



Task 5.1:

Comparison of Comparable Commuter Rail Corridors

SLOCOG Coast Corridor Rail Service Study

June 15, 2020



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Introduction

The San Luis Obispo Council of Governments (SLOCOG), in cooperation with its partner agencies, is conducting the Coast Corridor Rail Service Study for improving rail and transit connectivity and frequency through the Central Coast area. This is a two-pronged study which will ultimately produce two integrated reports – the Service Implementation Plan (SIP) and the Passenger Rail Improvement Study (PRIS). The goal of the SIP is to develop an integrated plan for providing the potential expanded rail and transit frequencies through the Central Coast area as outlined in the 2018 California State Rail Plan (CSRP). The goal of the PRIS is to develop a phased implementation plan for commuter rail in the greater San Luis Obispo County area.

The purpose of this memorandum is to identify real-world points of comparison for evaluating the costs and benefits of commuter rail service options in the San Luis Obispo area. This memo identifies a number of commuter rail corridors in California and around the country that have similarities in demographic and geographic characteristics to the San Luis Obispo area, and compares those corridors to each other and to the SLO area in terms of demographics, corridor physical characteristics, corridor commuting characteristics, and rail service characteristics.

The corridors that were selected for this analysis have currently operating commuter rail type service that runs on freight rail tracks using either locomotive-hauled coaches (LHC) or diesel multiple units (DMU). Three corridors in various stages of development (but not yet in operation) were also included because they have similar characteristics to the SLO corridor. The metropolitan areas served by most of the corridors are under one total million population, though a few of the corridors serve regions or counties that are adjacent to larger metro areas; these were included because they have similar geographic and service characteristics to the SLO corridor.

The nine systems analyzed include six existing operations, and are as follows:

- Sonoma-Marín Area Rail Transit (SMART) (Sonoma and Marin Counties, California)
- Redlands Passenger Rail Project (RPRP, known as the Arrow Service) – under construction (San Bernardino County, California)
- North County Transit District (NCTD) Sprinter (North San Diego County, California)
- A-Train (Denton County, Texas, north of Dallas)
- New Mexico Rail Runner Express (Albuquerque/Santa Fe, New Mexico)
- Music City Star (Nashville area, Tennessee)
- SunRail (Orlando area, Florida)
- Triangle Commuter Rail (Raleigh-Durham area, North Carolina) – under study
- Treasure Valley High Capacity Corridor (Boise area, Idaho) – under study

For each corridor, the following data were obtained and the results are presented in the table on the next two pages. The analysis on subsequent pages highlights the key findings in each of the five subject areas.

Corridor Physical Characteristics	Demographics	Corridor Commuting Characteristics	Rail Service Characteristics	Governance
<ul style="list-style-type: none"> • Length of corridor • Primary corridor city • Proximity to another major urban area 	<ul style="list-style-type: none"> • Population: <ul style="list-style-type: none"> ○ County ○ Main terminus city ○ Key corridor cities ○ Corridor total • Proximity to another major urban area 	<ul style="list-style-type: none"> • Rail travel time • Highway free-flow travel time • Highway peak hour travel time • Connecting rail/transit to adjacent urban area 	<ul style="list-style-type: none"> • Rail service status • Service type, vehicles • Ridership • Trains per day • Operating costs • Vehicle revenue hours 	Responsibility for: <ul style="list-style-type: none"> • Management • Operations

