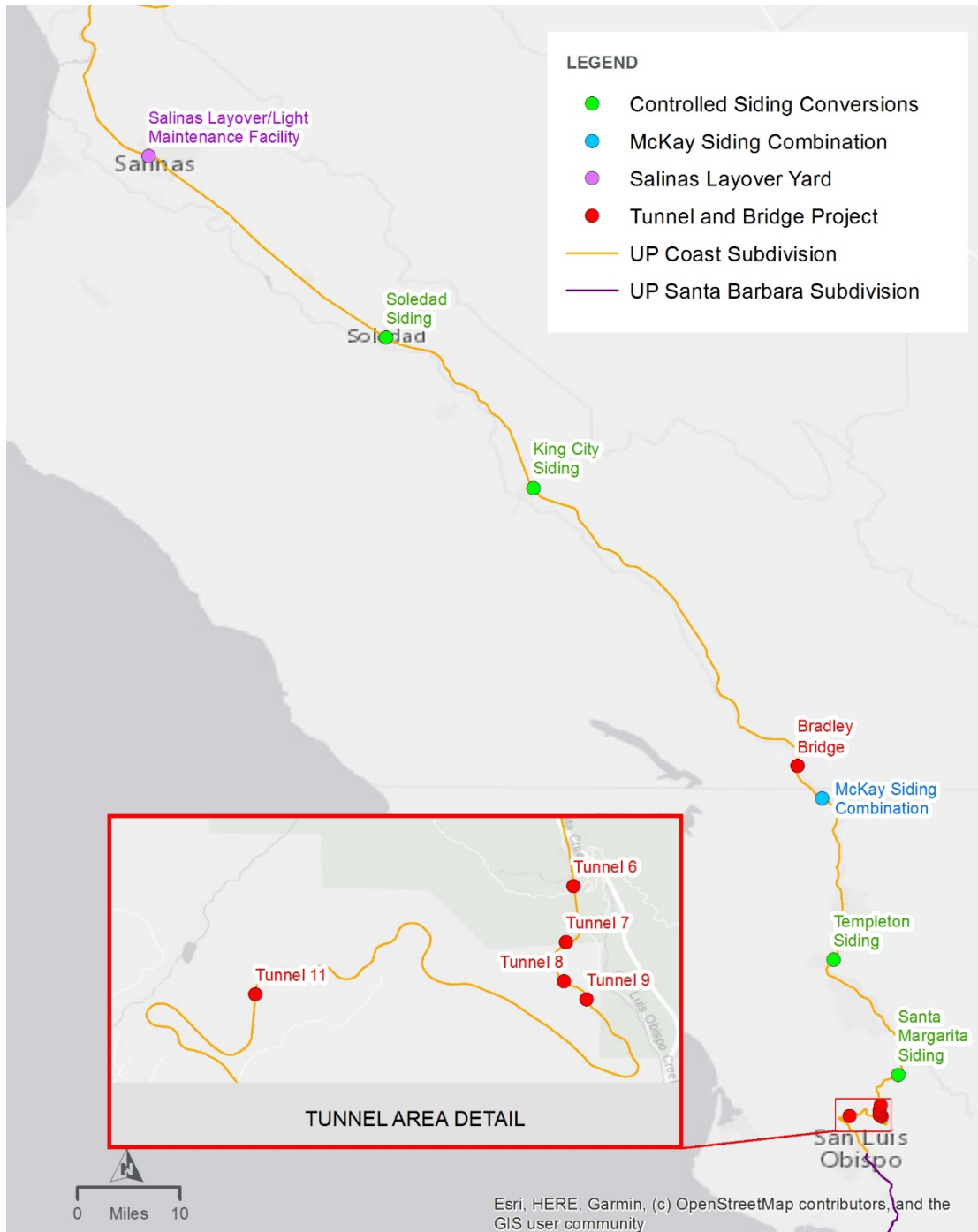


Figure 1 - Vicinity Map

Assumptions and Features per Infrastructure Project

Salinas Layover/Light Maintenance Facility

- All improvements would be contained within existing Union Pacific Railroad (UP) right-of-way as shown on Figure 2
- Access to the site would be available from New Street
- Site improvements would provide for the following functionality:
 - One storage track with the capacity for one 10-car Amtrak train consist
 - Site lighting
 - Security fencing
 - Fueling pad
 - Oil-water separator system

