

TRANSPORTATION SYSTEM

# PASSENGER RAIL

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS



TECHNICAL REPORT

ADOPTED ON SEPTEMBER 3, 2020

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## TECHNICAL REPORT

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# Passenger Rail

### EXECUTIVE SUMMARY

This Connect SoCal Passenger Rail report lays out a vision of passenger rail services for the SCAG Region for the next three decades. It demonstrates the progress that has been made over the last two decades in terms of growing ridership, new rail services, capital improvements and new funding opportunities. It demonstrates the regional importance and significance of passenger rail in the SCAG region, and why growing rail services by increasing frequencies in underserved corridors, as well as establishing service in unserved markets, is crucial to the future mobility and sustainability of our region.

The report highlights recent success in establishing new funding opportunities for passenger rail, including the Transit and Intercity Rail Capital Program (TIRCP) and Senate Bill (SB) 1. Amtrak's Pacific Surfliner intercity rail service is benefiting from these new funding opportunities as well as recent institutional arrangements that establish local control for the service. The Southern California Regional Rail Authority's (SCRRA) Southern California Optimized Rail Expansion (SCORE) program is an ambitious long-term capital improvement program to increase service on most of its lines to 15- and 30-minute frequencies, and SCRRA was recently awarded nearly one billion dollars in TIRCP funds for initial improvements.

Finally, the report takes a look at existing conditions; a needs assessment which discusses, among other things, capacity constraints and opportunities for improved connectivity, including rail access to the region's airports; and rail projects in the pipeline, both under construction and unfunded strategic long-term projects.

## INTRODUCTION

### VISION AND PURPOSE

The Connect SoCal vision for passenger rail in the SCAG region consists of four main elements:

**Grow Ridership** – While over the past two decades ridership on commuter and intercity rail services has steadily grown, there is still tremendous potential to grow ridership significantly in the region.

**Provide More Frequent and New Services** – Providing more frequent rail service will attract new riders to passenger rail. Currently, commuter rail service in Southern California is much less frequent than commuter rail services elsewhere in the nation, like Chicago and New York City. Also, there are several unserved passenger rail markets that would greatly benefit from the establishment of new rail service.

**Improve Connectivity** – While progress has been made in connecting passenger rail services to existing transit services in our region, more needs to be done to coordinate schedules and connections. Also, more progress needs to be made in first/last mile connections to rail stations, and station area planning and transit-oriented development (TOD).

**Secure Funding** – New funding opportunities have been created since the 2016 RTP/SCS which have resulted in recent capital funding awards, including a dedicated operational funding source at the state level for the first time. However, passenger rail funding in the region is still incremental in nature, and to grow ridership by virtue of increased service levels, more state and federal long-term financing needs to be programmed.

### ORGANIZATION OF THE REPORT

This report is organized in to several sections, beginning with sections on passenger rail's regional significance and its regulatory framework, followed by the report's analytical approach and existing conditions, then concludes with strategies and recommendations, and future rail projects and initiatives and

their state of implementation readiness.

### LINK TO MAIN BOOK AND OTHER REPORTS

In addition to this report, passenger rail is discussed in Chapters 2, 3, 5, and 6 in Connect SoCal's main document. Freight rail and intermodal operations are discussed in detail in the Goods Movement Technical Report.

## REGIONAL SIGNIFICANCE

### IMPORTANCE TO THE REGIONAL TRANSPORTATION SYSTEM

The SCAG region is served by an extensive rail network, including intercity, commuter and freight services, that is progressively expanding and improving in terms of capacity, efficiency and safety for its passenger rail and freight operations. Southern California and the nation are undeniably experiencing a rail renaissance and many capital, operational and safety improvements are underway and planned along this existing network and for corridors currently not served by rail.

The two passenger rail systems in the SCAG region, the Amtrak Pacific Surfliner and the Metrolink Commuter Rail services, form an extensive network. The Pacific Surfliner serves a 351-mile-long corridor connecting San Luis Obispo, Los Angeles and San Diego paralleling the U.S. 101 and I-5 freeways in the SCAG region. Metrolink operates 173 daily trains on seven different lines on 538 route miles also paralleling many of the region's freeways. Many of the stations of these two systems serve major urban centers and historical downtowns. The region's many transit services connect to these rail stations, and many first/last mile planning efforts are underway to increase station accessibility.

There is great potential for passenger rail to significantly decrease Vehicle Miles Travelled (VMT) by taking single-occupant vehicles (SOVs) off the road since these services mostly run along the region's freeways. With increases in service levels, passenger rail will provide a greater incentive for the region's travelers

to choose multi-modal services for their trip making, thereby decreasing congestion, increasing mobility and promoting sustainability.

## RAIL AND SUSTAINABILITY

Passenger rail reduces SOV trips, thereby significantly reducing VMT, air pollution and GHG emissions. In the SCAG region, and throughout California and the nation, passenger rail boardings are generally increasing year over year, as discussed in the Existing Conditions section of this report. As more capital improvements are implemented, speed and service levels will increase and at the same time an increasing population and travel demand will cause our capacity-constrained freeways, highways and airports to become more congested.

Climate change planning should be incorporated into our region's rail planning and asset management efforts. While our region does not have the same topographical vulnerabilities to flooding as the East Coast, much of our rail system, especially the LOSSAN Corridor, runs along the coast on sandstone bluffs that could be significantly affected by erosion from sea level rise. Also, excessive heat can cause rail buckling, and there are forecasts for significantly higher numbers of days with highs over 95 degrees. This high heat can also cause problems for air conditioning units on passenger cars.

## RAIL AND LAND USE

Rail investment and the economic investment returns it brings are well established and documented. Many passenger rail stations in our region have seen significant transit-oriented development (TOD), and many stations have TOD projects under development. As speed and service levels grow on our existing system, as well as congestion on our roadways, TOD will become all the more attractive for our residents. With the delivery of California High-Speed Rail (CA HSR), station area planning and its TOD potential could reach a new level in terms of investment and attractiveness.

In 2018, SCAG partnered with five cities to develop high-quality transit area (HQTAs) Vision Plans. These five cities include El Monte, Oxnard, Riverside, San

Bernardino and Santa Clarita. The Vision Plans identified active transportation improvements, redevelopment strategies, and implementation plans that enable cities to fully realize transportation investments in their city, and also pursue regional and state funding opportunities and technical support. The overall goal of the vision plans is to develop plans that reduce GHGs and VMTs. HQTAs are discussed in greater detail in Chapter 3 of Connect SoCal and in the Sustainable Communities Strategy Technical Report.

While there is no doubt that rail stations spur economic development and TOD, it is critical that multi-modal connectivity exist at these stations. This includes transit and first/last mile facilities. As noted earlier, currently there are varying levels of connectivity to our existing rail stations. Current and future rail stations should provide timed transit schedules to arriving and departing trains, so that passengers have ample time to make the connection. Local, express and BRT/BRT Light transit should connect with rail where appropriate. Rail stations should also have bike share and other active transportation facilities for those who wish to access the stations by biking and walking.

## REGULATORY FRAMEWORK

### DEFINITIONS

Commuter rail passenger transportation is defined in 49 U.S.C Section 24102 as short-haul rail passenger transportation in metropolitan and suburban areas usually having reduced fare, multiple-ride, and commuter tickets and morning and evening peak period operations. For reporting purposes, commuter rail service is defined by the National Transit Database (NTD) as an electric or diesel propelled railway for urban passenger train service consisting of local travel which operates between a central city and outlying areas. Service must be operated on a regular basis by or under contract with a transit operator for the purpose of transporting passengers within urbanized areas (UZAs), or between urbanized areas and outlying areas. Commuter rail is generally characterized by multi-trip tickets, specific station-to-station fares, railroad employment practices, relatively long distance between stops, and only 1-2 stations in the central business district.

Intercity passenger rail service is defined in 49 U.S.C. Section 24102 as rail passenger transportation, except commuter rail passenger transportation. The Passenger Rail Investment and Improvement Act (PRIIA) of 2005 further clarifies that intercity passenger rail service means transportation services with the primary purpose of passenger transportation between towns, cities and metropolitan areas by rail, including high-speed rail.

The Federal Code of Regulations (49 CFR 238.5), identifies three tiers of passenger rail operations, as follows:

- Tier I means operating at speeds not exceeding 125 mph;
- Tier II means operating at speeds exceeding 125 mph but not exceeding 160 mph; and
- Tier III means operating in a shared right-of-way at speeds not exceeding 125 mph and in an exclusive right-of-way without grade crossings at speeds exceeding 125 mph but not exceeding 220 mph.

## FEDERAL

The Federal Railroad Administration (FRA) is an agency in the United States Department of Transportation (DOT), created by the Department of Transportation Act of 1966. The purpose of FRA is to promulgate and enforce rail safety regulations, administer railroad assistance programs, conduct research and development in support of improved railroad safety and national rail transportation policy, provide for the rehabilitation of Northeast Corridor rail passenger service, and consolidate government support of rail transportation activities. All passenger and freight rail travel in the United States on the national interconnected rail infrastructure is subject to regulation by the FRA. FRA regulates public and intercity rail services, but does not regulate “closed” railways that operate exclusively on private property, such as a rail system between buildings at a steel mill, nor does it regulate subways, light rail or elevated intra-city passenger rail systems that do not connect to any public rail networks. Most notably, the FRA enforces safety regulations, such as speed limits and requirements for safety features such as positive train control (PTC).

The Fixing America’s Surface Transportation (FAST) Act requires metropolitan

planning organizations (MPOs) to include private providers of transportation, including intercity bus operators, in the metropolitan transportation planning process. SCAG must provide these interested parties with reasonable opportunities to comment on the Draft 2020 Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Intercity bus operators are an important component of passenger rail as their route networks act as an extension of the passenger rail network, as well as feeding in to it.

## STATE

The Caltrans Division of Rail and Mass Transportation (DRMT) is responsible for:

- Administering and managing state and federal transit and rail grant programs that provide funding for operating assistance, capital improvements and equipment to California’s public transportation agencies.
- Planning and developing intercity rail capital projects and highway/ railroad crossing improvements.
- Developing the California State Rail Plan and the Statewide Transit Strategic Plan to strategically plan, support, and coordinate California’s rail and mass transportation system.
- Coordinating and planning California’s rail, transit and high-speed rail network integration efforts.

In addition to providing funding, planning, coordination, budgeting, and administrative support, the DRMT develops, procures and manages state owned rail equipment and facilities for the three state-supported intercity passenger rail routes in California administered by their respective joint powers authorities (JPAs). These are:

- The LOSSAN Rail Corridor Agency (LOSSAN Agency) for the Pacific Surfliner,
- The San Joaquin Joint Powers Authority (SJJPA) for the San Joaquin, and
- The Capitol Corridor Joint Powers Authority (CCJPA) for

the Capitol Corridor.

This passenger rail technical report incorporates goals, objectives and policies of the California Transportation Plan 2040 (CTP 2040), which is a statewide policy plan designed to meet California's future transportation needs and to support achieving a statewide reduction in greenhouse gas emissions 80 percent below 1990 levels by 2050. It envisions a fully integrated, multimodal, and sustainable transportation system. It also incorporates goals, objectives and policies of the 2018 California State Rail Plan. The Rail Plan identifies operating and capital investment strategies that will lead to a coordinated, statewide travel system. It proposes a unified statewide rail network that better integrates passenger and freight service, connects passenger rail to other transportation modes, and supports smart mobility. The statewide system described in the Rail Plan's 2040 Vision is projected to carry more than 1.3 million daily trips by 2040.

## REGIONAL

Metrolink is governed by the Southern California Regional Rail Authority (SCRRA), a JPA made up of an 11-member board representing the transportation commissions of Los Angeles, Orange, Riverside, San Bernardino and Ventura counties. Metrolink trains operate on seven routes across a six-county, 538 route-mile network, which includes a portion of northern San Diego County.

The LOSSAN Rail Corridor Agency is a JPA that was formed in 1989 by stakeholders along its corridor in order to increase ridership, revenue, train capacity, reliability and safety on the corridor between Los Angeles Union Station and San Diego. In 2002, the agency expanded to include the entire Pacific Surfliner corridor north to San Luis Obispo. The agency is governed by a Board of Directors and member agencies include:

- San Luis Obispo Council of Governments (SLOCOG)
- Santa Barbara County Association of Governments (SBCAG)
- Ventura County Transportation Commission (VCTC)
- Los Angeles County Metropolitan Transportation Authority (Metro)

- Orange County Transportation Authority (OCTA)
- Riverside County Transportation Commission (RCTC)
- North County Transit District (NCTD)
- San Diego Association of Governments (SANDAG)
- San Diego Metropolitan Transit System (MTS)
- California Department of Transportation Division of Rail and Mass Transportation (DRMT) (ex-officio)
- Southern California Association of Governments (SCAG) (ex-officio)
- Amtrak (ex-officio)
- California High-Speed Rail Authority (CHSRA) (ex-officio)

## ANALYTICAL APPROACH

### MODELING APPROACH AND RIDERSHIP FORECASTING

2020 Connect SoCal forecasts commuter rail ridership in the region over time through the 2045 horizon with forecasted growth in population and employment. The full buildout of the Metrolink SCORE program is assumed in the year 2035.

The Plan also forecasts ridership for the CA HSR project, which is scheduled to begin revenue service in the SCAG region in 2033 consistent with the CHSRA 2018 Business Plan, and includes CHSRA bookend capital investments to the LOSSAN and Metrolink corridors. The Phase 1 system will provide HSR service between downtown San Francisco and Anaheim via downtown Los Angeles Union Station.

### METROLINK SCORE

The SCORE program expands capacity of the entire Metrolink system to accommodate service that is more regular and frequent, throughout the entire

service day (from morning to late evening). Capital investments for SCORE include additional track (e.g., sidings, double track, triple track and quadruple track segments), improved signaling, expanded and lower emissions fleet, upgraded and enlarged maintenance facilities, grade crossing treatments and separations, fencing and safety features, features to support readiness for quiet zones, and required asset rehabilitation to sustain capacity. With the Link US project (please see page 17), SCORE will transform regional rail, by providing through service at Union Station. In addition to the benefits to regional rail, capital investments will also benefit intercity rail and freight rail systems throughout the entire Southern California region.

## LOSSAN STRATEGIC IMPLEMENTATION PLAN

The LOSSAN Corridor-wide Strategic Implementation Plan lays out a long-range vision of customer and capital improvements in the LOSSAN Corridor to increase speed and quality of service. Since its adoption in 2012, the Pacific Surfliner has come under local control by the LOSSAN Agency and the LOSSAN JPA member agencies, and the LOSSAN Agency produces a business plan every two years. The latest LOSSAN Rail Corridor Agency Business Plan FY 2018-19 to FY 2019-20 highlights several significant strategies for improvement. They are:

- Train Monitoring
- Train and Connecting Bus Schedule Adjustments
- Improved Connectivity with Local Transit Services
- Equipment and Crew Utilization
- Response to Service Disruptions
- Service Planning

The Business Plan also calls for capital improvements along the LOSSAN Corridor to provide more service, including 13 daily round trips between Los Angeles and San Diego, six round trips between Goleta and Los Angeles and three round trips between San Luis Obispo and Los Angeles.

## CHSRA 2018 BUSINESS PLAN

The CHSRA 2018 Business Plan updated the progress of the CA HSR project from the prior 2016 plan. CHSRA is required to produce a business plan every two years, and this plan recognized the current funding and construction realities facing the project. In the 2018 plan, CHSRA redefined the “Central Valley to Silicon Valley” initial operating segment (IOS) from Poplar Avenue north of Bakersfield to San Jose to downtown Bakersfield to San Francisco. This plan called for the IOS to cost \$29.5 billion and begin operation in 2029. The full Phase 1 project would cost \$77.3 billion and begin service in 2033.

## PRIVATE PROVIDERS OF TRANSPORTATION

As noted above in the Regulatory Framework section, SCAG is required under new FAST Act regulations to include private providers of transportation in the metropolitan planning process. SCAG has reached out to private providers, including intercity bus operators, to become involved in this process. There are many benefits of establishing a dialogue with these private providers including:

- Identifying gaps in service between public and private operators
- Improving transportation connectivity and coordination between public and private operators
- Learning about new and future transit facilities
- Identifying and improving first/last mile opportunities
- Sharing mutually beneficial data

There are some significant gaps in service in our region between public and private transportation providers. Most notably, an eight-block gap exists where there is no connecting public transit service between the Los Angeles Greyhound Station, one of the busiest bus stations in the nation, and Los Angeles Union Station. Cooperation in planning efforts between the public and private providers may result in important benefits for the traveling public.



## UNSERVED MARKETS

Progress in implementing rail service in unserved markets, including underserved markets, will reduce VMTs, congestion, air pollution and GHG emissions. This is a strategy of 2020 Connect SoCal to increase mobility and sustainability. Unserved and underserved markets are discussed in detail in the Needs Assessment section of this report.