Corridor	Length of Corridor (miles)	Counties	Population	Main Terminus City			Other Key Cities in Corridor	Population	Est. Total Corridor Population	Service Status	Governance
				Name	State	Population					
Santa Maria-SLO	32	SLO	280,000	SLO	CA	47,000	Santa Maria Arroyo Grande	107,000 18,000	240,000	Existing long distance and intercity rail only (3 round trips/day)	
Paso Robles-SLO	30	SLO	280,000	SLO	CA	47,000	Paso Robles Atascadero	31,000 30,000	110,000	Existing long distance rail only (1 round trip/day)	
Sonoma-Marin (SMART)	46	Sonoma Marin	500,000 260,000	San Rafael Larkspur	CA	59,000 12,300	Santa Rosa Petaluma Novato	175,000 60,000 55,000	400,000	Service initiated Aug-2017 Santa Rosa to San Rafael; extended to Larkspur Dec-2019	The Sonoma-Marin Area Rail Transit (SMART) District (comprised of representatives from the various cities) is responsible for train operations and maintenance.
Redlands-San Bernardino (RPRP)	9	San Bernardino	2,180,000	San Bernardino	CA	216,000	Redlands Loma Linda	72,000 24,000	250,000	Opening scheduled for 2022	
Oceanside - Escondido (NCTD Sprinter)	22	San Diego	3,338,000	Oceanside	CA	176,000	Vista San Marcos Escondido	101,000 97,000 152,000	500,000	Service initiated Sep-2008	NCTD contracts with Bombardier Transportation to operate the Sprinter service. Bombardier operates the trains and maintains the equipment, track, signals, and facilities.
A-train	21	Denton Dallas	887,000 2,636,000	Lewisville	TX	107,000	Denton Carrollton	139,000 137,000	400,000	Launched in June 2011	DCTA contracts with First Transit to carry out rail operations and maintenance, and maintenance of way.
New Mexico Rail Runner Express	97	Valencia Benarillo Sandoval Santa Fe	77,000 679,000 147,000 150,000	Belen Santa Fe	NM	7,000 84,000	Albuquerque	560,000	700,000	Opened in phases between 2006-2008	Rio Metro is responsible for operating the Rail Runner on behalf of New Mexico DOT. Rio Metro contracts with Herzog Transit Services to carry out train operations and maintenance, and maintenance of way.
Music City Star	32	Davidson Wilson	693,000 145,000	Nashville	TN	693,000	Lebanon Mt Juliet	35,000 36,000	650,000	Service began in 2006	The Tennessee Regional Transportation Authority (RTA) oversees operation of the Music City Star. RTA contracts with Transit Solutions Group for train operations.
SunRail	49	Volusia Seminole Orange Osceola	553,000 472,000 1,393,000 376,000	Sanford Kissimmee	FL	60,000 74,000	Orlando	286,000	600,000	Service began in May 2014 for 32 mile corridor with 17 mile extension in 2018	The Central Florida Commuter Rail Commission (CFCRC) (comprised of elected leaders from the local funding partners) acts in an advisory capacity to the Florida DOT, which is responsible for all operations and maintenance for the first 7 years of operation. CFCRC will take over all SunRail responsibilities after 7 years. FDOT/CFCRC contracts with Bombardier for operations and maintenance, and with Herzog for signal maintenance of way.
Proposed Commuter Rail Systems being Studied											
Triangle commuter rail	37	Durham Orange Wake	321,000 148,000 1,112,000	Raleigh	NC	469,000	Cary Durham	168,000 274,000	950,000	Proposed commuter rail on ROW owned by North Carolina Railroad Company. Amtrak, Norfolk Southern and CSX currently operate on the corridor. An exploratory study was completed in May 2019. Further study is under way to identify infrastructure improvements needed and develop detailed cost estimates and ridership forecasts	
Treasure Valley High Capacity Corridor	~29	Ada Canyon	482,000 230,000	Boise	ID	229,000	Caldwell Meridian	57,000 107,000	400,000	A High Capacity Transit Study was completed in 2009, with commuter rail on the Boise Cutoff as one of 14 mode/route alternatives and one of 6 recommended for further study. The regional planning agency (COMPASS) is currently updating this study as part of its long range transportation plan update. Study completion is expected in Summer 2020.	

Corridor Physical Characteristics

Length of corridor

- Most of the corridors are between 20-50 miles in length, with the exceptions being Redlands Rail (nine miles) and New Mexico Rail Runner (97 miles). For comparison, the length of a Santa Maria-SLO corridor would be 32 miles, a Paso Robles-SLO corridor would be 30 miles, and a Santa Maria-Paso Robles corridor would be 62 miles.