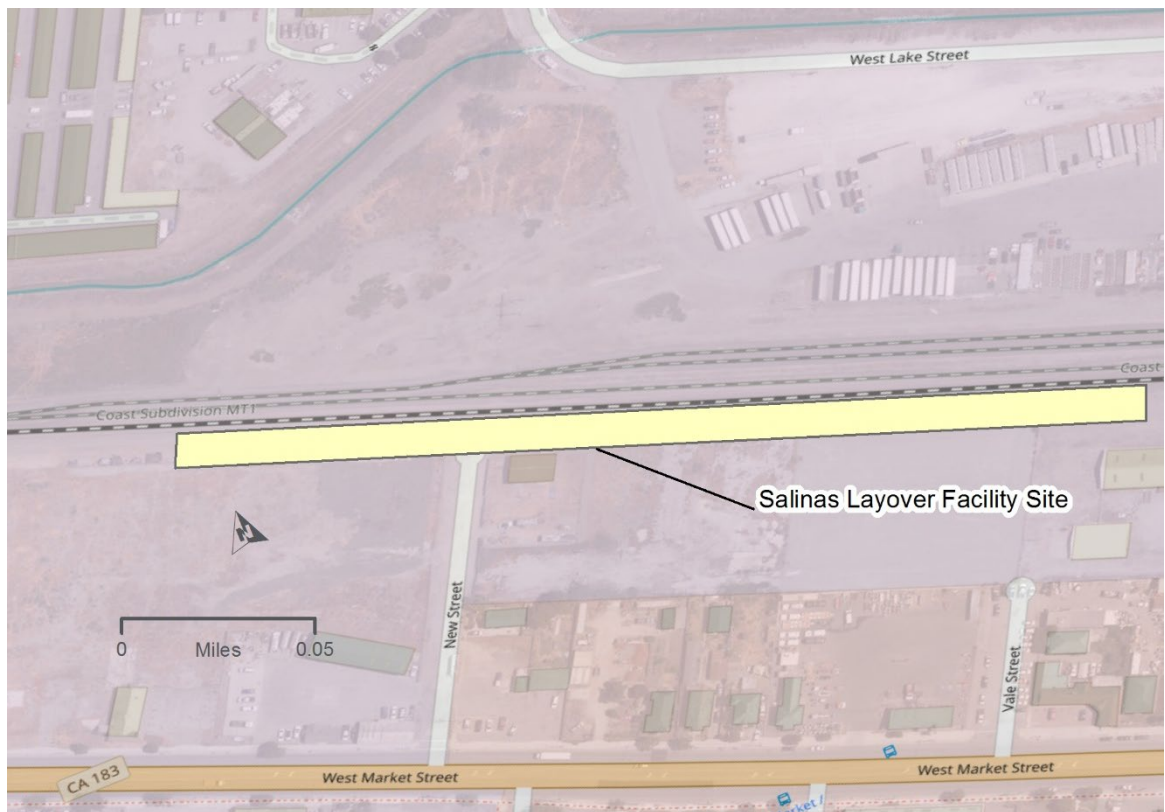


Figure 2 - Proposed Site for the Salinas Layover Yard

Tunnel Notching Project and Bradley Bridge Replacement

- The total cost for this Infrastructure Project was provided by UP based on a separate study by others.

McKay Siding Combination

- Preservation of the spur track to the Camp Roberts US Government facility was held as a constraint.
- The concept combines Tracks 130 and 131 while shifting the existing main line track as shown in Figure 3.
- Track improvements are contained within UP right-of-way.
- Existing billboards may require removal.

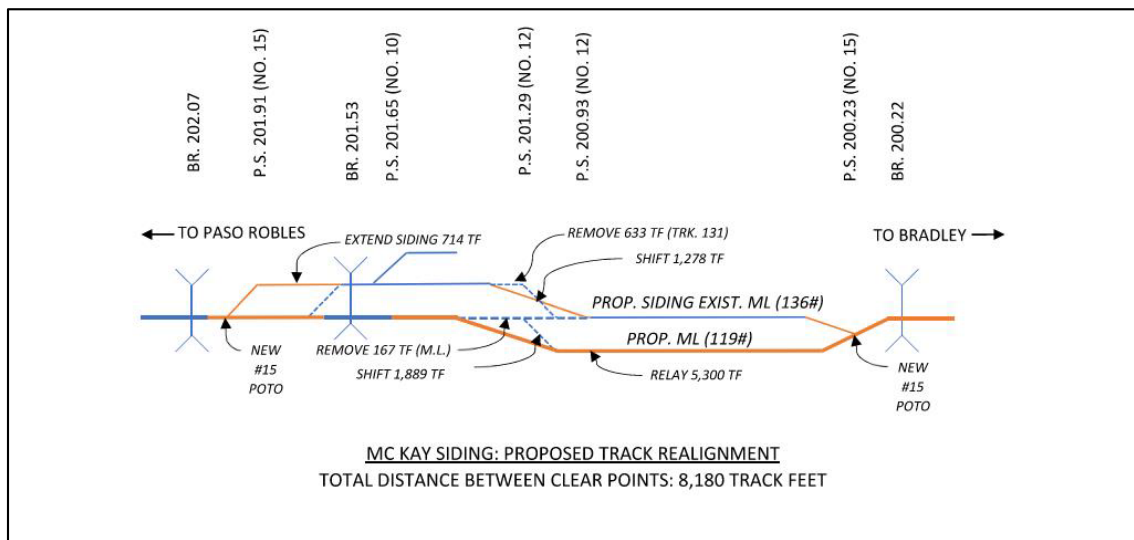
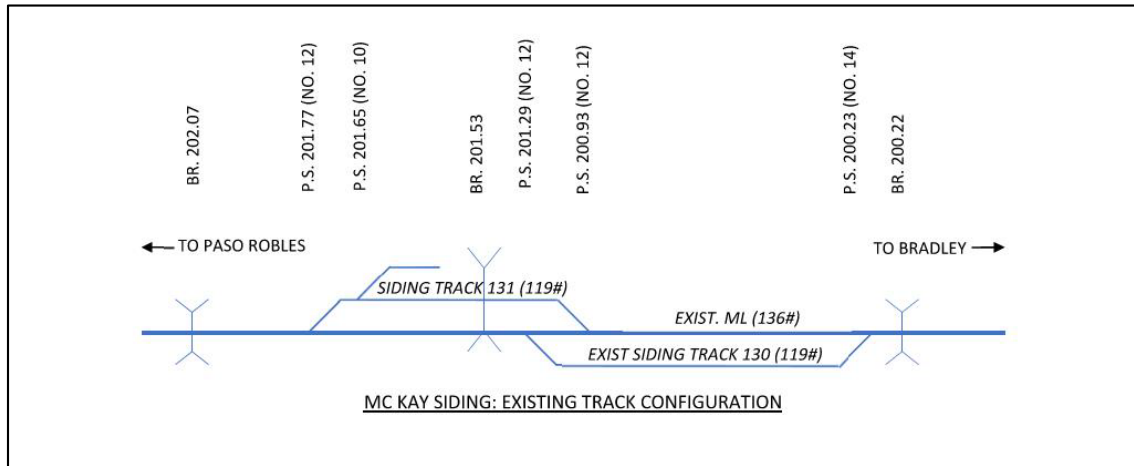


Figure 3 – McKay Siding Combination Concept

Centralized Traffic Control (CTC) and Positive Train Control (PTC) Systems

- Provides CTC and PTC for a 120-mile segment of the Coast Subdivision between MP 113.1 North Salinas and MP 233.1 South Santa Margarita.
- CTC unit costs are based on a per signal basis
- Route-miles (RM) that include a CP received a higher unit cost than RM without a CP

- PTC costs are stated as a lump sum derived from a 2018 Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program grant application; the lump sum cost is escalated to a 2021 value

Controlled Sidings Converted from Existing Sidings

- Existing sidings on the Coast Subdivisions would receive new No. 15 turnouts and control point signaling at each existing end-of-siding location.
- Four sidings are included in this Infrastructure Project:
 - Soledad Siding MP 139.58 to MP 141.14
 - King City Siding, MP 159.31 to MP 160.65
 - Templeton Siding, MP 217.57 to MP 218.58
 - Santa Margarita Siding, MP 229.51 to MP 233.19
- A No. 15 universal crossover would be installed within the limits of Santa Margarita Siding.
- Track rehabilitation for the sidings is not included.