## CONNECTIVITY AND GAPS IN SERVICE

Progress in connecting gap closures is another strategy of 2020 Connect SoCal. There are several significant transit and rail connectivity gaps in our region. One to highlight is the gap between the Metro Green Line Norwalk Station and the Norwalk/Santa Fe Springs Metrolink Station. The Metrolink station is on the LOSSAN Corridor, one of the busiest rail corridors in the nation serving the Metrolink Orange County and 91/Perris Valley Lines, and the Amtrak Pacific Surfliner, which is the second busiest Amtrak corridor behind the Northeast Corridor. Yet, the Metro Green Line ends just two miles to the west. The Metrolink station is also a possible future station location for CA HSR. This connectivity gap will become even more pronounced once the LAX Automated People Mover connects with the Green and Crenshaw Lines in 2023.

Another significant connectivity gap is between the Metro Orange Line in North Hollywood and the Metro Gold Line in Pasadena. Progress is being made with this connectivity gap as Metro is planning a bus rapid transit (BRT) service. This future BRT service could connect multiple Metrolink stations in Burbank and, at some point in the future, an additional station serving California High Speed Rail. This gap closure would provide residents of the San Fernando Valley, Burbank, Glendale and Pasadena a direct connection with the CA HSR and airport service at Hollywood Burbank Airport and also greatly increase inter-modal connectivity and mobility in the corridor.

## EXISTING CONDITIONS

### INFRASTRUCTURE

There are two main passenger rail operators and two main freight rail operators in the SCAG region. The two passenger rail operators are Amtrak and the SCRRA. Amtrak operates intercity rail via its Pacific Surfliner, the second highest ridership line in its national network; and via its three long distance services: the Coast Starlight, the Southwest Chief, and the Sunset Limited. SCRRA operates commuter rail, branded “Metrolink,” on seven lines operating in five of our region’s six counties along 536 miles of track, and connects with San Diego County’s commuter rail service in Oceanside, which is branded “Coaster.”

The two main freight operators are the Burlington Northern Santa Fe (BNSF) and Union Pacific (UP) railroads that operate on extensive local and transcontinental networks, and which serve the Long Beach and Los Angeles port complex, which is by far the nation’s largest and a huge economic anchor of our region. In addition to the port complex, there are numerous intermodal rail yards in the SCAG region. Please see the Goods Movement Appendix for more information on freight railroads in the port complex.

In the future, the CHSRA will bring CA HSR service to the SCAG region, and is currently constructing its first 119 miles of HSR track in the San Joaquin Valley. CHSRA has produced several alternatives analyses reports for HSR alignments in our region and is now working on Draft EIS/EIRs for the different future HSR segments in the SCAG region.

### INTERCITY RAIL

#### THE PACIFIC SURFLINER

The Amtrak Pacific Surfliner serves a 351-mile-long corridor connecting San Luis Obispo, Los Angeles and San Diego. For administrative and management purposes it is referred to as the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor. This name was created when stakeholders formed a



management and planning Joint Powers Authority (JPA) in 1989 and, at the time, member agencies only included representatives from Los Angeles to San Diego. The Pacific Surfliner is the second busiest service in Amtrak's national network, only behind the Northeast Corridor, and moves nearly nine percent of Amtrak's total national ridership. Currently, there are 13 daily round trips between Los Angeles Union Station and San Diego's Santa Fe Depot, five round trips between Los Angeles and Santa Barbara and Goleta, and two daily round trips serving San Luis Obispo.

The Pacific Surfliner train service is augmented by Amtrak Thruway buses providing an important extension for the Pacific Surfliner. The Pacific Surfliner Thruway routes offer service from:

- Los Angeles to Bakersfield
- Los Angeles to Santa Barbara
- Santa Barbara-San Luis Obispo-San Francisco/Oakland
- Santa Barbara to San Jose
- Fullerton to Indio via Palm Springs

The Pacific Surfliner's ridership has grown steadily over the years and now carries about three million riders per year for FY2016-17. Service levels have also steadily grown. Rail service between Los Angeles and San Diego has been running since 1938. It was first operated by the Atchinson, Topeka and Santa Fe Railroad and called the "San Diegan." In 1971, when Amtrak was created it assumed operation of the San Diegan service. In 2000, the San Diegan was renamed the Pacific Surfliner, and service was extended north to San Luis Obispo.

## LOSSAN CORRIDOR SUSTAINABILITY

The Pacific Surfliner South Service Development Plan (May 2013) points to the threat of climate change on the Pacific Surfliner's infrastructure, as well as the state rail network. It cites that the physical impacts on railroad infrastructure include "inundation, landslides, flooding, high winds, intense waves, storm surge, accelerated coastal erosion and change in construction

material durability."

## THE COAST STARLIGHT

The Amtrak Coast Starlight operates between Los Angeles Union Station and Seattle, Washington via Santa Barbara, Oakland and Portland, OR. It provides one round trip per day. It is Amtrak's second most popular long distance train service. Planning is underway to bring back the "Coast Daylight," which would run from Los Angeles directly into San Francisco's new Transbay Terminal via the San Francisco peninsula. Plans call for extending a current Pacific Surfliner train to implement this service. The Coast Rail Coordinating Council (CRCC) is leading up this effort.

## THE SOUTHWEST CHIEF

The Southwest Chief is an Amtrak long distance service which operates between Los Angeles and Chicago. It provides the only rail service in California from Los Angeles east to Victorville, Barstow and Needles, and then spans the country with major stops in Flagstaff, Albuquerque, Kansas City and Chicago. Due to the grades encountered traversing the El Cajon Pass, the Southwest Chief takes about three and a half hours to travel between downtown L.A. and Victorville. It operates one round trip daily.

## THE SUNSET LIMITED

The Sunset Limited is also an Amtrak long distance train but operates just three days a week in each direction connecting Los Angeles, Tucson, San Antonio and New Orleans. It is the only rail service serving Palm Springs and the Coachella Valley from Los Angeles albeit with a departure and an arrival time in the middle of the night. In San Antonio, part of the trainset continues north to Chicago as The Texas Eagle, via Little Rock and St. Louis. At one time, the Sunset Limited operated daily all the way to Jacksonville, FL via New Orleans and arrived eastbound in Palm Springs at about 6:00 p.m.

## COMMUTER RAIL – METROLINK

### DEFINITION OF COMMUTER RAIL

Commuter rail service is defined in the National Transit Database as a transit mode that is an electric or diesel propelled railway for urban passenger train service consisting of local short distance travel operating between a central city and adjacent suburbs. Service must be operated on a regular basis by, or under contract with, a transit operator for the purpose of transporting passengers within urbanized areas (UZAs), or between UZAs and outlying areas. Such rail service, using either locomotive-hauled or self-propelled railroad passenger cars, is generally characterized by:

- Multi-trip tickets and passes
- Specific station-to-station or zone-to-zone fares
- Traditional railroad employment practices by the operator
- Lower station densities in more dense urban areas than suburban areas

Commuter rail does not include heavy rail rapid transit such as subways, light rail or streetcars. Commuter rail station stops tend to be much closer together than those of intercity passenger rail such as the Pacific Surfliner. Also, smaller portions of the total route alignment tend to be out of urbanized statistical areas, and a much higher proportion of passengers are daily riders. Peak ridership occurs on weekdays, whereas intercity rail operators often have weekend peak ridership. Commuter rail often fuses urban transit business models with railroad style operations. As a result, farebox recovery ratios tend to be lower, though operations costs tend to be similar.

### METROLINK

SCRRA is the commuter rail operator in the SCAG region, operating 173 daily trains on seven different lines on 538 route miles. These lines are the Antelope Valley Line, connecting Los Angeles to Palmdale and Lancaster in the Antelope Valley; the Inland Empire/Orange County Line (IEOC), connecting

San Bernardino and Riverside with Oceanside via Orange County; the Orange County Line, operating between Los Angeles and Oceanside through Orange County; the Riverside Line from Los Angeles to downtown Riverside; the San Bernardino Line, between Los Angeles and the City of San Bernardino; the Ventura County Line, operating between Los Angeles and East Ventura via the San Fernando Valley; and the 91/Perris Valley Line, operating between downtown Los Angeles to South Perris via downtown Riverside and Fullerton along the SR 91 corridor. The Orange County Line extends south to Oceanside in San Diego County, where it connects with the COASTER commuter rail service to San Diego and the SPRINTER rail service inland to Escondido. Both of these services are operated by the North County Transit District (NCTD). The COASTER is a commuter railroad like Metrolink that also operates on the weekends, and the SPRINTER is a light rail using diesel multiple unit (DMU) propulsion.

The Antelope Valley, IEOC, Orange County, San Bernardino and 91/Perris Valley Lines also operate weekend service, and a pilot program starting weekend service on the Ventura County Line begins in April 2020. Metrolink operates one round-trip express train on the Antelope Valley Line (to Palmdale only). Metrolink operates mostly along track and right-of-way (ROW) owned by the county transportation commissions (CTCs). Much of their track however is owned by the freight railroads: BNSF and UP. For example, the Ventura County Line is owned by the UP west of Moorpark station; The 91/Perris Valley Line is owned by BNSF between Los Angeles and Riverside; and the Riverside Line is owned by UP. SCRRA and the CTCs have cooperative agreements with the freight railroads in these corridors, and these agreements limit service, perhaps most notably on the Riverside Line which is limited to just six round trips per day. The San Bernardino Line is Metrolink's busiest carrying about 9,700 passenger per day (3rd Qtr. FY19), has 38 daily trips and weekend service with lesser volumes. (It has an extra late night round trip on Friday.)

SCRRA is funded by the five CTCs based on route mileage and service levels. These are the Orange County Transportation Authority (OCTA), the Los Angeles County Metropolitan Transportation Authority (Metro), the Riverside County Transportation Commission (RCTC), the San Bernardino County Transportation Authority (SBCTA), and the Ventura County Transportation Commission (VCTC).



Metrolink operates 173 daily trains on its seven lines carrying roughly 39,500 passengers on weekdays (3rd Qtr. FY19). Metrolink carried nearly 12.0 million passengers in FY2018-19. Ridership has generally increased year over year but was negatively impacted by the Great Recession. Metrolink has not raised its fares in several years. After a successful pilot project decreased fares 25 percent which increased boardings on the Antelope Valley Line in 2015/2016, a 25 percent fare reduction was implemented on the San Bernardino Line in 2018 due to a loss of ridership from the Gold Line extension to Azusa. Again, this has resulted in increased boardings.

Metrolink's FY2018-19 farebox recovery was 34.1 percent. Its farebox recovery has traditionally been within 40 percent to 45 percent. In addition to being the first commuter railroad to implement PTC, Metrolink is taking delivery of 40 fuel-efficient, ultra-low emission Tier IV locomotives--also the first commuter railroad in the nation to do so. SCRRRA contracts with Amtrak to operate its service, Bombardier for rail equipment maintenance, and the Los Angeles County Sheriff's Department for security.

Metrolink has added two new stations to its system in the last couple of years: the Hollywood Burbank Airport North station, serving the Antelope Valley Line, and the downtown San Bernardino station, serving the IEOC and San Bernardino Lines. In the future, the downtown Placentia station will serve the 91/Perris Valley Line, and the Vista Canyon station in Santa Clarita will replace the Via Princessa station along the Antelope Valley Line. With the opening of the Arrow Hybrid Rail service from downtown San Bernardino to the University of Redlands in 2022, Metrolink will extend at least one round trip to downtown Redlands on the San Bernardino Line.

## METROLINK'S HISTORY

The California State Legislature enacted SB 1402 in June 1990, requiring the CTCs of Los Angeles, Orange, Riverside, and San Bernardino to develop a plan for regional transit services. In August 1991, SCRRRA was created to plan, design, construct, and administer the operation of a regional passenger rail system serving the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The SCRRRA branded the regional commuter rail system "Metrolink."

The SCRRRA is a JPA consisting of five member agencies—Metro, OCTA, RCTC, SBCTA, and VCTC—and three ex-officio member agencies—SCAG, the San Diego Association of Governments (SANDAG), and Caltrans District 7.

Metrolink's first three lines: the San Bernardino Line, the Santa Clarita Line (now the Antelope Valley Line), and the Ventura County Line, inaugurated service to downtown Los Angeles in October 1992. The Riverside Line was added in June 1993, the Orange County Line in April 1994, the IEOC in October 1995, and the 91 Line between Los Angeles and Riverside via Fullerton in May 2002. The Perris Valley Line was added in the summer of 2016 with 24 miles of new track and 4 additional stations.

## METROLINK AND SUSTAINABILITY

**Metrolink** – Metrolink also plays a significant role in the region's sustainability. The following statistics were taken from Metrolink's website:

- Metrolink removes approximately 9,300,000 weekday automobile trips from our region's roadways every year.
- 85 percent of Metrolink riders have a car but choose to ride the train, relieving congestion on the region's freeways. 22,000 bikes are carried on Metrolink trains each month.
- Metrolink trains provide the same capacity as adding two new freeway lanes on adjacent freeways during peak commute times.
- Tier 4 locomotives use up to eight percent less fuel.
- Metrolink riders reduce 130,000 metric tons of CO2 emissions from the atmosphere each year, which is the equivalent of the carbon sequestered by 169,774 acres of U.S. forests in one year (Environmental Protection Agency- Greenhouse Gas Equivalencies Calculator, 2019).

Additionally, Metrolink has undertaken several green programs to reduce air pollution and GHGs. They are detailed below:

**Metrolink Industry Station** – This project outfitted the Metrolink Industry Station with approximately 8,300 photovoltaic solar panels covering 940 parking

spaces. The panels can generate enough electricity to power 1,300 homes and the station also contains 64 electric vehicle charging stations.

**Tier 4 Locomotives** – Metrolink became the first commuter rail system in the nation to operate new locomotives powered by Tier 4 clean technology. Tier 4 locomotives are the cleanest diesel locomotives in the nation, and are up to 85 percent cleaner than our old locomotives. They have two-thirds more horsepower and are equipped with the latest safety upgrades. Metrolink has ordered 40 locomotives in total. The life of these Tier 4 locomotives is expected to be 30 years, after which time electrified locomotives are a possibility. The California High-Speed Rail service will operate electrified trains in the future, and will share the LOSSAN corridor with Amtrak and Metrolink. Amtrak and Metrolink will be able to operate on these electrified tracks with diesel locomotives even before these agencies convert to electrified locomotives.

**Bike Facilities** – Metrolink promotes the use of bikes on its trains. Its fleet includes specialty bike cars that can hold up to 18 bikes, and most Metrolink stations offer bike racks or lockers for passengers.

**Fuel Conservation Program** – This program allows maintenance crews to shut down the Head End Power (HEP) engines that power the car lights and air conditioners in order to conserve fuel. When train sets are stored overnight and during weekends at layover yards, the locomotive main and HEP engines are shut down and the train set is connected to wayside power. Use of the temporary plug-in power while the locomotive engine is shut off reduces exhaust emissions and the amount of fuel that would be consumed by the locomotive engines left idling. This program yields an approximate 13 percent reduction (853,000 gallons) in diesel fuel consumption per year.

**Positive Train Control (PTC)** – PTC is a critical safety technology that prevents train-on-train collisions, over speed derailments, and unauthorized train movements.

**Metrolink Systemwide Climate Vulnerability Assessment** – This project will assess current and future risks to all Metrolink infrastructure and facilities, and identify best-practice responses to incorporate in SCRRRA design standards. This project will focus on riverine flooding, sea-level rise, heat, wildfire, drought/rain/

landslide cycles, and seismic issues. In addition, the project will assess risks to transit-dependent and disadvantaged communities. SCRRRA will begin a 10-year major investment in a slate of projects defined as part of a comprehensive, regional multi-agency program to restructure and revolutionize regional rail in the Southern California service area, known as the Southern California Optimized Rail Expansion Program.

## HIGH-SPEED RAIL

### CALIFORNIA HIGH-SPEED RAIL

The CA HSR is a voter-approved high-speed rail service connecting the state's major metropolitan areas. Voters passed Proposition 1A in 2008 for the first phase of the project from Los Angeles and Anaheim to San Francisco. The bond measure calls for speeds of up to 220 mph enabling the trip from Los Angeles to San Francisco to be completed in two hours and forty minutes. The measure authorized the sale of \$9.95 billion in bond funds for Phase 1 of the project. Phase 2 would connect Sacramento to San Francisco and Los Angeles to San Diego via the San Gabriel Valley and Inland Empire. The travel time between downtown Los Angeles to San Diego will be one hour and twenty minutes.

In 1996, the state legislature authorized the formation of the CHSRA. The Authority has spent the past 24 years planning and designing the statewide network.

The CA HSR system will provide an additional intrastate transportation option in California, offering an alternative to air and auto travel, and providing new travel capacity to California's constrained freeway, highway and airport capacities, especially as its population continues to grow. CHSRA, in partnership with the FRA, which has provided \$3.6 billion in High-Speed and Intercity Passenger Rail funding, chose to begin construction in the San Joaquin Valley.