Location of primary corridor city

- In most cases, the primary corridor city is located at one terminus of the rail corridor. The exceptions are in Sonoma-Marín where the largest corridor city (Santa Rosa) is located toward the northern end of the corridor, in Florida where the largest city (Orlando) is located near the middle of the SunRail corridor, and in New Mexico where the largest city (Albuquerque) is located in the southern half of the corridor. So there is precedent for a corridor like Santa Maria-Paso Robles where the main commuting destination would be in the middle of the corridor.

Proximity to another major urban area

- Several of the studied rail corridors lie near the edge of a major metropolitan area that is outside the corridor's service area. For example, Sonoma and Marin Counties lie north of San Francisco, San Bernardino County lies east of Los Angeles, Oceanside-Escondido is in the suburban northern part of San Diego County, and Denton County is north of Dallas, Texas. In this respect the SLO area is more like the Nashville and Orlando areas which do not have a larger urban area nearby.

Demographics

Primary city population

- The population of the primary city in the nine studied corridors varies significantly – three of the primary cities are between 100,000-200,000 population, three are between 200,000-300,000, and three are over 300,000. For comparison, SLO itself has a population of 47,000 and the largest population city is Santa Maria with 107,000.

Estimated corridor population

- Most of the studied corridors include a total population between 400,000-950,000, with the lone exception being Redlands-San Bernardino with a corridor population of about 250,000 along its nine-mile length. For comparison, the Santa Maria-SLO corridor contains about 240,000 people and the Paso Robles-SLO corridor contains about 110,000.

Proximity to another major urban area

- The corridors with the smaller populations (500,000 and under) are all close to another major urban area (with the exception of Boise, which does not have an existing commuter rail service).

Corridor Commuting Characteristics

Commuting time through the corridor

- Free-flow driving times through the corridors are commensurate with their length, ranging from 12 minutes between Redlands-San Bernardino to almost 90 minutes between Santa Fe-Belen, New Mexico.

Highway congestion

- All of the parallel highway corridors experience traffic congestion during peak commute hours, so driving time during commute hours usually exceeds the free-flow driving time.

Rail travel times

- Travel times on the existing commuter rail services are generally competitive with the congested travel times on the parallel highway.

Terminus connection to another major urban area

- For the corridors which are near another major urban area, there is another rail/transit service available at the corridor terminus to take passengers into the urban area.

Rail Service Characteristics

Technology/rail equipment

- Of the six systems currently in operation, three use DMU technology and three use LHC technology. The Redlands Rail project will open in 2022 with DMU vehicles but is in the process of procuring clean-fuel hydrogen-electric multiple units to put into service in 2024.

Duration and frequency of service

- Four of the six existing systems operate trains throughout the day in both directions of travel, with the total number of train trips ranging from 38 to 64 over the course of a typical weekday. Two systems (in New Mexico and Nashville) operate almost exclusively during peak hours, with daily totals of 22 and 12 trains, respectively.

Ridership

- Total annual ridership (2019) for the six systems ranges from 292,500 for the A-Train (Denton County, TX) to 2,475,800 for NCTD Sprinter (North San Diego County).

Operating cost and service hours

- Annual operating costs range from \$4.5M (Nashville) to \$35M (SunRail). The number of service hours provided annually ranges from 7,800 (Nashville) to 44,000 (Sonoma-Marin).

Average operating cost per passenger and per revenue hour

- The average cost per passenger ranges from about \$8.00 (NCTD Sprinter) to \$42.80 (New Mexico) and the average cost per revenue hour ranges from \$544 (SMART) to \$1,461 (SunRail).

Governance

Management

- For all six operating systems, a transit authority or commission is responsible for management and oversight.

Operations

- For five of the six operating systems the managing authorities contract with private companies to operate and maintain the service. The lone exception is in Sonoma-Marín where the SMART District is responsible for managing and operating the system.