Other Projects

In addition to the five Infrastructure Projects included in this cost estimate, other projects being developed by LOSSAN, Caltrans, and UP. Eight sidings on the Santa Barbara Subdivision are considered for conversion to controlled sidings. These sidings are considered part of the baseline infrastructure and therefore not included as Infrastructure Projects to accommodate the service levels proposed in the Coast Corridor Rail Service Study Service Improvement Plan. The location of the eight sidings are listed as follows and shown on Figure 4.

- Callender Siding MP 266.3 to MP 268.1
- Guadalupe Siding MP 272.7 to MP 273.6
- Waldorf Siding MP 276.7 to MP 277.5
- Devon Siding MP 282.8 to MP 283.7
- Narlon Siding MP 289.4 to MP 290.7
- Tangair Siding MP 293.7 to MP 294.8
- Honda Siding MP 303.4 to MP 304.8
- Concepcion Siding MP 320.7 to MP 322.0

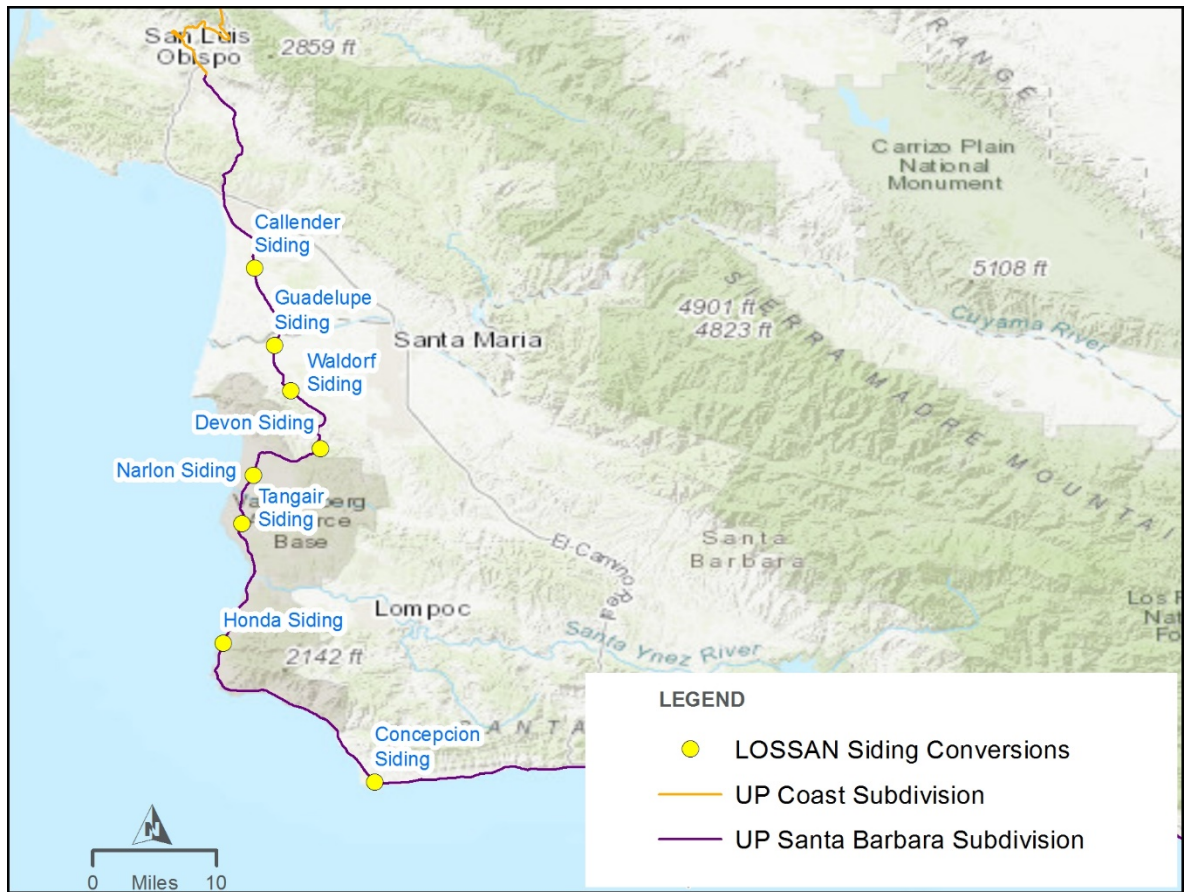


Figure 4 - LOSSAN Siding Project Locations

Cost Data

The following pages provide high-level cost estimates for each Infrastructure Project.

INFRASTRUCTURE PROJECT COST ESTIMATE

Project Name:	San Luis Obispo Council of Governments (SLOCOG) Coast Corridor Rail Service Study
Design Level:	Infrastructure Improvements and High-Level Cost Estimate Coast Corridor Rail Service Study Service Improvement Plan
Last Updated:	15-Mar-21

Infrastructure Project	Total
Salinas Layover/Light Maintenance Facility	5,046,480
Tunnel Notching Project and Bradley Bridge Replacement	20,256,000
McKay Siding Combination	12,258,432
Controlled Sidings Converted from Existing Sidings - UP Coast Subdivision	55,315,200
Centralized Traffic Control and Positive Train Control Systems	48,960,000
ESTIMATED TOTAL, ALL INFRASTRUCTURE PROJECTS	141,836,112