There are five segments of the project under development in the SCAG Region:

- Bakersfield to Palmdale
- Palmdale to Hollywood Burbank Airport

- Hollywood Burbank Airport to Los Angeles
- Los Angeles to Anaheim
- Los Angeles to San Diego (Phase Two)

All five segments have produced alternatives analysis documents, and are in the environmental review process. CHSRA’s 2012 Business Plan introduced a new construction and implementation approach called the “Blended Approach,” which calls for investing in existing rail services for speed and service improvements in the “bookends” (Bay Area and Southern California) to improve connectivity until the entire CA HSR system is built in phases over time.

CHSRA officially broke ground on Jan. 6, 2015 in the San Joaquin Valley in the City of Fresno. In August 2013, the CHSRA executed its first design-build contract, known as Construction Package 1 (CP 1). This 29-mile segment runs from Avenue 17 in Madera south to East American Avenue in Fresno. Since that time, CHSRA has awarded Construction Package 2-3 (CP 2-3), which covers the next 65 miles from Fresno south to one mile north of the Tulare–Kern County line near Bakersfield, and CP 4, which includes the next 30 miles to just north of Shafter, CA. These construction packages represent the current 119 miles under construction.

The CHSRA released its 2018 Business Plan in April, 2018, which redefined the initial operating segment (IOS) from just north of Bakersfield to Madera to downtown Bakersfield to San Jose, dubbed the “Silicon Valley to Central Valley Line.” This line would operate between San Jose and downtown Bakersfield, including a northern spur to Merced. This will extend true high-speed service from Merced to San Jose, and connect to the new San Francisco Transbay Terminal via blended Caltrain service. Caltrain will be electrified with signal improvements for higher speeds between San Jose and San Francisco as part of the blended system and as a result of the Northern California High-Speed Rail memorandum of understanding (MOU). Revenue service is scheduled for 2028. The 2018 Plan implements the Phase 1 System in 2033 at a cost of \$77 billion. In May, 2019, CHSRA released its Project Update report to the California State Legislature. This document updated the 2018 Business Plan and reflects a new direction from the Governor’s Office. It again changes the boundaries of the IOS. The new IOS proposed is from Merced to Bakersfield via Fresno, a 171

mile segment, with revenue service anticipated towards the end of 2028. The implementation date of the Phase 1 segment remains unchanged at 2033.

## CHSRA BUSINESS PLANS AND FUNDING TIMELINE

In April, 2012, the CHSRA released its *2012 Revised Business Plan*. This plan introduced the “blended/bookend” approach that calls for early investments in the existing passenger rail networks of Southern and Northern California to connect to the CA HSR as it is built in phases. The 2012 Business Plan also significantly adjusted the cost and schedule, and committed to constructing the southern end first from the Initial Construction Segment (ICS) in the San Joaquin Valley rather than the northern end. The plan included a \$30 billion reduction in cost, from \$98 billion to \$68 billion. (The original Phase One cost was \$43 billion per Proposition 1A.) These cost savings are largely due to the “Phase 1 Blended System” from San Jose to L.A. Union Station.

In April 2014, the CHSRA released its *2014 Business Plan*, which built on and updated the *2012 Revised Business Plan*, and coincided with implementation of SB 1029. SB 1029 (Budget Act of 2012) was signed in to law in June 2012 and approved almost \$8 billion in federal and state funds for the construction of the first segment in the San Joaquin Valley and 15 bookend and connectivity projects throughout the state.

The *2016 Business Plan* introduced the “Valley to Valley” IOS, from San Jose to just north of Bakersfield. It also postponed the full Phase 1 system from 2029 to 2033.

The State of California’s adopted 2014-15 budget included \$250 million in Cap-and-Trade funding for the CA HSR, and put in to law that CHSRA shall receive 25 percent of total Cap-and-Trade proceeds as a dedicated funding stream going forward. Through February 2019, CHSRA has received over \$2.6 billion in Cap-and-Trade proceeds.

The 2018 Business Plan and the 2019 Project Update Report emphasized a “building block approach” starting with an initial 171-mile line between





Merced and Bakersfield. CHSRA has also advanced high speed rail in Northern California, investing \$714 million in the Caltrain Electrification Project and \$543 million in ten connectivity projects. In Southern California, CHSRA is investing \$441 million towards Link Union Station and \$389 million in seven connectivity projects.

In February 2020, the CHSRA released the Draft 2020 Business Plan. This plan updates the capital cost estimates for each project section and phase, including the Silicon Valley to Central Valley Line, which now includes the extension to Merced, and the full Phase 1 system. The capital cost estimates have not changed significantly from those presented in the 2018 Business Plan. Comparing the 2018 and Draft 2020 Business Plans, the full Phase 1 system was estimated to cost \$77.3 billion in 2018 and is now estimated at \$80.3 billion in 2020 (mid-range estimate, in year of expenditure dollars).

The Draft 2020 Business Plan describes potential funding options for closing the remaining gaps in the Phase 1 system, with a focus on extending and solidifying Cap-and-Trade to allow for financing. CHSRA projects \$20.6 to \$23.4 billion in total funding available through 2030, based on a Cap-and-Trade funding range up to \$750 million per year. Extending Cap-and-Trade to 2050 could allow the Authority to finance against future auction proceeds.

### SOUTHERN CALIFORNIA SECTIONS

There are five Southern California sections that would serve the SCAG region:

- Bakersfield to Palmdale
- Palmdale to Hollywood Burbank Airport
- Hollywood Burbank Airport to Los Angeles
- Los Angeles to Anaheim
- Los Angeles to San Diego (Phase Two)

### BAKERSFIELD TO PALMDALE

This segment will run from Bakersfield to Palmdale via the “Bakersfield

Gap” generally along the UP single track through the Tehachapi Mountains. Currently, the planned Palmdale HSR station is located at about 900 feet south of the existing Palmdale Transportation Center that serves Metrolink. Draft EIR/EIS documents are expected in early 2020, and Final EIR/EIS documents are expected by 2021.

### PALMDALE TO HOLLYWOOD BURBANK AIRPORT

This section will run from the Palmdale Transportation Center station to the Hollywood Burbank Airport station. The third supplemental alternatives analysis (SAA), completed in May 2014 for the original Palmdale to Los Angeles section, discussed the concept of evaluating the Palmdale to Los Angeles section as two sections. The May 2014 SAA refined the alignment alternatives and station options, including identifying the Palmdale Transportation Center Station option at the northern end and the Hollywood Burbank Airport Station as the southern limit of this new Palmdale to Burbank Section. This segment is 38 miles long and the state-preferred alternative adopted in 2018 roughly follows SR 14, and is completely underground within the Santa Clarita City limits. Draft EIR/EIS documents are expected in 2020, and Final EIR/EIS documents are expected by 2021.

### HOLLYWOOD BURBANK AIRPORT TO LOS ANGELES

This section will run from the Hollywood Burbank Airport North station to L.A. Union Station and, as described in the previous section, was split from the original Palmdale to Los Angeles section. The state preferred alternative is approximately 14 miles long and will follow the existing LOSSAN Corridor. Draft EIR/EIS documents are expected in early 2020, and Final EIR/EIS documents are expected by 2021.

### LOS ANGELES TO ANAHEIM

This section will run from L.A. Union Station to the Anaheim Regional Transportation Intermodal Center (ARTIC). The state-preferred alternative is

approximately 30 miles in length and will follow the existing LOSSAN Corridor. Draft EIR/EIS documents are expected in 2020, and Final EIR/EIS documents are expected by 2021.

## LOS ANGELES TO SAN DIEGO

This section will run from L.A. Union Station to the San Diego Airport Intermodal Transportation Center. This alignment will be through the San Gabriel Valley and Inland Empire at about 170 miles. The Preliminary Alternatives Analysis was completed in March 2011, and since that time 18 areas of the alignment have been under study for refinement, along with a station market analysis and connectivity analysis. Phase Two includes several alternative alignments including I-10 and SR 60 in the San Gabriel Valley and I-15 and I-215 in the Inland Empire. Work on this section is in close coordination with the Southern California Inland Corridor Group that includes transportation agency stakeholders along the corridor including SCAG.

## CA HSR AND SUSTAINABILITY

The CHSRA states that the CA HSR will be a game changer in terms of modal shift in the state and our region, and will result in a drastic reduction in VMTs, air pollution and GHGs. Studies have shown that high-speed rail uses only one-third of the energy used by airplanes per passenger and only one-fifth of the energy used by cars per passenger.

Following are some sustainability statistics published by CHSRA in its 2018 Sustainability Report:

- VMTs for long-distance trips in California are projected to increase by approximately 11.7 billion miles – to 70 billion miles annually – between 2021 and 2040.
- Over the first 50 years of CA HSR operation, the cumulative reductions from the modal shift from automobile emissions are projected to be between 64 and 75 million metric tons of carbon dioxide.

The CA HSR will greatly support California's land-use objectives as outlined in SB

375 and AB 32. High-speed rail stations around the world have been shown to be an effective and powerful tool to encourage sustainable, compact mixed-use land development and pedestrian-oriented design. Two French cities, Lilles and Nantes, provide examples of how a combination of high-speed rail investment, local planning and development incentives can play a significant role in sparking station area development.

Lille's economy was transformed once it was connected via high-speed rail to London, Paris and Brussels. High-speed rail investment helped the city reverse a trend of depopulation and declining economy. In the case of Nantes, after it was connected in 1991, it evolved from an industrial port to a major service sector hub and one of the world's most livable cities.

**U.S. DOT** – Since Hurricane Sandy on the East Coast caused millions of dollars of damage in transportation infrastructure, and suspended transit operations for days and weeks in some cases, much emphasis has been placed on the impacts of climate change to our nation's transit infrastructure.

Executive Order No. 13514 instructed the DOT to submit a Climate Adaptation Plan for implementation in 2013. As part of this plan, DOT identified three high-level priority actions for implementation in both FYs 2011-12 and 2012-13.<sup>1</sup>

- **Planning** – DOT will take actions to ensure that federal transportation investment decisions address potential climate impacts in statewide and metropolitan transportation planning and project development processes as appropriate in order to protect federal investments. Through such actions transportation systems will gradually become better prepared for future climate shifts.
- **Asset Management** – DOT will work to incorporate climate variability and change impact considerations in asset management. For example, modal administrations will work with grantees to assure that potential impacts are incorporated into existing grantee asset management systems. Agencies will assess the policy, guidance, practices, and

<sup>1</sup> U.S. DOT, Action Plan: Ensuring Transportation Infrastructure and System Resilience, 2013

performance measures of its asset management programs to incorporate such considerations.

- **Tools** – DOT will provide tools, case studies, best practices, and outreach for incorporating climate considerations into transportation decision-making.

## FREIGHT RAIL OPERATIONS

The SCAG region's freight railroad system consists of two Class I railroads and about a half dozen Class III railroads. Railroads are typically divided into three classes. Class I railroads generate more than \$399 million in annual operating revenues (2010 FRA definition). The two Class I railroads operating in our region are BNSF and UP, two of the largest national railroads and operate national networks. Class II railroads, commonly referred to as regional railroads, generate between \$31.9 million and \$399 million in annual operating revenues. Class III railroads, commonly referred to as short line railroads, generate less than \$31.9 million in annual operating revenues and engage in line-haul movement. The notable short line railroad in our region is the Pacific Harbor Line, operating in the ports of Los Angeles and Long Beach on 59 miles of track. They connect with BNSF and UP, especially at the beginning of the Alameda Corridor.

While the freight railroads transport billions of dollars of goods within our region and to the rest of the country, Metrolink and Amtrak carry growing numbers of passengers along rail right-of-way (ROW) owned by the freight railroads. This is allowed through shared-use agreements, but unfortunately limits the amount of “slots” available for the passenger railroads, resulting in a supply of service that may not meet real passenger demand. As noted earlier, the Metrolink Riverside Line is currently only allowed 12 daily slots resulting in just six round trips per day along its corridor. More information on freight rail operations may be found in the Goods Movement report.

## STATION AREA PLANNING

There are several station area planning projects underway in the SCAG region.

They are discussed below.

## LINK UNION STATION (LINK US)

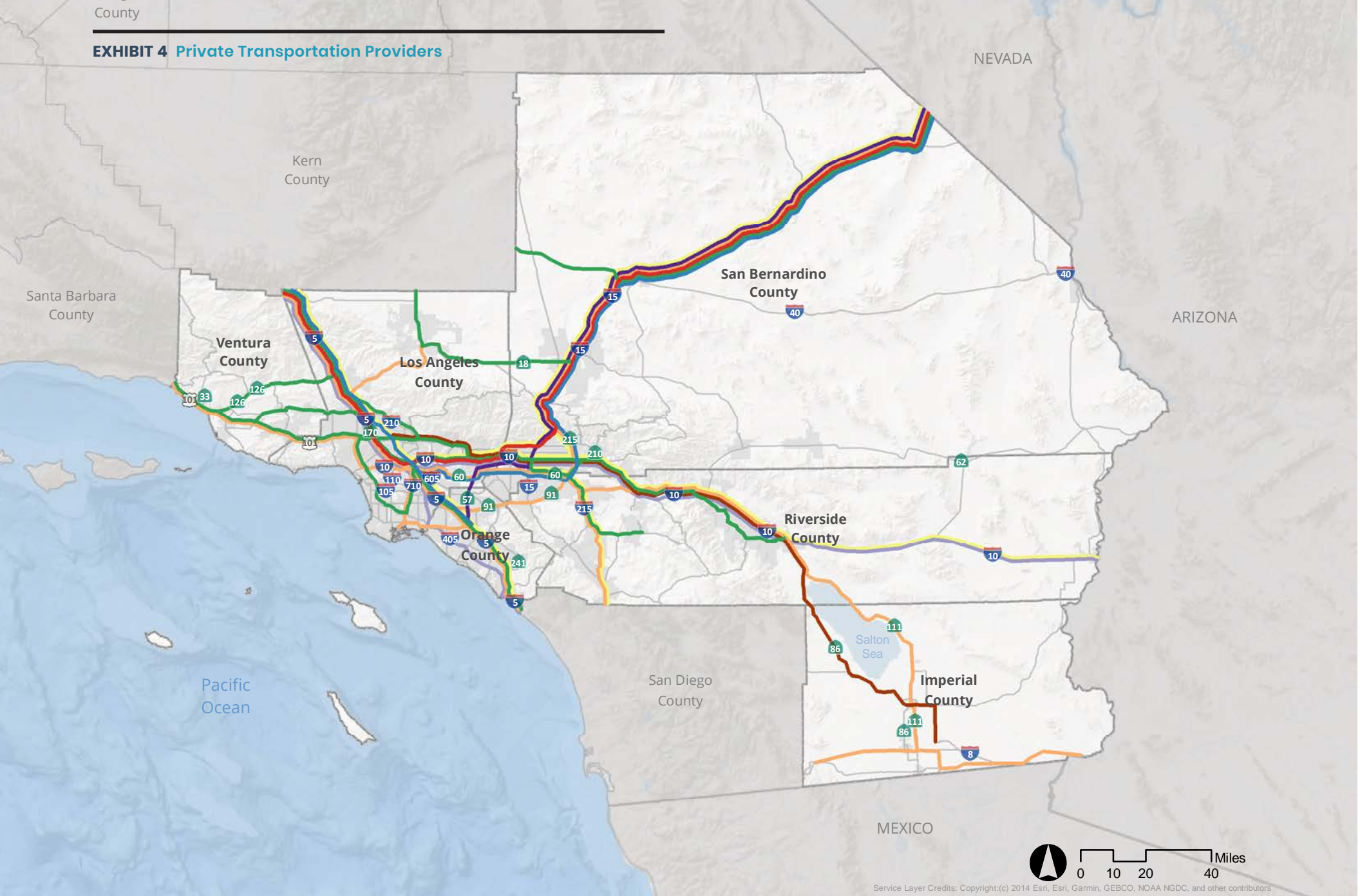
The Link US project, together with the Union Station Master Plan, will transform Los Angeles Union Station (LAUS) from a “stub-end,” or dead-end station, to a “run-through” station by extending tracks south over the US-101 freeway to connect to the current tracks on each side of the Los Angeles River. Currently, as a stub-end station, all commuter and intercity trains enter and exit LAUS through a constricted five-track “throat” located north of the station. This results in a 20-minute or longer idle time for trains at the station platform area to switch from push/pull operations. The run-through tracks will reduce rail travel times in our region and allow one-seat ride opportunities to many more destinations.