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project

Salinas Layover/Light Maintenance Facility

Project Name:	San Luis Obispo Council of Governments (SLOCOG) Coast Corridor Rail Service Study
Design Level:	Infrastructure Improvements and High-Level Cost Estimate Coast Corridor Rail Service Study Service Improvement Plan
Last Updated:	15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES	
1	TRACK (Layover)					
	Install Track	1220	TF	265.00	\$323,300	Layover Track - 136#, Wood Ties
	Site Grading - 6" Gravel	611	CY	75.00	\$45,825	Fuel Truck and Maintenance Truck Access
	Track Grading - Cut	680	CY	75.00	\$51,000	Assumed Average of 6" Deep x 30' Wide
	Track Subballast	660	CY	100.00	\$66,000	6" x 30' Wide
	Install No. 15 RH HTTO	1	EA	400,000.00	\$400,000	Left Hand Hand Throw
	Install Signals	1	LS	425,000.00	\$425,000	Leaving Signal, DPSS, PTC
	Install Derail	1	EA	35,000.00	\$35,000	Double Switch Point
	Remove No. 15 Track Elements	1	EA	25,000.00	\$25,000	
	Fencing	2205	LF	50.00	\$110,250	6' High Chain Link
	Sliding Gate (50'wide)	1	EA	7,500.00	\$7,500	New Street Entrance
	Swing Gate (20' wide)	1	EA	5,000.00	\$5,000	Layover Track Entrance
	Lighting, Wayside Power and Electrical	1	LS	400,000.00	\$400,000	
	Compressed Air System	1		72,000.00	\$72,000	
	Fueling Pad (Fuel Truck)	1	LS	2,500.00	\$2,500	
	Drip Pans (Locomotives)	1	LS	1,500.00	\$1,500	
Oil-Water Separator	1	LS	78,000.00	\$78,000		
HD Bumper	1	EA	5,500.00	\$5,500		
SUB-TOTAL: TRACK CONSTRUCTION COSTS					\$2,053,375	
2	CIVIL (Layover Track)					
	Site Mitigation -SWPP	1	LS	25,000.00	\$25,000	
	Clearing/Grubbing	1	LS	50,000.00	\$50,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS					\$75,000	
3	Other Infrastructure Costs					
	Property Considerations				\$500,000	
SUB-TOTAL: OTHER COSTS					\$500,000	
SUB-TOTAL: INFRASTRUCTURE COSTS					\$2,628,375	
	%					
	CONSTRUCTION CONTINGENCY	15%			\$394,256	
	CIVIL DESIGN	9%			\$236,554	
	CIVIL DESIGN SUPPORT DURING CONST.	3%			\$78,851	
	S&C DESIGN	3%			\$78,851	
	S&C DESIGN SUPPORT DURING CONST.	2%			\$52,568	
	PROJECT MANAGEMENT	4%			\$105,135	
	CONSTRUCTION MANAGEMENT	8%			\$210,270	
	FLAGGING	6%			\$157,703	
	AGENCY COSTS	10%			\$262,838	
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS					\$1,577,025	
	%					
	PROJECT RESERVE/CONTINGENCY	20%			\$841,080	
	INFLATION	Rate:	0 # Years	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS					\$5,046,480	

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project

Tunnel Notching Project and Bradley Bridge Replacement

Project Name:	San Luis Obispo Council of Governments (SLOCOG) Coast Corridor Rail Service Study
Design Level:	Infrastructure Improvements and High-Level Cost Estimate
Last Updated:	Coast Corridor Rail Service Study Service Improvement Plan 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES	
1	BRIDGE/TUNNELS					
	Bridge No. 197.17	1	LS	1,000,000.00	\$1,000,000	1085'
	Tunnel - MP 235.89 - 236.57	1	LS	3,500,000.00	\$3,500,000	Cuesta - Tunnel # 6 - 3610'
	Tunnel - MP 236.72 - 236.89	1	LS	2,000,000.00	\$2,000,000	Tunnel # 7 - 1360'
	Tunnel - MP 237.22 - 237.31	1	LS	1,000,000.00	\$1,000,000	Tunnel # 8 - 482'
	Tunnel - MP 237.47 - 237.57	1	LS	1,000,000.00	\$1,000,000	Tunnel # 9 - 529'
	Tunnel - MP 242.51 - 242.63	1	LS	1,000,000.00	\$1,000,000	Tunnel# 11 -624'
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$9,500,000		
2	CIVIL					
	Site Mitigation -SWPP	6	LS	100,000.00	\$600,000	
	Clearing/Grubbing	6	LS	75,000.00	\$450,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$1,050,000		
3	Other Infrastructure Costs					
	None					
SUB-TOTAL: OTHER COSTS				\$0		
SUB-TOTAL: INFRASTRUCTURE COSTS				\$10,550,000		
	%					
	CONSTRUCTION CONTINGENCY	15%		\$1,582,500		
	CIVIL DESIGN	9%		\$949,500		
	CIVIL DESIGN SUPPORT DURING CONST.	3%		\$316,500		
	S&C DESIGN	3%		\$316,500		
	S&C DESIGN SUPPORT DURING CONST.	2%		\$211,000		
	PROJECT MANAGEMENT	4%		\$422,000		
	CONSTRUCTION MANAGEMENT	8%		\$844,000		
	FLAGGING	6%		\$633,000		
	AGENCY COSTS	10%		\$1,055,000		
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$6,330,000		
	%					
	PROJECT RESERVE/CONTINGENCY	20%		\$3,376,000		
	INFLATION	Rate:	0 # Years	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS				\$20,256,000		

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
McKay Siding Combination

Project Name: San Luis Obispo Council of Governments (SLOCOG)
Coast Corridor Rail Service Study

Design Level: Infrastructure Improvements and High-Level Cost Estimate
Coast Corridor Rail Service Study Service Improvement Plan

Last Updated: 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES	
1	TRACK AND SIGNALS					
	Install No. 15 POTO	2	EA	400,000.00	\$800,000	1 - LHPO and 1-RHPO
	Remove No. 14 HOTO	2	EA	35,000.00	\$70,000	Track 130
	Remove No. 12 HOTO	2	EA	30,000.00	\$60,000	Track 131
	Install No. 14 Track Elements	1	EA	22,500.00	\$22,500	Track 130
	Install No. 12 Track Elements	1	EA	20,000.00	\$20,000	Track 131
	Remove No. 15 Track Elements	1	EA	25,000.00	\$25,000	Track 130
	Install Track (Track 131 Extension)	4770	TF	265.00	\$1,264,050	136# RE - Wood Ties
	Track Relay With 50% Tie Renewal	4930	TF	210.00	\$1,035,300	Track 131 - 119# to 136# - Wood
	Remove Track 130	6583	TF	100.00	\$658,300	119# - Wood
	Grading	1046	CY	75.00	\$78,450	Assume 12" Fill x 12' Wide
	Subballast	1060	CY	100.00	\$106,000	Assume 6" Deep x 12' Wide
	Remove Derail	4	EA	7,500.00	\$30,000	
	Remove Bill Board	1	EA	35,000.00	\$35,000	
	Install Double Point Derail	2	EA	35,000.00	\$70,000	
	Control Points	2	EA	1,000,000.00	\$2,000,000	
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$6,274,600		
2	CIVIL					
	Site Mitigation -SWPP	1	LS	65,000.00	\$65,000	
	Clearing/Grubbing	1	LS	45,000.00	\$45,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$110,000		
3	Other Infrastructure Costs					
	None					
SUB-TOTAL: OTHER COSTS				\$0		
SUB-TOTAL: INFRASTRUCTURE COSTS				\$6,384,600		
		%				
	CONSTRUCTION CONTINGENCY	15%			\$957,690	
	CIVIL DESIGN	9%			\$574,614	
	CIVIL DESIGN SUPPORT DURING CONST.	3%			\$191,538	
	S&C DESIGN	3%			\$191,538	
	S&C DESIGN SUPPORT DURING CONST.	2%			\$127,692	
	PROJECT MANAGEMENT	4%			\$255,384	
	CONSTRUCTION MANAGEMENT	8%			\$510,768	
	FLAGGING	6%			\$383,076	
	AGENCY COSTS	10%			\$638,460	
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$3,830,760		
		%				
	PROJECT RESERVE/CONTINGENCY	20%			\$2,043,072	
	INFLATION	Rate:	0 # Years:	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS				\$12,258,432		

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
 Controlled Sidings Converted from Existing
 Sidings - UP Coast Subdivision

Project Name:	San Luis Obispo Council of Governments (SLOCOG) Coast Corridor Rail Service Study
Design Level:	Infrastructure Improvements and High-Level Cost Estimate Coast Corridor Rail Service Study Service Improvement Plan
Last Updated:	15-Mar-21

Location	
Soledad Siding MP 139.58 to MP 141.14	10,171,200
King City Siding, MP 159.31 to MP 160.65	10,142,400
Templeton Siding, MP 217.57 to MP 218.58	15,532,800
Santa Margarita Siding, MP 229.51 to MP 233.19	19,468,800

TOTAL INFRASTRUCTURE PRC	\$55,315,200
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INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
 Controlled Sidings Converted from Existing Sidings -
 Soledad Siding, UP Coast Subdivision

Project Name: San Luis Obispo Council of Governments (SLOCOG)
 Coast Corridor Rail Service Study

Design Level: Infrastructure Improvements and High-Level Cost Estimate
 Coast Corridor Rail Service Study Service Improvement Plan

Last Updated: 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES	
1	TRACK AND SIGNAL					
	CP - Soledad Siding - MP 139.58 - 141.14	1	LS	2,250,000.00	\$2,250,000	Track 155 (7,450')
	No. 15 POTO	2	EA	400,000.00	\$800,000	Replace Existing No. 14s, 12s & 10 with No. 15s
	Remove No. 14 HTTO	1	EA	35,000.00	\$35,000	Soledad (1)
	Remove No. 12 HTTO	1	EA	32,500.00	\$32,500	Soledad (1)
	Remove Existing Intermediate Signals	2	EA	50,000.00	\$100,000	Soledad
	Control Points	2	EA	1,000,000.00	\$2,000,000	
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$5,217,500		
2	CIVIL					
	Site Mitigation -SWPP	1	LS	50,000.00	\$50,000	
	Clearing/Grubbing	1	LS	30,000.00	\$30,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$80,000		
3	Other Infrastructure Costs					
	None					
SUB-TOTAL: OTHER COSTS				\$0		
SUB-TOTAL: INFRASTRUCTURE COSTS				\$5,297,500		
	CONSTRUCTION CONTINGENCY	15%			\$794,625	
	CIVIL DESIGN	9%			\$476,775	
	CIVIL DESIGN SUPPORT DURING CONST.	3%			\$158,925	
	S&C DESIGN	3%			\$158,925	
	S&C DESIGN SUPPORT DURING CONST.	2%			\$105,950	
	PROJECT MANAGEMENT	4%			\$211,900	
	CONSTRUCTION MANAGEMENT	8%			\$423,800	
	FLAGGING	6%			\$317,850	
	AGENCY COSTS	10%			\$529,750	
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$3,178,500		
	PROJECT RESERVE/CONTINGENCY	20%			\$1,695,200	
	INFLATION	Rate:	0 # Years	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS				\$10,171,200		

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
 Controlled Siding Converted from Existing Siding -
 King City Siding, UP Coast Subdivision

Project Name: San Luis Obispo Council of Governments (SLOCOG)
 Coast Corridor Rail Service Study

Design Level: Infrastructure Improvements and High-Level Cost Estimate
 Coast Corridor Rail Service Study Service Improvement Plan

Last Updated: 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES	
1	TRACK AND SIGNAL					
	CP - King City Siding - MP 159.31 - 160.65	1	LS	2,000,000.00	\$2,000,000	Track 120 (6,300')
	No. 15 POTO	2	EA	400,000.00	\$800,000	Replace Existing No. 14s, & 12s with No. 15s
	Remove No. 12 HTTO	1	EA	32,500.00	\$32,500	King City (1)
	Remove No. 10 HTTO	1	EA	30,000.00	\$30,000	King City (1)
	Remove Existing Intermediate Signals	2	EA	50,000.00	\$100,000	King City
	Control Points	2	EA	1,000,000.00	\$2,000,000	
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$4,962,500		
2	CIVIL					
	Site Mitigation -SWPP	4	LS	50,000.00	\$200,000	
	Clearing/Grubbing	4	LS	30,000.00	\$120,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$320,000		
3	Other Infrastructure Costs					
	None					
SUB-TOTAL: OTHER COSTS				\$0		
SUB-TOTAL: INFRASTRUCTURE COSTS				\$5,282,500		
		%				
	CONSTRUCTION CONTINGENCY	15%		\$792,375		
	CIVIL DESIGN	9%		\$475,425		
	CIVIL DESIGN SUPPORT DURING CONST.	3%		\$158,475		
	S&C DESIGN	3%		\$158,475		
	S&C DESIGN SUPPORT DURING CONST.	2%		\$105,650		
	PROJECT MANAGEMENT	4%		\$211,300		
	CONSTRUCTION MANAGEMENT	8%		\$422,600		
	FLAGGING	6%		\$316,950		
	AGENCY COSTS	10%		\$528,250		
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$3,169,500		
		%				
	PROJECT RESERVE/CONTINGENCY	20%		\$1,690,400		
	INFLATION	Rate:	0 # Years	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS				\$10,142,400		