This project will also improve the station in many other aspects. The Master Plan is designed to preserve the architectural beauty of LAUS as it prepares this civic icon to meet the growing transportation demands of the 21st century. Improvements include:

- A new passenger concourse (the current tunnel) that would be widened for greater capacity
- Up to ten run-through tracks
- Widened passenger platforms for increased capacity
- Improved signage and wayfinding
- A relocated bus plaza from the east side of the station to the west side
- Establishing a pedestrian gateway on the west side of the station to connect with historic placita olvera
- New and improved retail and transit-oriented development (tod) uses

In addition to LINK US, L.A. Metro is constructing a new express bus passenger facility along the El Monte ExpressLanes on the south side of Union Station with a direct pedestrian connection to the station. Currently, the thousands of daily I-10 ExpressLanes bus patrons are dropped off at a street corner outside of Union Station to arrive downtown, and picked up on a freeway island

**EXHIBIT 4 Private Transportation Providers**



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- Megabus
- Bolt Bus
- Amtrak Thruway Bus
- Transportes Intercalifornias
- Lux Bus
- Greyhound
- Hoang Express Bus
- Flix Bus

Note: Graphic route information for Tres Estrellas de Oro and TUFESA was unavailable from bus operators at the time of plan adoption. Please refer to Table 1 in the Passenger Rail Technical Report for more information on cities served.

Source: CalTrans, 2018, Flix Bus, 2019

with sparse passenger amenities and virtually no shelter from the elements to travel eastbound.

## CITY OF PALMDALE

The City of Palmdale is currently preparing a CHSRA TOD Specific Plan, the Palmdale Transit Area Specific Plan (PTASP). The study focuses on the Palmdale Transportation Center (PTC), a multi-modal center that serves Metrolink, Amtrak, Greyhound and several Antelope Valley Transit Authority lines and the future CA HSR and potentially XpressWest and High-Desert Corridor rail service. This PTASP, and two previous station area planning studies funded by L.A. Metro and SCAG, are looking at TOD potential around the PTC. The PTASP includes a real estate and market analysis, value capture, connecting transit and first/last mile facilities.

## ARRIVE CORRIDOR

SCAG and SANBAG completed a study in 2015 that made station-area planning recommendations for its seven rail stations. The emphasis was not only how to improve the number of origins from them but to greatly improve the number of destinations to them—making them destinations. Most of the current rail activity is to go to jobs in downtown Los Angeles; however, the station areas have potential to spur TOD and commercial development. Montclair currently has an excellent bus/rail interface, and has thousands of residential units planned and under construction. Less developed are the Fontana and Rialto station areas, yet the stations are within walking distance of their old towns. Rancho Cucamonga has recently sold the Empire Lakes golf course and that property is slated for at least 3,000 residential units.

## NEW METROLINK STATIONS

**Placentia** – A new Metrolink station in downtown Placentia on the Metrolink 91 Line is expected to be a catalyst for new development and serve up to 500 riders a day. It will include a 246-space parking garage that can be used both by transit passengers and by visitors to the downtown/old town area, as well as

other TOD developments including two residential projects with over 600 units and over 10,000 square feet of retail space.

**Vista Canyon** – A new Metrolink station will also open in the Santa Clarita Valley along the Metrolink Antelope Valley Line. The new station will be next to the Vista Canyon residential development and will be a multi-modal station serving rail passengers and Santa Clarita bus lines. It will replace the existing Via Princessa station and is a private/public partnership with the City of Santa Clarita. It is expected to be open in 2022.

**Redlands Rail** – Once the Redlands Rail Arrow service opens in 2022, Metrolink plans on operating one to two round-trips per day on the San Bernardino Line on this corridor. The Redlands Rail stations include downtown San Bernardino Transit Center, Tippecanoe Ave., ESRI, downtown Redlands and Redlands University station.

## PRIVATE PROVIDERS OF TRANSPORTATION

As noted above in the Regulatory Framework section, SCAG is required under new FAST Act regulations to include private providers of transportation in the metropolitan planning process.

There are some significant gaps in service in our region between public and private transportation providers. Most notably, the eight-block gap where there is no connecting public transit service between the Los Angeles Greyhound Station, one of the busiest bus stations in the nation, and Los Angeles Union Station. Cooperation in planning efforts between the public and private providers may result in important benefits for the traveling public. **TABLE 1** lists the private intercity bus operators in the SCAG region.

## INSTITUTIONAL ARRANGEMENTS

### LOSSAN JPA

Amtrak's Pacific Surfliner is the designated intercity passenger rail service in the corridor and, since Amtrak took over passenger service in 1971, DRMT had

provided administration and management for the Pacific Surfliner. DRMT has also traditionally provided state operating subsidies for the Pacific Surfliner in order to provide a much higher level of service than Amtrak would otherwise provide. This subsidy has recently been about \$90 million a year.

In 2011, the LOSSAN Agency Board asked the LOSSAN Chief Executive Officers (CEOs) group to recommend changes to the LOSSAN governance structure that would enhance the LOSSAN Board’s ability to implement speed, service and marketing improvements, especially in light of upcoming changes to federal operating subsidies per Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), and the Southern California High-Speed Rail Memorandum of Understanding improvements. The LOSSAN CEOs group

proposed a new Joint Powers Authority (JPA) structure wherein the LOSSAN Rail Corridor Agency would have direct control of Amtrak operations, similar to Northern California’s Capitol Corridor JPA for Amtrak Capital Corridor Service. The Capitol Corridor implemented local control from the DOR in 1998 to much success.

In August 2011, the LOSSAN Board unanimously approved the recommendation of the LOSSAN CEOs group to move forward and develop a governance initiative that would assume local control of the state- supported Amtrak Pacific Surfliner service. SB 1225 was authored by State Senator Alex Padilla and introduced into 2012’s legislative session in February 2012. It was approved by the state legislature in August and signed in to law by Governor Brown in September of 2012. A companion bill for local control of the Amtrak San Joaquin service in the San Joaquin Valley was also signed in to law that year.

**TABLE 1 Private Transportation Providers**

Operator	Cities
Greyhound	Numerous
Megabus	Los Angeles, Riverside, Anaheim, Burbank, Las Vegas and others
Bolt Bus	Los Angeles, Hollywood, Ontario, Barstow, San Francisco, Las Vegas and others
Lux Bus	Anaheim, Los Angeles, Las Vegas, San Francisco and others
Antelope Express	Palmdale, Santa Clarita, LAX
FlixBus	San Diego, Los Angeles, Phoenix, Las Vegas and others
Tres Estrellas de Oro	Los Angeles, San Diego, San Ysidro, Tijuana, Calexico and others
Intercalifornias	Tijuana, San Ysidro, San Diego, Los Angeles, Oxnard, Fresno, San Jose and others
Hoang Express Bus	San Diego, Westminster, El Monte, San Jose, Oakland, San Francisco, Sacramento
TUFESA	Las Vegas, San Diego, Tijuana, San Francisco, Indio and Others

Source: SCAG

The benefits of local management of passenger rail service in the LOSSAN corridor include:

- More efficient resource allocation related to service expansion, frequencies, and schedules;
- A unified voice at the state and federal level when advocating on passenger rail issues, including funding for capital improvements;
- Consolidated services such as fares, ticketing, marketing, and passenger information systems;
- Coordinated capital improvement prioritization; and
- More focused oversight of on-time performance, schedule integration, mechanical issues, and customer service.

SB 1225 provided a timetable for DRMT to transfer management of the Pacific Surfliner to the new locally-controlled JPA by June of 2015 by means of an Interagency Transfer Agreement (ITA). Importantly, it specifies that funding and levels of service will remain at least at the same levels for the initial three-year period from the ITA’s effective date of execution. In 2013, OCTA was awarded the contract as the first local managing agency after a competitive procurement process. They began an initial “interim” term until the ITA was executed in June 2015, and commenced their three-year term to manage the service at that time.

OCTA continues to be the Pacific Surfliner managing agency as of 2019. DRMT continues to provide a supportive role in the corridor and coordinate on aspects such as statewide planning and connectivity, feeder bus service, and equipment acquisition and coordination. In addition, DRMT transitioned from being a voting member to an ex-officio member.

## SCRRA

The SCRRA is a JPA consisting of five member agencies—Metro, OCTA, RCTC, SBCTA, and VCTC—and three ex-officio member agencies—SCAG, the San Diego Association of Governments (SANDAG), and Caltrans District 7. Metro has four votes, OCTA has two votes, RCTC has two votes, SBCTA has two votes, and VCTC has one vote.

SCRRA is funded by the five CTCs based on route mileage and service levels. These are the Orange County Transportation Authority (OCTA), the Los Angeles County Metropolitan Transportation Authority (Metro), the Riverside County Transportation Commission (RCTC), the San Bernardino County Transportation Authority (SBCTA), and the Ventura County Transportation Commission (VCTC).

## CHSRA

CHSRA is an important institutional partner in rail planning efforts in the SCAG region. CHSRA has invested \$500 million in LINK US and the Rosecrans/ Marquardt grade separation project as part of the Southern California HSR MOU. CHSRA is also an ex-officio member of the LOSSAN Board and a member of the Southern California Inland Corridors Working Group for Phase 2 of the CA HSR project.

## RAIL STAKEHOLDERS

Rail stakeholders in the SCAG region are many, and are involved in all facets of the delivery of the different kinds of rail service operating here. They include operators, such as SCRRA, Amtrak, the LOSSAN Agency, UP and BNSF; the CTCs, MPOs, station cities, elected officials, CHSRA, FRA and rail passenger advocacy

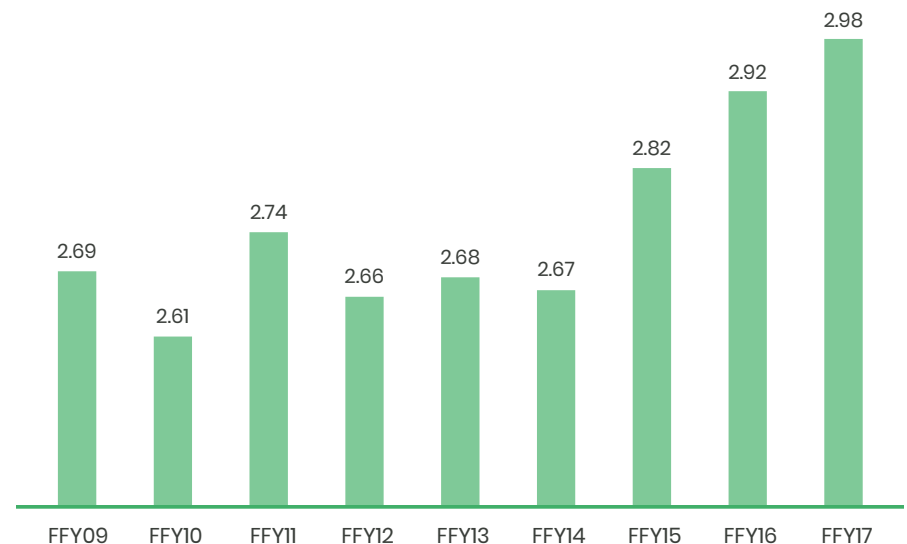
groups such as the Rail Passenger Association of California and other transit/ rail advocacy groups.

## PERFORMANCE

### PACIFIC SURFLINER

The Pacific Surfliner has a long-term trend of increasing ridership and farebox recovery. Some of it by virtue of adding service over the years, but much of it by being an attractive alternative to passenger car travel along the corridor. The Pacific Surfliner carried 2,989,871 passengers in FY 2017. This is up from FY 2016 when it carried 2,924,117 passengers. FY 2017 is the highest number of passengers in its history.

**FIGURE 1 Pacific Surfliner Ridership (in Millions)**



Source: LOSSAN Rail Corridor Agency Business Plan FY 2018-19 - FY 2019 - 20



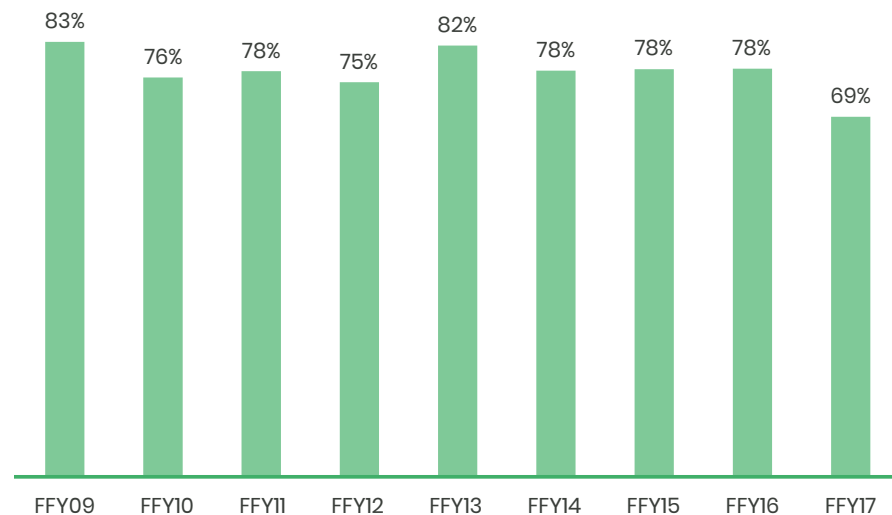
On-time performance (OTP) for FY 2017 was 68.8percent, down significantly from FY 2016 which was 78.0percent. Before FY 2017, OTP generally hovered in the high 70's. For the Pacific Surfliner, endpoint OTP is defined as arrival at the endpoint station within 10 minutes of scheduled arrival for trips up to 250 miles, and within 15 minutes of scheduled arrival for trips between 251 and 300 miles. (The above figures are averaged to incorporate both segments.) Commuter rail in Southern California, Metrolink and NCTD's Coaster, perform much better, generally above 90percent and their OTP standard is departing within six minutes of scheduled times. Reasons for the Pacific Surfliner's lower OTP include maintenance work and slow orders from the host railroads, in this case freight operators as well as Metrolink whose member agencies own the tracks, and mechanical problems. Passenger rail in our region is greatly affected by the amount of one-track operation, as even a minor delay can lead to a train losing its slot, thereby causing cascading delays throughout the network. The Pacific Surfliner's average speed is 46 mph.

Revenue was \$83,016,156 in FY 2017, up from \$79,465,847in FY 2016, and \$75,836,869 in FY 2015. Revenue has done very well the last few years. This is due to the healthy ridership gain noted above most years and also due to the elimination of the off-peak non-summer fares, which were significantly cheaper than summer fares, in FY2011-12. Farebox recovery was 79.2percent for FY 2017, up considerably from before local control was implemented when it was in the 50's.

## METROLINK

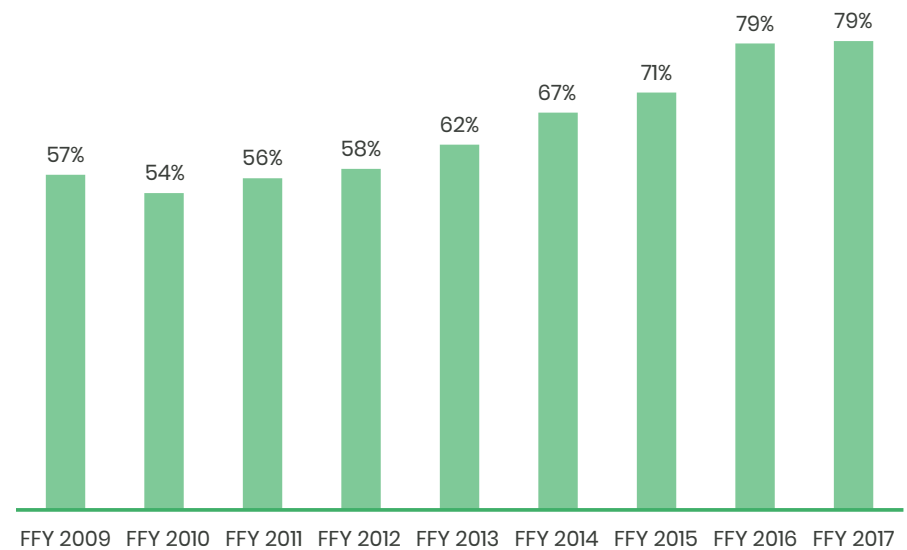
SCRRA operates 173 weekday trains on seven lines carrying approximately 39,500 passengers per day (3rd Qtr. FY19) and carried nearly 12 million passengers in FY19. Metrolink's farebox recovery was 34.1 percent in FY19, and has been in the range of 40 percent to about 45 percent over the years.

**FIGURE 3 Pacific Surfliner On-Time Performance as Percentages**



Source: LOSSAN Rail Corridor Agency Business Plan FY 2018-19 - FY 2019 - 20

**FIGURE 2 Pacific Surfliner Farebox Recovery as Percentages**



Source: LOSSAN Rail Corridor Agency Business Plan FY 2018-19 - FY 2019 - 20

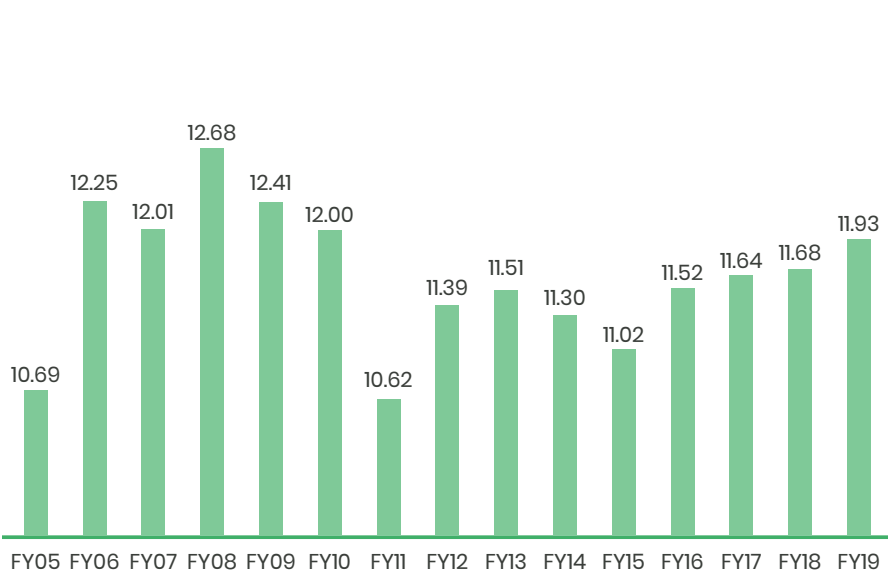
Metrolink's OTP has been very good historically, ranging from 93 percent to 95 percent over the last ten years. A train is considered late if it departs a station 6 minutes or more from the scheduled time.

Metrolink's average system-wide speed is 36 mph. The average speeds vary by line and top speeds are generally 79 mph, except for a section of track in Camp Pendleton where the maximum speed is 90 mph. The San Bernardino Line has the slowest average speed at 33 mph, and the Riverside Line has the highest at 41 mph. Factors that keep the average speed at these levels are a lack of two-track operation, the number and density of the stops (San Bernardino Line) and geographic factors (Antelope Valley Line). This further accentuates the need to fund capital projects in order to speed up the service and make these services more attractive to the single occupant vehicle (SOV) commuters.

### EMERGING TRENDS

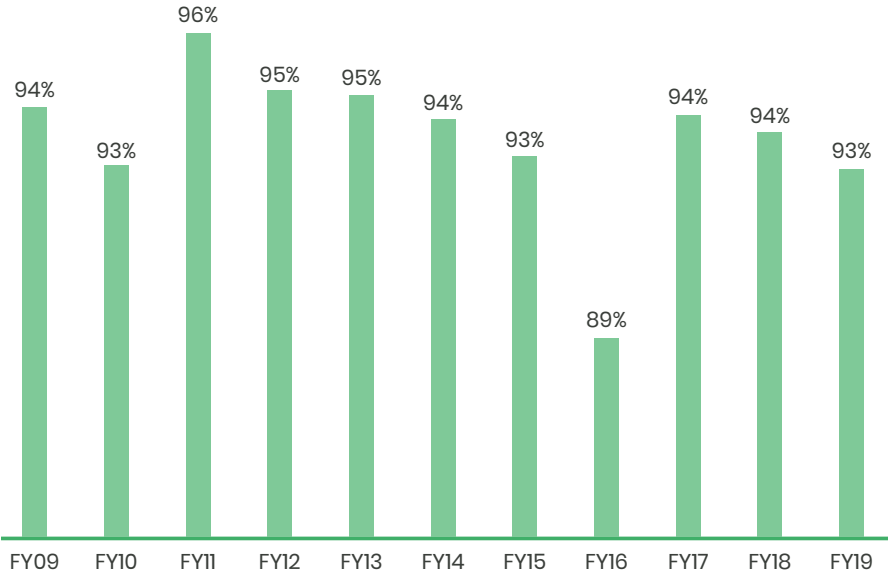
While ridership on most public transit agencies has been falling the last few years, most likely due to increased vehicle ownership among those most likely to take transit, ridership on Metrolink has not fallen but has risen slightly. This is probably because 85 percent of Metrolink riders have cars available for their Metrolink trip, but they still choose to ride Metrolink. Metrolink has not raised fares for several years. Contributing to increased ridership has been Metrolink's increased marketing investment, targeted discounts on select lines, and a strong regional economy. In fact, on two lines, the Antelope Valley Line and the San Bernardino Line, Metrolink has permanently lowered fares. This has led to significant increases in ridership on these lines. In the case of the San Bernardino Line however, there was a significant ridership loss before the fare was lowered due to Metrolink riders migrating to the Foothill Gold Line once it was extended to Azusa. Gold Line fare is only \$1.75 all the way to Downtown Los

**FIGURE 4 Metrolink Ridership (in Millions)**



Source: Southern California Regional Rail Authority

**FIGURE 5 Metrolink On-Time Performance**



Source: Southern California Regional Rail Authority

Angeles with no zone-based fare. Metrolink has also implemented electronic ticketing through the Metrolink app, and its usage continues to grow.

## PROGRESS SINCE THE 2016 RTP/SCS AND PROJECTS IN DEVELOPMENT

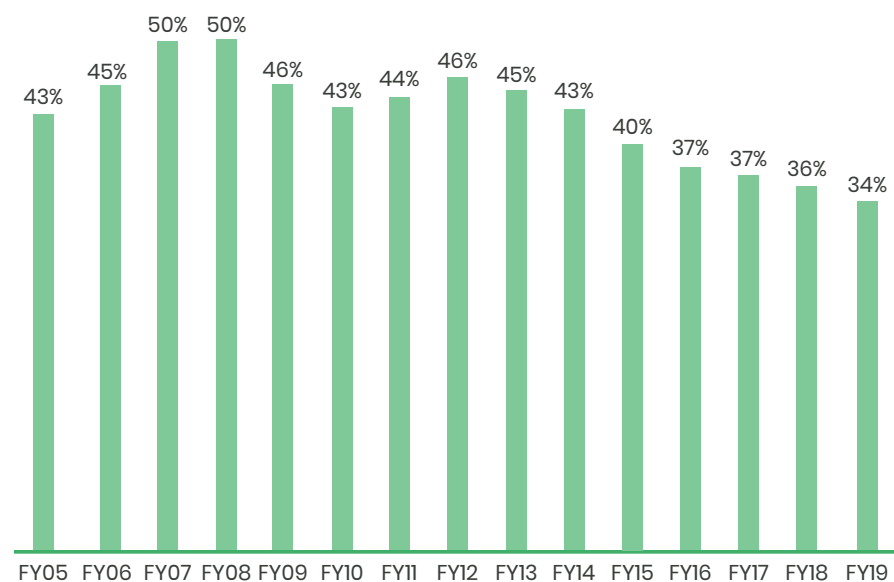
**Metrolink Perris Valley Line** – The Metrolink Perris Valley Line opened for revenue service in June 2016, completing the first expansion of the Metrolink network since 2002. The line serves four new stations along 24 miles of track including downtown Riverside, Hunter Park/UCR, Moreno Valley/March Field, Downtown Perris and South Perris. The project included construction and rehabilitation of the railroad tracks and ROW, upgrades of 18 at-grade crossings and improvement of existing tracks. The Perris Valley Line greatly improves access to our region’s commuter rail network for residents in Menifee, Murrieta,

Temecula, San Jacinto, Hemet, Lake Elsinore and Wildomar. It operates as an extension of the 91 Line.

**Hollywood Burbank Airport North Rail Station** – The new Hollywood Burbank Airport North rail station which opened in 2017 is its second major rail station and is served by the Metrolink Antelope Valley Line. While it is not as close as the Amtrak/Metrolink station to the south on the LOSSAN Corridor, the airport provides a free on-demand shuttle service for passengers to the airport terminals.

**Metrolink Positive Train Control (PTC)** – SCRRRA completed its system-wide PTC implementation in 2017, making it the first commuter railroad in the country to do so. PTC permits automatic train stopping when sensors in the system indicate potential incidents with other trains ahead, or when the speed limit of a section of track is being exceeded. SCRRRA’s PTC implementation included working cooperatively with UP and BNSF on freight-owned track on the Metrolink network. The total cost of the implementation was \$250 million.

**FIGURE 6 Metrolink Farebox Recovery**



Source: Southern California Regional Rail Authority

**Metrolink San Bernardino Line** – At the end of 2017, Metrolink San Bernardino Line and Inland Empire-Orange County Line service was extended to the San Bernardino Transit Center (SBTC), connecting to several Omnitrans local routes, the sbX Green Line, and neighboring transit agencies including Pass Transit, Mountain Transit, Victor Valley Transit Authority (VVTA), and Riverside Transit Agency (RTA).

**Vincent Grade/Acton Siding and Platform** – The Vincent Grade/Acton project was completed in 2016 and lengthened the existing siding at this location on the Metrolink Antelope Valley Line by 4,000 feet to create a two mile long passing siding. A second side platform for passengers was also added at the Vincent Grade/Acton Station. This project adds significant capacity to the northern portion of the Antelope Valley Line, which is mostly single track operation. Longer freight trains can now layover on the siding and not interfere with Metrolink trains resulting in improved on-time performance (OTP) and schedule reliability.

**Rosecrans/Marquardt Grade Separation** – The intersection of Rosecrans and Marquardt Avenues along the LOSSAN Corridor is an at-grade rail crossing

located in the City of Santa Fe Springs. This grade crossing is along the BNSF San Bernardino Subdivision which is part of its transcontinental mainline, in addition to the LOSSAN corridor's busy Amtrak Pacific Surfliner and Metrolink's Orange County and 91/Perris Valley Lines. BNSF has recently completed triple tracking between Redondo Junction in downtown L.A. and Fullerton Junction in Fullerton at this intersection, but the grade separation needs to be completed due to this location's hazardous at-grade configuration. This intersection has been rated by the California Public Utilities Commission (PUC) as the most hazardous grade crossing in California - over 130 trains and over 45,000 vehicles use this crossing each day. The rail track has a diagonal configuration at the intersection which has led to a high rate of incidents. This project is fully funded under State's Section 190 Program, Proposition 1A, CHSRA funding, Measure M, and the BNSF Railway.

**Redlands Rail** – The Redlands Rail ARROW project will connect the new downtown San Bernardino Transit Center with the University of Redlands along nine miles of existing ROW. The service is planning on Hybrid Rail and Electrical Multiple Units (EMU) and construction began in the summer of 2019. Revenue service is scheduled for 2022. As part of this project, SBCTA will implement a zero emission passenger rail trainset, a first in North America. There have been two recent studies looking at extending Redlands Rail to the west to make a direct connection to Ontario International Airport (ONT) and serve cities along the Metrolink San Bernardino Line in San Bernardino County, and possibly downtown Los Angeles. Hybrid Rail could operate along the existing Metrolink tracks, thereby providing increased rail service very cost effectively. The Los Angeles-San Bernardino Intercounty Transit and Rail Study also looked at extending the Gold Line east from Montclair to ONT.

**Coachella Valley Rail Service** – RCTC is currently conducting a Program Environmental Impact Statement/Program Environmental Impact Report (PEIS/EIR) for the future Coachella Valley rail service between downtown Los Angeles and Indio via Fullerton. After completing the Draft EIS/EIR, a Service Development Plan will be prepared to conceptualize how the service would operate and what infrastructure improvements would be needed to accommodate the new intercity passenger rail service.

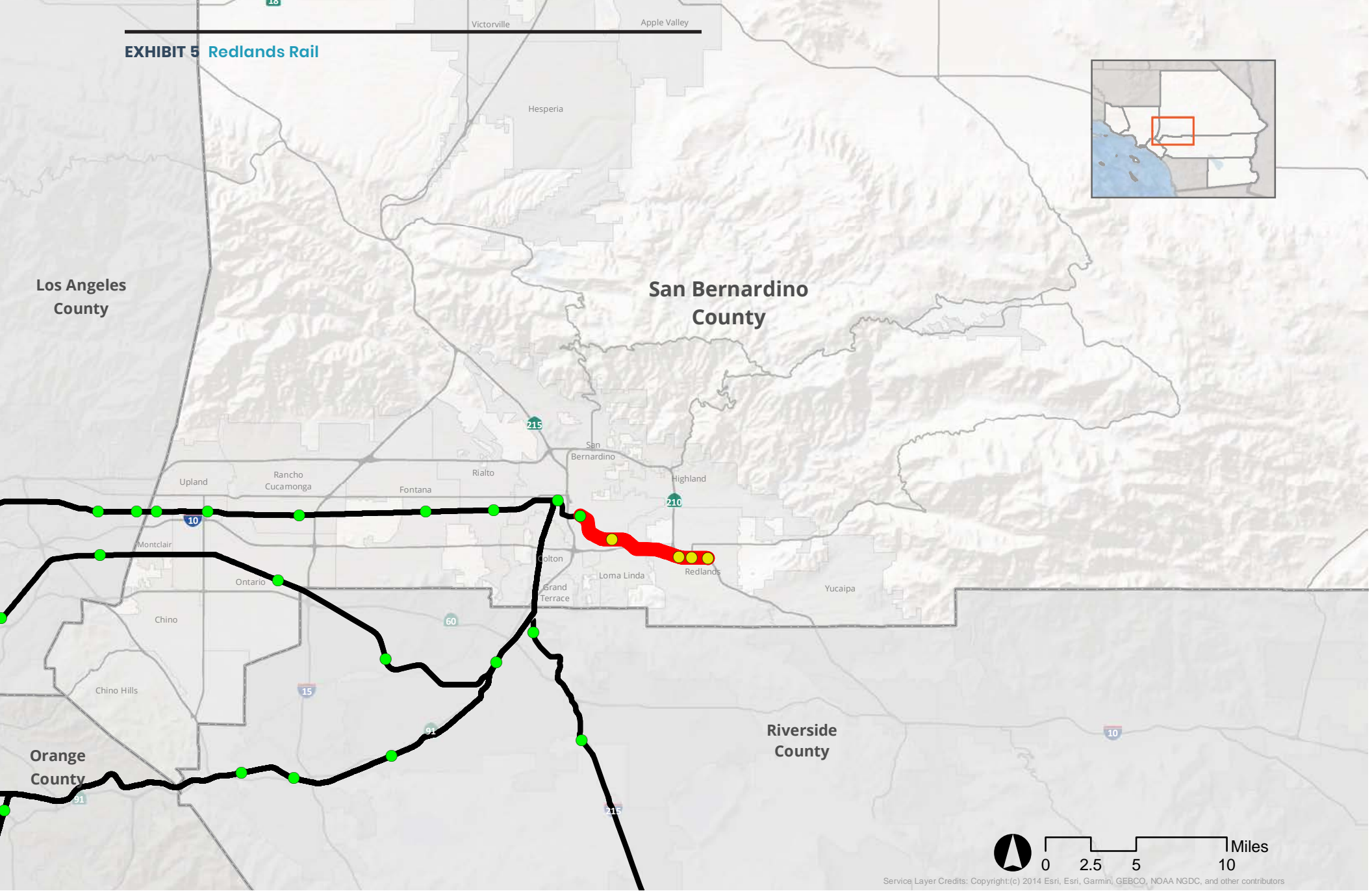
**Laguna Niguel/Mission Viejo Siding** – OCTA, in coordination with Metrolink and the cities of Laguna Niguel and San Juan Capistrano, is adding 1.8 miles of new passing siding railroad track between the Laguna Niguel/Mission Viejo Metrolink Station and Trabuco Creek in San Juan Capistrano. The passing siding track will run adjacent to the existing track, connecting to it at each end, which will allow trains traveling in opposite directions to pass each other without stopping. The project will reduce delays, increase safety and provide more reliable rail service.

**Raymer to Bernson Double Track** – This project will add 6.4 miles of second mainline track between Control Point (CP) Bernson (near De Soto Ave) and CP Raymer (near Woodley Ave) in the San Fernando Valley. The project also includes grade crossing equipment upgrades, track controls and road improvements. This will complete a continuous double track segment along the LOSSAN Corridor in the San Fernando Valley improving safety, capacity, and operational reliability for the Pacific Surfliner and Metrolink Ventura County Line. Also as part of this project, nine at-grade rail crossings and two bridges will be reconstructed, and a second side platform and a grade-separated pedestrian underpass will be built to connect the existing and new platform at the Northridge Station.

**Van Nuys Station Platform** – This recently completed project replaces the former single-sided platform with a new center platform to better serve and enhance safety for passengers and improve the flow of Metrolink and Amtrak trains. In addition, it provides grade-separated pedestrian access from the platform to the station building and parking lot, and includes civil works/track improvements to accommodate the station modification.

**Brighton to Roxford Double Track** – The Brighton to Roxford Double Track Project will construct 10.4 miles of new double track beginning at Control Point (CP) Brighton in the city of Burbank and ending at CP Roxford in the city of Sylmar on the Metrolink Antelope Valley Line. The project also includes construction of second side platforms at the Hollywood Burbank North Station and the Sylmar/San Fernando and Sun Valley Stations, and will upgrade 16 at-grade crossings. The Brighton to Roxford Double Track project is not fully funded and may be implemented in segments per Metro's

**EXHIBIT 5 Redlands Rail**



- County Boundaries
- City Boundaries
- Freeway
- Existing Metrolink
- Existing Metrolink Stations
- Redlands Rail
- Redlands Rail Stations

Source: SCAG, 2019

Service Layer Credits: Copyright:(c) 2014 Esri, Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Antelope Valley Line Study.