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
 Controlled Siding Converted from Existing Siding -
 Templeton Siding, UP Coast Subdivision

Project Name: San Luis Obispo Council of Governments (SLOCOG)
 Coast Corridor Rail Service Study

Design Level: Infrastructure Improvements and High-Level Cost Estimate
 Coast Corridor Rail Service Study Service Improvement Plan

Last Updated: 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES	
1	TRACK AND SIGNAL					
	CP - Templeton Siding - MP217.57 - 218.58	1	LS	1,550,000.00	\$1,550,000	Track 137 (4,700')
	CP - Santa Margarita Siding - MP 229.51 - 232.42	1	LS	3,250,000.00	\$3,250,000	Track 140 (19,015')
	No. 15 POTO	2	EA	400,000.00	\$800,000	Replace Existing No. 14s with No. 15s
	Remove No. 14 HTTO	2	EA	35,000.00	\$70,000	Templeton (2)
	Remove Existing Intermediate Signals	2	EA	50,000.00	\$100,000	Templeton
	Control Points	2	EA	1,000,000.00	\$2,000,000	
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$7,770,000		
2	CIVIL					
	Site Mitigation -SWPP	4	LS	50,000.00	\$200,000	
	Clearing/Grubbing	4	LS	30,000.00	\$120,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$320,000		
3	Other Infrastructure Costs					
	None					
SUB-TOTAL: OTHER COSTS				\$0		
SUB-TOTAL: INFRASTRUCTURE COSTS				\$8,090,000		
	CONSTRUCTION CONTINGENCY	15%		\$1,213,500		
	CIVIL DESIGN	9%		\$728,100		
	CIVIL DESIGN SUPPORT DURING CONST.	3%		\$242,700		
	S&C DESIGN	3%		\$242,700		
	S&C DESIGN SUPPORT DURING CONST.	2%		\$161,800		
	PROJECT MANAGEMENT	4%		\$323,600		
	CONSTRUCTION MANAGEMENT	8%		\$647,200		
	FLAGGING	6%		\$485,400		
	AGENCY COSTS	10%		\$809,000		
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$4,854,000		
	PROJECT RESERVE/CONTINGENCY	20%		\$2,588,800		
	INFLATION	Rate: 0	# Years	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS				\$15,532,800		

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
 Controlled Siding Converted from Existing Siding -
 Santa Margarita Siding UP Coast Subdivision

Project Name: San Luis Obispo Council of Governments (SLOCOG)
 Coast Corridor Rail Service Study

Design Level: Infrastructure Improvements and High-Level Cost Estimate
 Coast Corridor Rail Service Study Service Improvement Plan

Last Updated: 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES
1	TRACK AND SIGNAL				
	CP - Santa Margarita Siding - MP 229.51 - 232.42	1 LS	3,250,000.00	\$3,250,000	Track 140 (19,015')
	CP - Universal X-Overs at Santa Margarita Siding	1 LS	2,500,000.00	\$2,500,000	2 X-over at MP 230.70-230.78 & 230.79-230.82
	No. 15 POTO	2 EA	400,000.00	\$800,000	Replace Existing No. 14s with No. 15s
	Remove No. 15 Track Element	4 EA	25,000.00	\$100,000	Remove Track & Replace with No. 15 T.O. (X-Overs)
	Remove No. 14 HTTO	2 EA	35,000.00	\$70,000	Santa Margarita (2)
	Remove Existing Intermediate Signals	2 EA	50,000.00	\$100,000	Santa Margarita
	Control Points	3 EA	1,000,000.00	\$3,000,000	
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$9,820,000	
2	CIVIL				
	Site Mitigation -SWPP	4 LS	50,000.00	\$200,000	
	Clearing/Grubbing	4 LS	30,000.00	\$120,000	
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$320,000	
3	Other Infrastructure Costs				
	None				
SUB-TOTAL: OTHER COSTS				\$0	
SUB-TOTAL: INFRASTRUCTURE COSTS				\$10,140,000	
		%			
	CONSTRUCTION CONTINGENCY	15%		\$1,521,000	
	CIVIL DESIGN	9%		\$912,600	
	CIVIL DESIGN SUPPORT DURING CONST.	3%		\$304,200	
	S&C DESIGN	3%		\$304,200	
	S&C DESIGN SUPPORT DURING CONST.	2%		\$202,800	
	PROJECT MANAGEMENT	4%		\$405,600	
	CONSTRUCTION MANAGEMENT	8%		\$811,200	
	FLAGGING	6%		\$608,400	
	AGENCY COSTS	10%		\$1,014,000	
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$6,084,000	
		%			
	PROJECT RESERVE/CONTINGENCY	20%		\$3,244,800	
	INFLATION	Rate: 0 # Years	0.00	TBD	
TOTAL INFRASTRUCTURE PROJECT COSTS				\$19,468,800	

INFRASTRUCTURE PROJECT COST ESTIMATE

Infrastructure Improvement Project
 Centralized Traffic Control and Positive Train Control
 Systems

Project Name: San Luis Obispo Council of Governments (SLOCOG)
 Coast Corridor Rail Service Study

Design Level: Infrastructure Improvements and High-Level Cost Estimate
 Coast Corridor Rail Service Study Service Improvement Plan

Last Updated: 15-Mar-21

ITEM	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST	NOTES
1	Centralized Traffic Control (Upgrade from TWC)				
	Limits				
	MP 113.1 North Salinas (CO 113)				
	MP 233.1 South Santa Margarita (CO 233)				
	Does not include the cost of new Control Points at the five sidings; see individual cost worksheets for those sidings				
	Intermediate Signals	45	300,000.00	\$13,500,000	
2	Positive Train Control				
	Estimate from CRISI Grant Application, stated in 2021 dollars	1	LS	12,000,000.00	\$12,000,000
	Overlay system to CTC; communication backbone				
	Grade crossings not connected to PTC at this phase				
SUB-TOTAL: TRACK AND SIGNAL CONSTRUCTION COSTS				\$25,500,000	
	CIVIL				
SUB-TOTAL: CIVIL CONSTRUCTION COSTS				\$0	
	Other Infrastructure Costs				
	None				
SUB-TOTAL: OTHER COSTS				\$0	
SUB-TOTAL: INFRASTRUCTURE COSTS				\$25,500,000	
		%			
	CONSTRUCTION CONTINGENCY	15%		\$3,825,000	
	CIVIL DESIGN	9%		\$2,295,000	
	CIVIL DESIGN SUPPORT DURING CONST.	3%		\$765,000	
	S&C DESIGN	3%		\$765,000	
	S&C DESIGN SUPPORT DURING CONST.	2%		\$510,000	
	PROJECT MANAGEMENT	4%		\$1,020,000	
	CONSTRUCTION MANAGEMENT	8%		\$2,040,000	
	FLAGGING	6%		\$1,530,000	
	AGENCY COSTS	10%		\$2,550,000	
SUB-TOTAL: PROJECT RELATED OVERHEAD COSTS				\$15,300,000	
		%			
	PROJECT RESERVE/CONTINGENCY	20%		\$8,160,000	
	INFLATION	Rate:	0 # Years	0.00	TBD
TOTAL INFRASTRUCTURE PROJECT COSTS				\$48,960,000	



Task 4.4:
Service Improvement Plan
Appendix C:
Communications and
Engagement Plan

SLOCOG Coast Corridor Rail Service Study

March 26, 2021

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1 Introduction

Due to the regional size and community diversity of the study area, implementation of a comprehensive, strategic communications and public outreach program was essential to understanding needs and creating feasible plans to meet those needs for future rail travel. The Engagement Program focused on development of effective communications tools and strategies to build awareness, understanding and active engagement in the Study. The Program included development and implementation of traditional tools and activities like information materials, survey distribution, blended with digital communications and engagement strategies including social media, media, interactive websites and virtual meetings. A critical component of the Program was the stakeholder engagement which includes two key committees, the Technical Advisory Committee and the Community Working Group. These committees allowed the team to directly engage with community representatives and leaders to foster relationships and share timely information and input at key milestones within the development of the Draft SIP.

2 Property Owner/Stakeholder Database

HDR worked in collaboration with SLOCOG to develop a property owner/stakeholder contact database to ensure all interested parties, specifically those in disadvantaged communities, were appropriately informed of the project. The stakeholder list included diverse regional representatives from business, residential, advocacy, educational, and medical communities. Following are the parameters of the searches, which produced 11,659 parcels:

- 500 ft. of rail line from Paso Robles station to Guadalupe station (5,271 parcels)
- Atascadero: 0.25-mile radius down center of disadvantaged area (540 parcels)
- Paso Robles (west side): 0.25-mile radius down center of disadvantaged area (1,751 parcels)
- Paso Robles (east side): two disadvantaged areas closest to rail line (317 parcels)
- Grover Beach: 0.25-mile radius of rail line (1,384 parcels)
- San Miguel: 0.25-mile radius down center of disadvantaged area (954 parcels)
- Nipomo: 0.25-mile radius of Highway 101 within disadvantaged areas (767 parcels)
- San Luis Obispo: 0.25-mile radius down center of largest disadvantaged cluster (675 parcels)

3 Project Branding & Messaging

A unique Study brand was developed to set the Study apart from other regional planning efforts. The brand complimented the SLOCOG brand and creates consistency in look and feel of all communications and information distributed about the study. The branding also includes clear, concise and consistent messaging.

4 Project-Specific Website

A project-specific website (coastrailstudy.com) has been developed as the main source of information for the public to obtain study updates. This interactive website is linked back to SLOCOG's parent site and provides resources and alerts as well as opportunity to share input. Inquiries and comments submitted through the website are documented and addressed as appropriate.

- **Website Visits:** 5,537 users
- **Average time on site:** 1:55
- **Total sessions by device**
 - Desktop: 48%
 - Mobile: 48%
 - Tablet: 4%
- **Acquisition by channel**
 - Direct: 59%
 - Referral: 18%
 - Via Social: 11%
 - Via Search: 9%
 - Via Emails: 3%

4.1 Fact Sheet

A bilingual fact sheet serves as an effective educational tool, is housed on the website and downloadable for distribution. The fact sheet provides general information about the study background, goals, responsible parties, milestones, funding and how to participate/engage.

4.2 Electronic Notifications

As an additional means to broadly disseminate information and keep the public informed, a project email (info@coastrailstudy.com) is being utilized to communicate with project stakeholders and interested public.

5 Social Media & Media Relations

SLOCOG's existing Facebook account is a critical communication tool for building public awareness and timely notification of Study news and events. As project milestones occur, social media posts are disseminated to SLOCOG's channels. In addition, press releases are distributed to garner input from the adjacent counties.

Two press releases have been distributed to date:

- SLOCOG Awarded \$2.2 Million in Funding to Expand Rail Service on the Central Coast (March 2019)
- New study looks at increasing rail options for the Central Coast (Sept. 2020)

As a result of media coordination, two articles have been published, including:

- New Times: SLOCOG to host virtual meeting on commuter rail transit study (Sept. 2020)
- Paso Robles Daily News: New study looks at increasing rail options for the Central Coast (Sept. 2020)

6 Survey

An online survey was conducted from mid-June to early-October 2020 through SurveyMonkey to gather demographics and public input into the study options. A total of 451 participants completed the survey and one lucky participant won a \$100 Amazon gift card. Below is a breakdown of top results:

Table 6-1. Survey Results

Question	Results																		
Location	<table border="1"> <thead> <tr> <th></th> <th>Home</th> <th>Work/School</th> </tr> </thead> <tbody> <tr> <td>SLO County</td> <td>377</td> <td>365</td> </tr> <tr> <td>Santa Barbara County</td> <td>29</td> <td>29</td> </tr> <tr> <td>Santa Cruz County</td> <td>7</td> <td>6</td> </tr> <tr> <td>Monterey County</td> <td>11</td> <td>13</td> </tr> <tr> <td>Other/Out of State</td> <td>27</td> <td>38</td> </tr> </tbody> </table>		Home	Work/School	SLO County	377	365	Santa Barbara County	29	29	Santa Cruz County	7	6	Monterey County	11	13	Other/Out of State	27	38
	Home	Work/School																	
SLO County	377	365																	
Santa Barbara County	29	29																	
Santa Cruz County	7	6																	
Monterey County	11	13																	
Other/Out of State	27	38																	
Age	65+ (14%) 50-64 (30%) 40-49 (15%) 25-39 (22%) 18-24 (4%) N/A (15%)																		
Gender	Female (47%) Male (37%) N/A (16%)																		
Most desirable station	SLO (32%) Paso Robles (21%) Grover Beach (16%) Atascadero (15%) Santa Maria (12%) Guadalupe (4%)																		
Reasons for using public transit	Carbon footprint (17%) Stress relief (13%) Inexpensive option (11%) Accessible (11%)																		
Commuter stats (would consider using if...)	Bi-directional (40%) Connected between Paso Robles and SLO (38%) Linked Santa Maria, Guadalupe to SLO (22%)																		
Intercity Rail Stats	Would consider if direct connect between SF & SLO (55%) More trains daily to SoCal (53%) Travel on train took less time (50%) More trains daily to Bay Area (46%)																		