**Doran Street Grade Separation** – The Doran Street at-grade crossing has been identified as one that would gain the most significant benefit from safety enhancements in Los Angeles County. In addition, Doran Street is closely located to the Broadway/Brazil crossing, which is also heavily used by trucks and cars and may be a part of this project. Approximately 90 Metrolink, Amtrak, and UP Railroad trains use these crossings daily, and the corridor is anticipated to be part of the CA HSR alignment.

**Lone Hill to White Double Track** – This is a 3.9 double track project in eastern Los Angeles County that was a major recommendation of the Metrolink San Bernardino Line study that was conducted jointly by Metro and SANBAG. 70 percent of the San Bernardino Line is single-track operation and this project would significantly improve capacity. Environmental and preliminary design have been completed.

**Placentia Metrolink Station** – The downtown Placentia Metrolink station will be a new station added to the Metrolink network, serving the Metrolink 91/PVL Line. The schedule for construction is to be determined.

## STRATEGIES

## NEEDS ASSESSMENT

## UNSERVED MARKETS

### LANCASTER TO BAKERSFIELD

The most significant north/south rail gap in the State of California and in our region is the Bakersfield to Lancaster passenger rail gap through the Tehachapi Mountains. Currently, UP has a one-track freight operation through this corridor that contains the renowned Tehachapi Loop. While Amtrak's Pacific Surfliner and San Joaquin services are the second and third busiest Amtrak routes in the country, respectively, rail passengers connecting from one of these lines to the

other line are forced to transfer to Amtrak Thruway buses.

### LOS ANGELES TO COACHELLA VALLEY

The second most significant gap in rail service in our region behind the Antelope Valley to Bakersfield gap is between Los Angeles and the Coachella Valley via the Inland Empire. The Coachella Valley-San Geronio Pass Passenger Rail Service now under development would close this gap. Currently, rail service between downtown Los Angeles and the Coachella Valley is only provided three days a week with a very unworkable schedule as part of Amtrak's interstate Sunset Limited service. 130,000 daily trips pass through the San Geronio Pass each weekday along I-10, and this is forecasted to grow by 47percent by 2035.<sup>2</sup> RCTC is currently conducting a Program Environmental Impact Statement/ Program Environmental Impact Report (PEIS/EIR) and Service Development Plan for the future Coachella Valley rail service between downtown Los Angeles and Indio via Fullerton. This planning exercise will conceptualize how the service would operate and what infrastructure improvements would be needed to accommodate the new intercity passenger rail service. RCTC is expecting a Record of Decision in the spring of 2021.

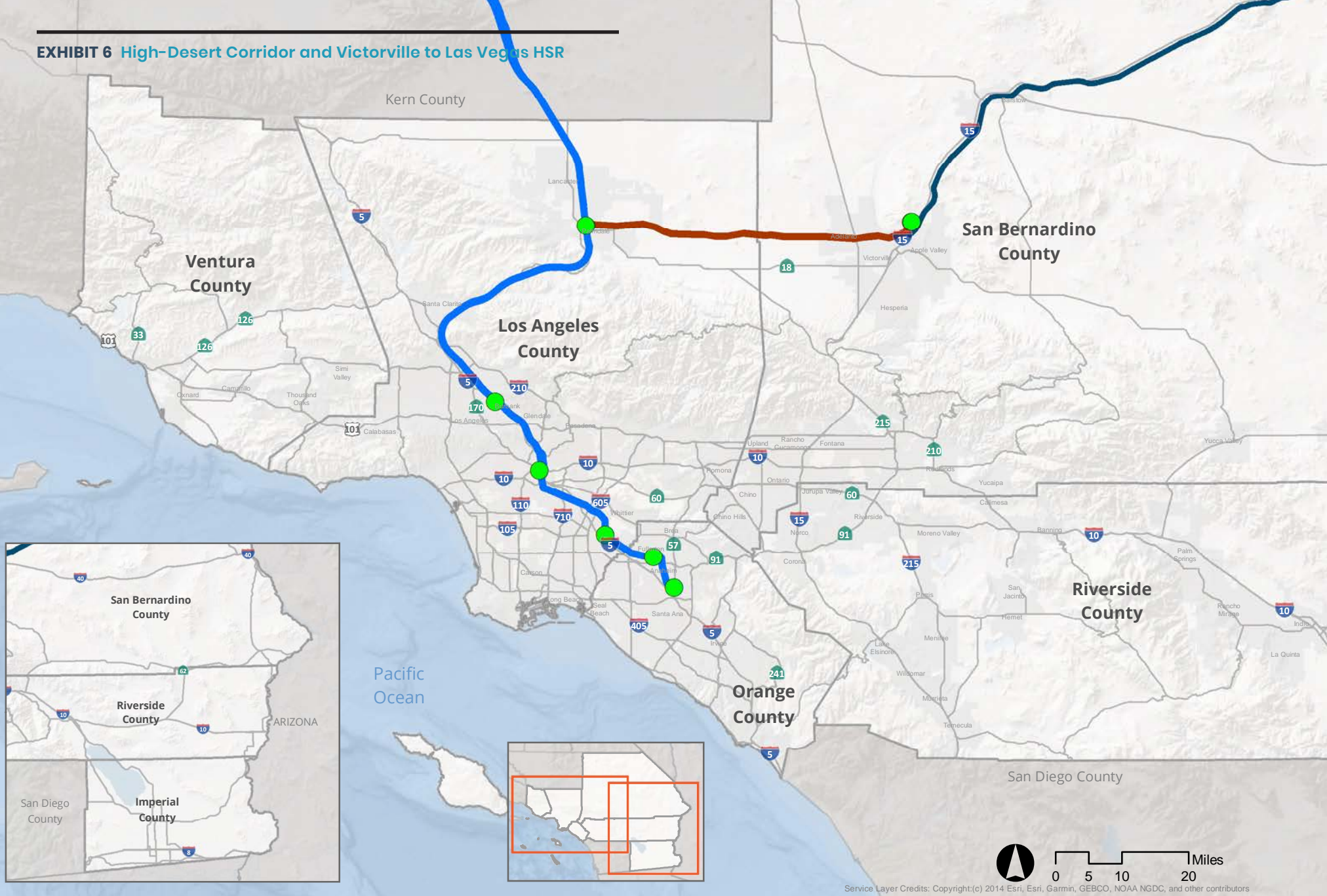
At this point in time, potential station stops for the rail service are still not defined and will be determined later. Service would most likely be operated by Amtrak with initially two if not three daily round trips. This service would potentially connect with and be a part of a future Southwest HSR network.





### LOS ANGELES TO LAS VEGAS

Passenger service was last provided between Los Angeles and Las Vegas by Amtrak on its Desert Wind interstate service that ceased operations in 1997. Currently, DesertXpress Enterprises LLC dba XpressWest is planning high-speed rail service connecting Southern California and Las Vegas along the I-15 corridor beginning as soon as 2023. It will use steel wheel on steel rail technology with

<sup>2</sup> RCTC

**EXHIBIT 6 High-Desert Corridor and Victorville to Las Vegas HSR**



 Southern California to Las Vegas HSR 
  CA HSR Phase 1 Plan 
  High Desert Corridor Rail Alternative 
  HSR Stations

electrical propulsion operating at speeds of up to 180 mph to make the trip between Victorville and Las Vegas in approximately 90 minutes. The tracks will largely be within I-15's ROW with no intermediate stops or at-grade crossings. XpressWest is planning daily service with initial service every 45 minutes and potentially increasing to service every 22 minutes as ridership grows. XpressWest had been completely permitted for the project in 2011. SCAG will continue to monitor the project's planning activities.

## HIGH-DESERT CORRIDOR (HDC)

The HDC is an approximately 60-mile corridor that would connect the Antelope and Victor Valleys between SR 14 and I-15. It is a multi-purpose corridor with up to eight lanes that includes freeway/expressway, a possible toll facility, high-speed rail and bike lanes. This corridor will allow a connection between the CA HSR in Palmdale with high-speed rail service between Victorville and Las Vegas, and eventually other Southwest destinations such as Phoenix. The project is being funded through a variety of sources, including Measure R in Los Angeles County, Measure I in San Bernardino County and state and federal funds. Currently, the funding is only available for the environmental study phase and additional funding is required to enter in to the engineering and construction phases.

## SOUTHWEST HIGH-SPEED RAIL NETWORK

In September 2014 the FRA released the Southwest Multi-State Rail Planning Study. The study analyzed candidate rail corridors in several Southwest states: California, Nevada and Arizona as the primary area, and New Mexico, Utah and Colorado as the "extended" area. This was FRA's first "High-Performance Rail" (HPR) network study with the purpose of developing a toolkit for conceptual planning of HPR networks in multi-state and mega-city regions. It included ridership projections and economic benefit output at the sketch planning level. It included three HPR service tier levels including: 1) "Core Express" with top speeds greater than 125 mph, 2) "Regional" with top speeds of 90 mph to 125 mph and 3) "Emerging/Feeder" with top speeds up to 90 mph. The CA HSR and Los Angeles to Las Vegas corridors were identified as Core Express corridors

in the study. The study also concentrated on the complexities of multi-state and jurisdictional rail planning and two key recommendations came out of the study including: 1) Convening a voluntary California-Arizona-Nevada Passenger Rail Policy and Planning Group to continue the momentum of the study and to engage stakeholders and elected officials in the region, and 2) Forming a Blue Ribbon Commission to guide a Phoenix-Southern California Corridor study over an 18-month schedule.

## COAST DAYLIGHT

The Coast Daylight is a proposed passenger rail service operating between Los Angeles and San Francisco. It would operate one round trip per day, but unlike the Coast Starlight which serves Oakland and Emeryville and not San Francisco, this route would travel up the San Francisco peninsula from San Jose and serve Santa Clara, Palo Alto, Millbrae and downtown San Francisco. The original Coast Daylight was privately operated and ran for decades before ending service in 1971 when passenger rail service was nationalized via Amtrak.

A coalition of coastal counties and SLOCOG has been working together to implement the Coast Daylight, and the Coast Rail Coordinating Council (CRCC) formed for this effort has been meeting on a quarterly basis. The LOSSAN Board, as well as over 20 agencies along the corridor, have passed resolutions of support for the Coast Daylight service. The significant challenges for this potential new service include funding for operations and rolling stock, and negotiations with the UP for operating rights. Caltrans DMRT completed a Service Development Plan in May of 2013, and a PEIR/EIS has been completed since then for the Salinas, CA to San Luis Obispo, CA portion of the route.

## LOSSAN CORRIDOR COMMUTER RAIL SERVICE

While the Amtrak Pacific Surfliner provides intercity service (and some commuter service) along the Santa Barbara to San Diego corridor, on the southern end both the commuter services operating along it, Metrolink and Coaster, terminate in Oceanside, CA. The 2012 LOSSAN Strategic Implementation Plan calls for both Metrolink and Coaster to operate through



service from Los Angeles Union Station to San Diego's Santa Fe Depot, so that more one-seat rides are available to commuters, further increasing the incentive to reduce SOV travel and reduce air pollution and GHG emissions. In April 2018, early morning Pacific Surfliner service began through a partnership between the Santa Barbara County Association of Governments (SBCAG), the California State Transportation Agency and the LOSSAN Rail Corridor Agency to provide a service for Ventura County residents commuting to Santa Barbara County for work.

## ANTELOPE VALLEY TO KERN COUNTY

The Kern County COG completed a Commuter Rail Feasibility Study in the summer of 2012 that looked at establishing passenger rail service from Kern County south into the Antelope Valley connecting with the Metrolink system. The study also had recommendations on establishing new commuter rail service along several corridors within Kern County which would also act as connecting feeder service to the CA HSR Bakersfield station when in operation. The study recommended extending the Metrolink Antelope Valley Line from Lancaster to Rosamond. Within Kern County, the Rosamond corridor includes California City and Mojave, with a connection in Mojave to Bakersfield.

An additional reason Kern County is interested in Metrolink service to Rosamond is that the main entrance to Edwards Air Force Base (AFB) is via Rosamond Blvd., directly east of downtown Rosamond. Approximately 8,000 civilian employees work there, with about 40percent commuting from Palmdale and Lancaster. Kern County COG has identified a station site in Rosamond that is approximately 11.5 miles from the existing Lancaster Metrolink station. The study estimates 275 daily boardings at the station in 2035, and 335 with the CA HSR in operation. These numbers are reasonable demand for establishing commuter rail service in the area. The study estimates a conceptual capital cost of a new station and surface parking in Rosamond at about \$3 million. The current Lancaster station serves about 425 boardings per day, and some of these boardings are Kern County residents. KernTransit currently operates Line 250 between these two points, but with only five round-trips throughout the day the schedule is not amenable to Edwards AFB commuting patterns. Additionally, Edwards AFB is a huge facility with many different employment

locations within it, and there is an issue of how employees get around without their own personal vehicles.

In discussions between SCRRA and Kern County COG, SCRRA suggested that rather than extending the current Antelope Valley Line to Rosamond (the Antelope Valley Line currently operates nine daily round trips), it could be feasible to establish new service just between Lancaster and Rosamond with four daily round trips. SCRRA estimated annual O&M costs at \$2.6 million, not including insurance, security and UP track access fees. Capital costs at Lancaster include additional storage tracks at the Metrolink layover facility and a crossover track to access the UP track. These costs were not estimated at that time, nor were ridership and revenue estimated. Kern County and Metrolink would have to negotiate with Union Pacific to operate along this corridor. In addition, Kern County may have to join the SCRRA JPA, at least as an ex-officio member.

## CAPACITY CONSTRAINTS

Passenger rail in the SCAG region is characterized by significant capacity constraints. These capacity constraints serve as significant barriers to growing rail ridership. Most notable of these constraints is the physical infrastructure of the track. Seventy percent of the track ROW that Metrolink operates on is one-track operation. This limits the volume of trainsets that may be placed into service, and also makes certain train trip schedules longer when a train moving in one direction has to pull off onto a siding to allow another train to pass.

In addition to the one-track operation environment, several of Metrolink's lines are owned by the freight companies, BNSF and UP. The Ventura County Line is owned by UP west of Moorpark, the 91/PVL Line is owned by BNSF between downtown Los Angeles and Riverside, and the Riverside Line is owned by UP. SCRRA operates service on these lines through shared-use agreements. The shared use agreement on the Riverside Line is the most constrained commuter rail service allowing just six round trips per day.

Furthermore, the LINK US project also demonstrates another capacity constraint in the SCAG region. Constructing the run-through tracks will allow for increased efficiencies and service that would significantly decrease travel

time, air pollution and GHGs. The LINK US project, together with the Metrolink SCORE project described on page 6, will greatly reduce capacity constraints in the passenger rail infrastructure in the SCAG region and provide more frequent and reliable service.

## METROLINK STRATEGIC ASSESSMENT

SCRRA adopted its 2015 Strategic Assessment in the summer of 2015. This was SCRRA's first long range plan since 2007. The effort took a comprehensive look at a variety of the agency's organizational elements including a strengths, weaknesses, opportunities and threats analysis (SWOT analysis), operations, maintenance, marketing, security, as well as an assessment of how regional travel in Southern California is evolving. Ridership demand and service levels were forecasted out up to 2025.

## SOUTHERN CALIFORNIA HIGH-SPEED RAIL MEMORANDUM OF UNDERSTANDING

The CA HSR blended approach involves improving existing passenger rail facilities in Southern California and the Bay Area (the "bookends") to connect to the CA HSR as part of a phased implementation strategy to deliver the full system while reducing costs and environmental impacts. The development of the 2012 RTP/SCS involved debate and discussion by the SCAG Regional Council on whether to include Phase 1 of the CA HSR in the 2012 RTP/SCS. Based on these discussions, the SCAG Regional Council agreed to include Phase 1 in the 2012 RTP/SCS and the CHSRA committed to spend \$500 million in Prop. 1A funds on these early investments, plus \$500 million in matching funds, to improve the region's existing passenger rail system as part of the blended approach. This commitment by CHSRA and the Southern California transportation agencies was formalized in a memorandum of understanding (MOU) between CHSRA, Metrolink, SCAG, SANDAG, Metro, RCTC, SANBAG and the City of Anaheim. Key principles of the MOU include:

- The CHSRA agrees to fund an additional \$1 billion in early investments in southern California above and beyond the prop 1a \$950 million

interconnectivity projects

- A candidate project list is incorporated into the mou for the \$1 billion in early investments to be funded by 2020
- Performance criteria are agreed on and also incorporated into the mou for selecting the projects from the candidate project list
- An agreed upon process for selecting the prioritized project list of these early investments

The MOU includes a candidate project list to which \$1 billion will be programmed in order to provide interconnectivity to the CA HSR project, and improve the speed, capacity and safety of our existing passenger rail network. An MOU Working Group met over several months in 2012 and developed the project list using agreed-upon criteria. The list includes 74 projects totaling \$3.982 billion. While this is well over \$1 billion, it represents a comprehensive project list that shows the need for capital improvements to improve speed and service for our region's existing rail network as well as to deliver the blended approach. The twelve criteria are:

- Project Readiness by 2020

**TABLE 2 Southern California HSR MOU Projects**

Cities	Projects
Los Angeles	LINK US
Los Angeles	CP Brighton to CP Roxford Double Track
Orange	State College Blvd. Grade Separation
Riverside	McKinley St. Grade Separation
San Bernardino	CP Lilac to CP Rancho Double Track
San Diego	San Onofre to Pulgas Double Track

Source: SCAG

- Within Statutory Requirements for Prop 1A Funding for CA HSR Phase 1
- Regional Connectivity to the CA HSR System and Linkages
- Improved Operations and Speed
- Enables development of CA HSR system
- Independent Utility
- Enhanced Capacity
- CPUC Hazard Ranking (Section 190)
- Safety Improvements to Increase Speed
- Leverages Local Investment
- County Priority
- Top County Priority

The top six projects on the list are each of the five county's (Los Angeles, Orange, Riverside, San Bernardino and San Diego) top projects, plus the LINK US project due to its regional significance and benefit to all counties.