7 Stakeholder & Public Meetings

7.1 Board Meeting

The study team presented to the SLOCOG Board at their December 2, 2020 meeting (item A-1 Coast Rail Corridor Study Update). The presentation included:

- Overview of the Study (study area map, goals, and implementation strategy)
- Engagement, Analysis Activities and Key Milestones
- Initial Range of Options (Intercity Rail/Bus)
- Initial Range of Options (Commuter Rail)
- Modeling Analysis

7.2 Coast Rail Coordinating Council (CRCC)

The Study was also presented to the CRCC twice on July 17, 2020 and March 19, 2020.

7.3 Technical Advisory Committee (TAC)

The Technical Advisory Committee was established to create timely and direct engagement with critical partners on the development of the SIP. The TAC has met virtually a total of three times on July 29, 2020, December 17, 2020 and March 4, 2021 and consists of representatives from the following agencies:

- California State Transportation Agency (CalSTA)
- Caltrain
- Caltrans District 5
- Caltrans Division of Rail and Mass Transportation (DRMT)
- Cities of Grover Beach, King, Paso Robles, San Luis Obispo, and Santa Maria
- Coast Rail Coordinating Council (CRCC)
- Guadalupe Transit
- LOMPOC Transit
- LOSSAN Rail Corridor Agency
- Monterey-Salinas Transit (MST)
- San Luis Obispo Council of Governments (SLOCOG)
- Santa Barbara County Association of Governments (SBCAG)
- Santa Barbara Metropolitan Transit District (MTD)
- Santa Maria Valley Railroad (SMVRR)
- SLO Regional Rideshare
- SLO Regional Transportation Authority (RTA)
- SLO Transit
- Transportation Agency of Monterey County (TAMC)
- Union Pacific Railroad (UPRR)

7.4 Community Working Group (CWG)

The Community Working Group was developed to directly engage with diverse community-based representatives at key milestones and has met virtually twice to date (July 29, 2020 and December 16, 2020) with a third and final meeting scheduled for April 20, 2021. The CWG consists of representatives from the following community groups and organizations:

- Atascadero State Hospital
- Atascadero Chamber of Commerce
- BikeSLO County
- California Polytechnic State University
- City of SLO Bicycle Advisory Committee
- Coalition for Sustainable Transportation (COAST)
- Coalition of Labor Agriculture & Business of San Luis Obispo County (COLAB)
- Community Action Partnership of San Luis Obispo (CAPSLO)
- Economic Vitality Corporation (EVC)
- Environmental Center of San Luis Obispo (ECOSLO)
- Friends of 40 Prado
- Healthy Communities Work Group
- Home Builders Association of the Central Coast

- Hourglass Project/REACH
- Land Conservancy of SLO County
- San Luis Obispo Council of Commerce
- San Luis Obispo Council of Governments (SLOCOG)
- Santa Barbara Bicycle Coalition
- Santa Barbara County Association of Governments (SBCAG)
- Santa Maria Valley Chamber of Commerce
- SLO Bike Coalition
- SLO County Air Pollution Control District (APCD)
- SLO County Commission on Aging
- SLO Railroad Museum
- SLO Regional Rideshare
- South County Chambers of Commerce
- U.S. Representative Salud Carbajal's Office
- Visit SLOCal

Also invited to participate include:

- Community Foundation
- County Real Property Services
- Cuesta College
- Downtown SLO
- Go831 Smart Commute Rideshare Program
- Healthy Eating Active Living SLO (HEALSLO)
- IQMS
- Latino Outreach Council
- National Association for the Advancement of Colored People (NAACP)
- Northern Chumash Tribal Council
- Paso Robles Chamber of Commerce
- San Luis Obispo Regional Transit Authority (SLO RTA)
- SLO Farm Bureau
- The Nature Conservancy

7.5 Virtual Public Meeting

An initial public meeting was conducted virtually via Webex on Sept. 30, 2020 from 5:30-7 p.m. The meeting was intended to build awareness about the study and seek initial input from the larger public. To promote the meeting a postcard invitation was mailed to the contact database, promoted on the website, via social media and media as well as through electronic emails. A total of 42 participants attended the meeting, including project team staff and consultants.

The meeting was recorded and available on the website along with the presentation. A second public meeting will occur in late spring/early summer to present the draft SIP and Passenger Rail Improvements Study (PRIS or Commuter Rail Study).

SLOCOG
SAN LUIS OBISPO COUNCIL OF GOVERNMENTS

CRCC
COAST RAIL COORDINATING COUNCIL

COAST RAIL
CORRIDOR STUDY

YOU'RE INVITED TO A VIRTUAL PUBLIC MEETING!

The San Luis Obispo Council of Governments (SLOCOG) is conducting an important study to plan for the future of rail on the Central Coast. The Coast Rail Corridor Study will analyze intercity rail and bus connectivity and the feasibility of implementing regional rail service. **YOUR PERSPECTIVE MATTERS** - help us enhance train travel for Central Coast residents and visitors by participating in our meeting!

REGISTER TO ATTEND!
For your convenience and to allow participation in a safe environment while social distancing, SLOCOG is hosting a virtual public meeting. Please join us and share your input directly with the project team.

Wednesday, Sept. 30, 2020 | 5:30-7 p.m.
Register at:
bit.ly/SLOCOG_CRCS_Public_Meeting
(note: meeting link is case sensitive)
Dial-In: 408-418-9388 | Code: 146 335 8086