In September 2019, CHSRA executed an MOU with L.A. Metro and the California State Transportation Agency (CalSTA) for the LINK US project establishing a commitment between these three agencies to work together towards executing a funding agreement. An executed funding agreement is in place for the Rosecrans/Marquardt grade separation project. These two projects are receiving \$500 million total--\$427 for LINK US and \$73 million for Rosecrans/Marquardt.

## TRANSIT CONNECTIVITY

Improving connectivity to our passenger rail network is a major goal for our region—not only between existing and future rail services but also with local transit serving rail stations. Better connecting transit including rail feeder bus services in our region to passenger rail stations would reduce the incentive for SOV travel. It is prevalent in our region not to time bus arrivals and departures to train arrivals and departures, and establishing services such as OCTA's Stationlink bus lines would provide this incentive. Finally, there is still

little BRT or BRT Light services in our region outside of Los Angeles County and establishing these to serve rail stations, such as the current Omnitrans sbX Green Line and RTA's RapidLink Line 1, will meet this goal. Strategies for increasing connectivity also include fare agreements and universal smart cards accepted by all connecting carriers.

## FIRST/LAST MILE STRATEGIES

First/last Mile strategies are designed to increase the range and desirability of accessing passenger rail station access by removing bike and pedestrian barriers around transit and rail stations and providing alternatives to access transit and rail stations other than SOV travel. Increased TOD and first/last mile planning and investments are crucial to passenger rail station area planning. Increased and effective TOD improves our region's jobs/housing balance, reduces VMT and air pollution emissions and GHGs.

Strategies include adequate sidewalk facilities, bike facilities such as bike lanes and lockers, bike sharing and car sharing services such as Uber and Lyft. These strategies can increase the effective catchment areas of rail stations from less than ¼ mile to ranges considerably greater. Many cities with Metrolink stations are looking at first/last mile strategies. For more information on Active Transportation projects, please see the Active Transportation report.

## COOPERATIVE FARE AGREEMENTS AND MEDIA

Cooperative fare agreements and media offer opportunities for increasing rail ridership and attracting new riders. For example, the Rail2Rail pass allows Amtrak Pacific Surfliner Monthly Pass holders to ride any Metrolink train and Metrolink Pass holders to ride any Pacific Surfliner train within the station pairs on their pass at no additional charge. Agreements like this one could be expanded once the CA HSR project is built.

Other notable fare policy efforts include the first Metrolink e-ticketing program which continues to grow as a percentage of ticket sales. Also, the LOSSAN managing agency received a TIGER grant in 2015 to reestablish a cooperative fare agreement with local connecting transit agencies for free transferring to

and from the Pacific Surfliner. Metrolink has maintained agreements with 32 connecting local transit operators in Southern California for many years to allow passengers with Metrolink tickets to transfer for free to and from connecting local transit services.

These cooperative fare agreements and media efforts include effective marketing across passenger rail markets and transit riders. Metrolink has been successful with its special service trains for both Dodgers' and Angels' games, and other special events. These types of services introduced passenger rail to the public that can lead to new regular customers.

## AIRPORT GROUND ACCESS

The SCAG region is served primarily by LAX, Ontario International Airport (ONT), Hollywood Burbank Airport (BUR), John Wayne Airport (SNA) and Long Beach Airport (LGB). Only BUR is directly connected to rail with two rail stations served by Amtrak and Metrolink. LAX, ONT and Palmdale Regional Airport (PMD) are very close to rail lines, roughly 2.5 to 3.5 miles, but fall short of a rail connection. LAX is closest to the Green Line and has a bus connection that serves the terminals. LGB and SNA airports are even farther from rail.

Given this, transit's mode share to airports in our region is extremely low. At LAX and BUR, the transit mode share is approximately 1 percent to 2 percent, with even lower shares at ONT, SNA and LGB. Transportation network companies (TNCs) such as Lyft and Uber, shared-ride vans, long-distance shuttles, taxis, and limousines provide 33 percent of passenger trips to and from LAX, which demonstrates the potential for transit to increase its share.

Funded by Measure M, and one of the 28 by 28 projects, Los Angeles World Airports (LAWA) is now constructing the Automated People Mover, which will serve the airport terminals, the consolidated rental car facility, and the Green and Crenshaw light rail lines at the 96th Street station beginning in 2023. Currently, the LAX FlyAway from Union Station has through-ticketing for Metrolink riders via the Metrolink fare system.

ONT is between two Metrolink corridors, the San Bernardino Line and the Riverside Line; and Amtrak's Sunset Limited runs on the northern border of

ONT's short-term parking lot, within walking distance to the terminals. The Riverside Line runs just south of the airport and its East Ontario station is about one and a half miles from the terminals, but currently there are no bus connections between ONT and any of the nearby stations on these three lines. SANBAG completed an ONT ground access study in 2015 that included several short-term bus connections and long-term rail connections including the Metrolink San Bernardino Line and the Gold Line extension 2C. The ONT ground access study recommended a rail connection once ONT reaches 15 million annual passengers, and 2020 Connect SoCal contains a rail connection to ONT from the Metrolink San Bernardino Line in the constrained plan. ONT, SBCTA and Metrolink recently began a new connectivity pilot program offering free Lyft rides (up to \$35.00) to and from the East Ontario (Riverside Line), Montclair, Upland, or Rancho Cucamonga stations (San Bernardino Line).

The SCAG Los Angeles-San Bernardino Transit and Rail Connectivity Study completed in 2018 also analyzed several rail, bus and BRT connections to the airport, including the Gold Line extension from Montclair, an easterly extension of the Redlands Rail Arrow service, and a rail spur from the Metrolink San Bernardino Line.

BUR's Regional Intermodal Transportation Center (RITC) opened in 2014 and includes a consolidated rental car facility, long-term parking, a bus transit center, and a grade-separated moving walkway between the terminal and the RITC. Phase 2 of the project will extend the moving walkway over West Empire Ave. to link directly with the existing Amtrak and Metrolink station. With completion of the Hollywood Burbank Airport North Metrolink station on its eastern border in 2018, BUR is served by two rail stations. This station is served by Metrolink's Antelope Valley Line and potentially the future CA HSR.

John Wayne airport (SNA) in Orange County is connected to the Tustin Metrolink Station via the iShuttle Route 400A. This shuttle operates bi-directionally on weekday mornings and evenings and is free with a Metrolink ticket.

PMD currently offers no commercial air service, but is configured for a significant commercial operation presence, especially as the Antelope Valley grows. It will have the benefit of being within three miles of the future CA HSR and the Metrolink Antelope Valley Line which is planned for future speed and

service improvements. It will also be within three miles of the potential future High-Desert Corridor rail service. All three of these rail services will serve the Palmdale Transportation Center and future high-speed rail station, which could connect to PMD via bus shuttle services.

For more information on airport ground access, please see the Aviation report.

## FUNDING

The lack of dedicated funding streams is a major barrier to expanding rail infrastructure in our region. Currently, our progress is measured only on an incremental basis. Passenger rail has traditionally lacked dedicated funding streams in our region and nation. Amtrak is funded on a year by year basis by the U.S. Congress, usually resulting in funding amounts insufficient to meet state of good repair needs or to grow their levels of service and network.

Progress in funding has been made since the 2016 RTP/SCS. SB 1 was approved by voters in April of 2017. In addition to capital funding opportunities for rail, for the first time it provides an on-going dedicated funding stream for passenger rail operations. Cap-and-Trade's Transit and Intercity Rail Capital Program also has provided new funding for rail projects since it was established.

## BASELINE FORECASTS

### BASELINE AND FUTURE DEMAND

It is expected that passenger rail service will grow significantly through the 2045 horizon year of Connect SoCal. The 2012 LOSSAN Strategic Implementation Plan (LOSSAN SIP), the 2015 Metrolink Strategic Assessment and the SCORE program forecast significant increases in passenger and service volumes.

As improvements to our passenger rail system continue through 2045, ridership will continue to grow. As noted earlier, both Metrolink and the Pacific Surfliner have seen steady growth except during the Great Recession. The Metrolink Strategic Assessment forecasts significant growth in daily boardings from 41,000 currently to 55,000 by 2025. The LOSSAN SIP forecasts significant growth

as well from today's approximately 3,000,000 yearly to 4,700,000 yearly by 2030.

Other transit investments during the term of 2020 Connect SoCal will provide connectivity to passenger rail services, highlighting the importance of implementing a robust level of multi-modal interconnectivity. New urban rail, BRT/BRT Light, express and local bus services are implemented in the plan which will provide further connectivity to our region's passenger rail network, delivering new and a greater number of commuters to the overall transportation system.

## CONSTRAINED PLAN PROJECTS

The Constrained Plan represents the financially constrained projects included in Connect SoCal, above existing commitments programmed in the Federal Transportation Improvement Program (FTIP). The projects selected for inclusion in the Constrained Plan are detailed below.

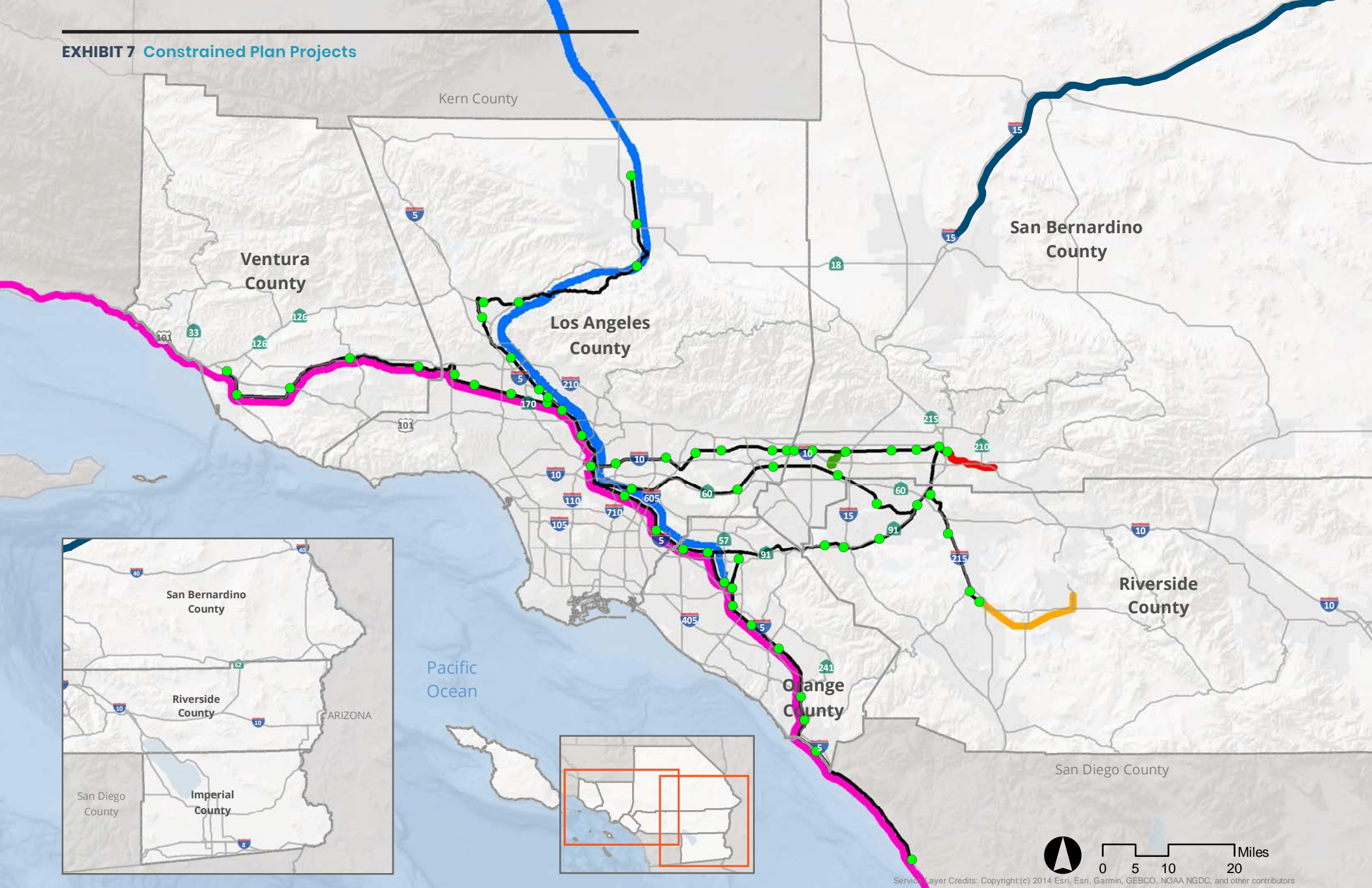
### CALIFORNIA HIGH-SPEED TRAIN PHASE 1









The CA HSR Phase 1 is from San Francisco to Anaheim via L.A. Union Station, and in our region from the Kern County line to Anaheim via L.A. Union Station with stops in Palmdale, Hollywood Burbank Airport, L.A. Union Station, Norwalk/Santa Fe Springs, Fullerton and Anaheim. This project was first included in the Constrained Plan with the 2012 RTP/SCS and was conditional upon the CHSRA entering into an MOU with Southern California transportation agencies to invest \$1 billion (including local match) in CA HSR Proposition 1A funding into the LOSSAN and Metrolink corridors by 2020.

### AMTRAK LOSSAN CORRIDOR

The CA HSR Blended approach calls for capital investments to the LOSSAN and Metrolink corridors that could ultimately enable operation of high-speed service on some segments that would meet the FRA criteria for high-speed rail (110 mph or above). The Southern California High-Speed Rail MOU identified 74 capital projects with a cost of \$3.9 billion that include grade separations, sidings,

**EXHIBIT 7 Constrained Plan Projects**



-  Southern California to Las Vegas HSR
-  Pacific Surfliner (Amtrak)
-  CA HSR Phase 1 Plan
-  Existing Metrolink
-  Connection to Ontario Intl. Airport
-  Metrolink San Jacinto/Hemet Extension
-  Redlands Rail
-  Existing Metrolink Stations



**TABLE 3 Metrolink SCORE Projects**

Projects	
Line Capacity Enhancements (Phase 1)	
1	Marengo Siding Extension
2	El Monte Station Ped Improvements and Siding Extension
3	Double Track CP Central to East of Upland Station
4	Rancho Siding Extension from MP 39.2 to CP Archibald
5	CP Lilac to Rialto Station Double Track
6	Signal Respacing: Marengo to Hondo
7	Signal Respacing: Bassett to Vista
8	Signal Respacing: Kaiser to Vernon
9	Signal Respacing: Central to Nolan
10	Signal Respacing: Colonia to Burbank
11	Simi Valley Double Track and Platform Expansion
12	Chatsworth Station and Signal Improvements
13	Acton Downtown Double Track
14	Vista Canyon Station and Siding, including station design
15	Santa Clarita Double Track from CP Lang to CP Canyon
16	Balboa Siding Extension and Speed Improvements
17	Brighton to Roxford Double Track
18	Burbank Junction Speed Improvements
19	Signal Respacing: Lancaster to McGinley



**TABLE 3 Metrolink SCORE Projects - Continued**

Projects	
20	Signals in Orange County (Atwood - Orange)
21	Reconfigure Irvine Station and add 4th track
22	Signal Respacing: La Palma to College
23	Signal Respacing: Maple to Solow
24	Signals in OC (Avery - Songs)
25	Orange/Olive Junction and Wye
26	CP Songs to San Mateo Creek
27	CMF Tail Track North End Connector
28	Signal Improvements Burbank to LA
29	LA - SB Dedicated Passenger Corridor: Hobart through Commerce
30	LA - SB Dedicated Passenger Corridor: Hobart Yard Relocation
31	Rosecrans/Marquardt Grade Separation
32	LA - SB Dedicated Passenger Corridor: Fullerton Jct. Reconfiguration
33	Riverside Downtown Track and Platform Improvements
<b>LINK Union Station (Phase 1)</b>	
34	Link US Phases 1, 2, and 3
<b>Line Reliability Enhancements</b>	
35	Lone Hill Avenue to CP White Double Track
36	Rialto Station to CP Rancho Double Track
37	Raymer to Bernson Double Track

**TABLE 3 Metrolink SCORE Projects - Continued**

Projects	
38	Moreno Valley/March Field Station and Track Upgrades
<b>Maintenance Facilities (Phase 1)</b>	
39	Irvine Maintenance Facility - Phase 1
40	Eastern Maintenance Facility Buildout
41	Santa Clarita Area Maintenance Facility Environmental, Design, and Property
42	Lancaster Outlying Point Storage Tracks, and Design for Maint. Facility
43	Moorpark Area Maintenance Facility Environmental, Design, and Property
44	East Ventura Area Maintenance Facility Environmental, Design, and Property
45	South Perris Light Maintenance Facility Environmental, Design, and Property
<b>Grade Separation Projects (Phase 1)</b>	
46	Doran Street and Broadway/Brazil Grade Separation
47	Etiwanda Ave Grade Separation
<b>Complementary System Enhancement Projects</b>	
48	I-10 Express Bypass Study
49	Perris Valley Line Service Improvement and Capacity Study
50	Ventura County Line Service Improvement and Capacity Study
51	Riverside Line Service Improvement and Capacity Study
52	Ontario Airport Connection
<b>Line Capacity Enhancements (Phase 2)</b>	
53	Moorpark to Simi Valley Double Track, and replace Arroyo Simi Bridges

**TABLE 3 Metrolink SCORE Projects - Continued**

Projects	
54	New Siding between Tunnels 27 and 28
55	Palmdale to Lancaster Double Track
56	Double Track CP Ravenna to Russ
57	Double Track between CP Saugus and CP Hood
58	Orange - Olive Junction Improvements and Wye
59	Third Track between Tustin area and Laguna Niguel Area
60	Double Track CP Songs to San Mateo Creek Lagoon
61	Perris Valley Line - Second Main Track
62	LA - San Bernardino Dedicated Passenger Corridor: Construct 3rd Main Track
<b>LINK Union Station (Phase 2)</b>	
63	Link US Phase 4 - Build Out
<b>Maintenance Facilities (Phase 2)</b>	
64	Santa Clarita area Maintenance Facility Buildout
65	Lancaster Outlying Point Storage Tracks, and Maint. Facility
66	Moorpark Area Maintenance Facility Buildout
67	South Perris Light Maintenance Facility Buildout
<b>Grade Separation Projects (Phase 2)</b>	
68	Pioneer Blvd Grade Separation
69	Norwalk Blvd/Los Nietos Road Grade Separations

**TABLE 3 Metrolink SCORE Projects - Continued**

Projects
<b>Unmapped Projects</b>
LA - SB Dedicated Passenger Corridor: 3rd Main Track on the BNSF SB route
Double Track Moorpark to Simi (MP 438.1-427.2)
Siding between Tunnels 27 & 28 (MP 443.8-443.24)
Double Track Palmdale to Lancaster (MP 76.2-67.6)
Double Track Ravenna to Russ (MP 52.45-47.0)
Design for 4th main track on west end Pico Rivera to Santa Fe Springs
Systemwide Rolling Stock/Fleet
Level Boarding Platform Study, Location TBD
Systemwide Electrification Study and Rail Fleet Upgrades
Systemwide Higher Reliability/Capacity Train Control

Source: SCAG Scenario Planning Model

double-tracking, station improvements and signal system improvements.

In addition to Prop 1A funding, Amtrak, Metrolink and the LOSSAN Rail Corridor Agency stakeholders are continuously working towards speed, safety and service improvements. The LOSSAN Corridor SIP, adopted in May 2012, the Metrolink Strategic Assessment, adopted in 2015, and the Metrolink SCORE project identify an array of capital improvements towards this end. The plans also identify programs and policies to better coordinate all rail services in the rail corridors and aim to increase ridership and develop new markets

## METROLINK SCORE

The SCORE program is an approximately \$10 billion investment that expands capacity of the entire Metrolink system to accommodate service that is more regular and frequent, throughout the entire service day (from morning to late evening). Capital investments for SCORE include additional track (e.g., sidings, double track, triple track and quadruple track segments), improved signaling, expanded and lower emissions fleet, upgraded and enlarged maintenance facilities, grade crossing treatments and separations, fencing and safety features, features to support readiness for quiet zones, and required asset rehabilitation to sustain capacity. With the Link US project, SCORE will transform regional rail, by providing through service at Union Station. In addition to benefits to regional rail, capital investments will also benefit intercity rail and freight rail systems throughout the entire Southern California region.

## RAIL CONNECTION TO ONTARIO INTERNATIONAL AIRPORT (ONT)

The ONT ground access study recommended a rail connection once ONT reaches 15 million annual passengers. This project will connect the Metrolink San Bernardino Line to ONT via a rail spur constructed along the Deer Creek flood control channel alignment. The Los Angeles-San Bernardino Transit and Rail Connectivity study also studied this connection. Further study and project development are necessary but options include extending Metrolink service as well as extending the Redlands Rail Arrow service to the west from San

Bernardino along the Metrolink San Bernardino Line.

## SOUTHERN CALIFORNIA TO LAS VEGAS HSR

The Southern California to Las Vegas HSR will connect the Victor Valley to Las Vegas, NV. The project was environmentally cleared under XpressWest and the FRA issued a record of decision (ROD) in July 2011. XpressWest is now in the process of planning, constructing and operating this service. The project will be funded through private equity participation, and XpressWest in December 2019 was conditionally approved by the CA Debt Limit Allocation Committee for private equity bond allocation.

## STRATEGIC PLAN PROJECTS

The Strategic Plan represents an unconstrained list of potential projects that the region would pursue given additional funding and commitment. The projects selected for inclusion in the Strategic Plan are detailed below.

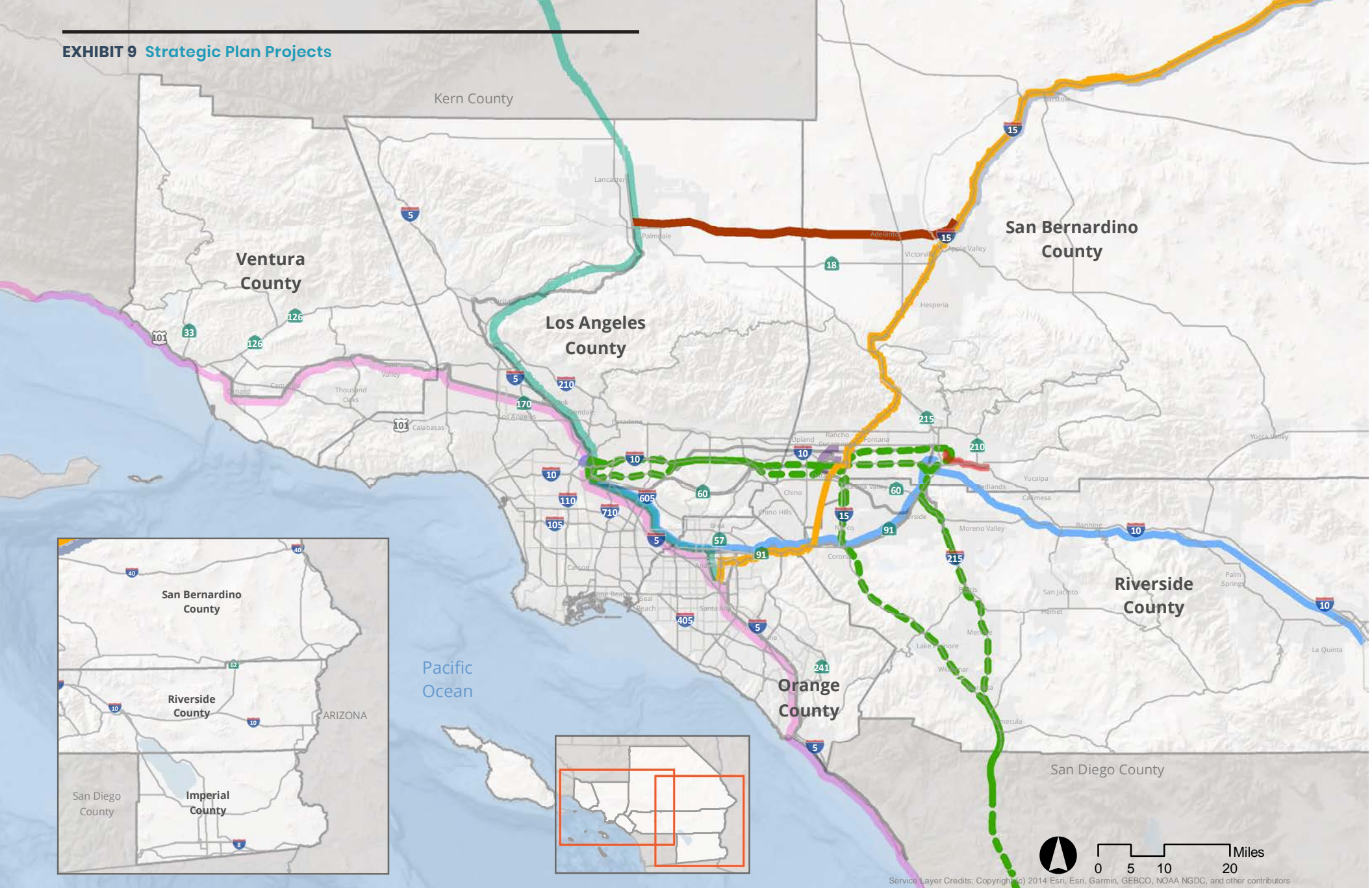
## CALIFORNIA HIGH-SPEED TRAIN PHASE 2

The CA HSR Phase 2 is from Merced to Sacramento and in our region from L.A. Union Station to San Diego through the San Gabriel Valley and Inland Empire. Phase 2 is in the alternatives analysis phase and includes alternative alignments in our region, specifically: either I-10 or SR 60 through the San Gabriel Valley, and either I-15 or I-215 from the Inland Empire to the San Diego County line. At this time, there is no schedule or identified funding for Phase 2.



## CALIFORNIA/NEVADA SUPER-SPEED TRAIN




The California/Nevada Super-Speed Train (CNSST) project would connect Las Vegas to Anaheim using maglev technology with intermediate stops in Primm, Barstow, Victorville, and Ontario. A Programmatic EIR/EIS was initiated in 2004 but was rescinded in 2014 by the FRA. Plans call for building the first 40-mile segment either from Las Vegas to Primm or Anaheim to Ontario. To date, no funds for construction have been identified.

**EXHIBIT 9 Strategic Plan Projects**



**Strategic Projects**

-  CA/NV Super-Speed Train
-  High Desert Corridor Rail Alternative

-  CA HSR Phase 2 Plan
-  CA HSR Phase 2 Alternatives
-  Coachella Valley-San Gorgonio Pass

**Constrained Projects**

-  Metrolink Network
-  Pacific Surliner (Amtrak)
-  Redlands Rail
-  CA HSR Phase 1 Plan
-  Southern California to Las Vegas HSR
-  Connection to Ontario Intl. Airport

Source: SCAG, 2019, RCTC, 2020

## COACHELLA VALLEY RAIL SERVICE

The Coachella Valley-San Geronimo Pass passenger rail service will operate between downtown Los Angeles and Indio via Fullerton. At this point in time, potential station stops for the rail service are still not defined and will be determined later. Service would most likely be operated by Amtrak with initially two or three daily round trips.

## CALIFORNIA/NEVADA SUPER-SPEED TRAIN ANAHEIM TO ONTARIO INITIAL OPERATING SEGMENT

This is a maglev project which is part of the larger Las Vegas to Anaheim project. This southernmost segment from Anaheim to Ontario is being considered as the initial operating segment of the larger project due to its strong ridership potential and regional connectivity, and its ability to operate as a stand-alone project with independent utility.

## ORANGELINE NORTHERN SEGMENT

The northern segment of the Orangeline is between Los Angeles Union Station and Santa Clarita. Eco-Rapid Transit (formerly the Orangeline Development Authority) is a joint powers authority formed to pursue development of a higher speed, environmentally friendly, technology neutral transit system from Cerritos to Santa Clarita. The southern section from L.A. Union Station to Cerritos is along the West Santa Ana Branch PE ROW that is partially funded by Measures R and M.

A series of improvements in the corridor are being planned including Southern California High-Speed Rail MOU projects, improvements to the Metrolink Antelope Valley Line as identified in the Metrolink Antelope Valley Line Infrastructure Improvement Study, and improvements identified in the BUR Ground Access Study. Thus, the Orangeline Northern Segment will benefit from a set of investments during the life of the Connect SoCal. that will improve safety, efficiency, capacity, speed and connectivity. This supports Eco-Rapid's intermediate vision of more frequent service and increased hours of operation

within the corridor.

## PLAN PERFORMANCE AND SCENARIOS

The 2020 Connect SoCal plan calls for significant investments in the region's multi-modal infrastructure. This results in significant additional choices and convenience for travelers in our region over SOV travel. In general, public transit ridership increases significantly in the region. For work trips, transit mode share increases from 4.7 percent in the baseline to 8.0 percent in the 2045 plan horizon year.

For passenger rail, there are even more significant increases. With full buildout of the Metrolink SCORE program, there is an approximately 170% increase in daily passengers, from roughly 64,000 per day in the 2045 baseline, to approximately 175,000 daily passengers.

## NEXT STEPS

### NEAR TERM PLANNING STUDIES

**Antelope Valley Line Study** – The Antelope Valley Line (AVL) Study looked at increasing the frequency of Metrolink service and developing a phased and prioritized approach for capital improvements based on benefits, costs and impacts. L.A. Metro conducted the Study and ultimately seeks solutions to realize the full potential of the AVL. The AVL is currently Metrolink's third busiest line with approximately 7,000 daily passengers. The AVL faces a variety of service challenges due to aging infrastructure through mountainous terrain, with 60 percent single track operation. The study was completed in the summer of 2019.

**Burbank-Glendale-Los Angeles Corridor Study** – L.A. Metro conducted a feasibility study to consider adding more rail service and additional rail stations in the City of Glendale and in the City of Los Angeles. This could include enhanced Metrolink service, Electric Multiple Unit/Diesel Multiple Unit (EMU/DMU) and/or Light Rail Transit (LRT) for the corridor between Los Angeles and

Burbank Airport. The Study was completed in the summer of 2019.

**SCAG Integrated Passenger and Freight Rail Forecast** – SCAG began the Integrated Passenger and Freight Rail Forecast study in the summer of 2019. This will be a novel rail study and forecast for the region, in that one study will analyze the existing conditions of the passenger and freight rail infrastructure in the region, including the rail goods movement infrastructure, and forecast future growth, provide a needs assessment, and make recommendations for shared use corridor operations and how to acquire more capital funding for the SCAG region. This study's goals are:

- Perform an existing and future conditions analysis;
- Prepare forecasts of train movements in 2045, and for up to six interim years;
- Assess intermodal facility capacity;
- Develop future scenario alternatives in goods movement trade and domestic cargo trends, as well as an emissions analysis;
- Determine track capacity improvements for future scenario alternatives;
- Estimate capital costs; and
- Develop funding and shared use strategies.

## IMPLEMENTATION MONITORING AND BEYOND 2045

SCAG will monitor progress towards Connect SoCal's passenger rail goals and objectives. While progress historically has been incremental in nature, especially in terms of rail capital and infrastructure improvements, much progress has been made recently in terms of local governance, planning, and especially new funding streams and opportunities. SCAG will continue to act as a proactive partner and advocate to rail operators and funding agencies.

Connect SoCal programs and funds an array of passenger rail projects. The Metrolink SCORE project is an ambitious set of infrastructure improvements that will result in 15 minute peak period service on much of their network.

Additionally, the trip times will be shorter since train meets will not have to occur along one-track operation. The Amtrak Pacific Surfliner service also plans additional daily trips.

In the future, the arrival of CA HSR project to the SCAG region will provide further incentive to reduce SOV travel, resulting in reduced trip travel times between HSR stations. Certainly beyond 2045, 2020 Connect SoCal's horizon year, the region's residents can expect a future with much more robust rail options, including HSR service to Las Vegas and Phoenix. In addition, much better connectivity between intercity Amtrak rail, commuter rail, and rail services operated by public transit agencies.

## CONCLUSION

This Passenger Rail Technical Report details the passenger rail improvements made since the 2016 RTP/SCS. The delivery and improvement of the region's passenger rail services continues to gain momentum. The region can continue to look forward to more improvements, which will provide more incentive to travel around the region on rail. The resulting increase in rail mode share as a traveling option will help reduce congestion and deliver a more sustainable region. In addition, the report lays out a vision with four main elements, including growing ridership, providing more frequent and new passenger rail services, improving connectivity and securing new and more funding.







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## TECHNICAL REPORT

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PASSENGER RAIL  
ADOPTED ON SEPTEMBER 3, 2020

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