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Assembly California Legislature



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OVERSIGHT HEARING

Review of the California High-Speed Rail Project

Tuesday, November 12, 2019

1:00 P.M.

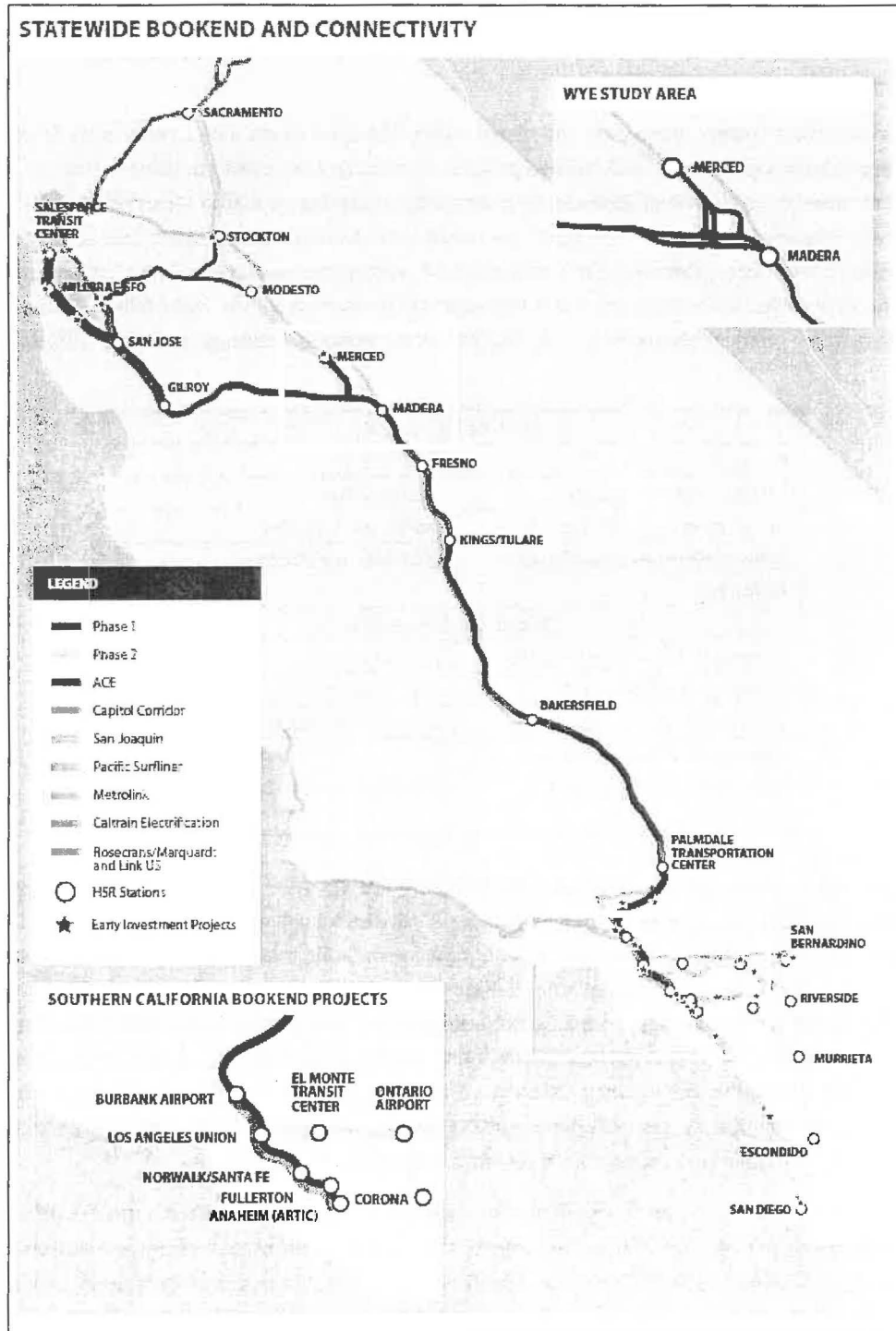
California High Speed Rail Authority
1111 H Street, Fresno, CA

Attachments referenced in background paper:

1. Metrolink document
2. ETO Interim Report
3. California State Auditor document



Getting Southern California High Speed Rail-Ready with an Investment in Metrolink's Burbank to Anaheim Corridor



Executive Summary

The California High-Speed Rail Authority (CAHSR) Board of Directors met on July 16, 2019, during which Director Ernesto Camacho requested that CAHSR staff perform a side-by-side comparison of the Central Valley, the Bay Area, and the Los Angeles Corridor. As a result, the Southern California Regional Rail Authority (Metrolink) received a request from CAHSR on August 6, 2019 to provide information regarding investments that could be made in the Southern California rail network that would benefit future High-Speed Rail deployment. Those investments and their present-day and future benefits are provided in the attached report.

Metrolink is the nation's third largest commuter rail system with **538** total route miles, serving six Southern California counties with a cumulative population of **21.5 million people**. Currently, Metrolink customers ride an average of 36 miles one-way and remove more than **9 million car trips** annually, equating to a **28% reduction** in traffic volume during the peak hour in peak direction on parallel freeways. The result is an annual Vehicle Miles Traveled (VMT) reduction of over **335 million miles** in Southern California. That reduction will only grow with Metrolink's vision to double ridership by 2023 and provide 30-minute, bidirectional service throughout the system by the 2028 Olympic Games. As a joint powers authority that relies on member agency contributions, it is critical to leverage state and federal investment to realize the vision.

Metrolink Today	
Annual Ridership (FY 2019)	11.9 million
Annual VMT Reduced	335 million +
Time Saved vs. Driving I-5	Up to 54 minutes
Annual Greenhouse Gases Reduced	130,000 metric tons
Metrolink Tomorrow	
Annual Ridership (FY 2028)	20 million +
Annual VMT Reduced	500 million +
Time Saved vs. Driving I-5	Up to 84 minutes
Annual Greenhouse Gases Reduced (average annual 2024-2028)	207,000 + metric tons

California High Speed Rail is looking to make key investments in the Burbank – Anaheim Corridor in Southern California that will benefit the statewide service when it begins to operate in the future. Metrolink and its Member Agencies are currently spending \$1.8 billion on the Corridor through the Southern California Optimized Rail Expansion (SCORE) Program. Metrolink has identified approximately \$9.4 billion¹ in capital projects and rolling stock deployments needed for the Corridor. A phased delivery strategy reduces that need in the short term to \$3.5 - \$5.5 billion by 2024, which would allow the Burbank to Anaheim Corridor to initiate a high-speed rail ready service and enhance **connectivity with multiple existing services throughout Southern California**. This investment will lay the groundwork for CAHSR and help to reduce VMT along with greenhouse gas (GHG) and criteria pollutant emissions, while providing attractive zero emissions rail choices for the traveling public and for visitors to California.

Investments in this corridor will help operating efficiencies related to facilitating 130 train movements in the corridor each weekday, including 80 freight trains and 50 passenger trains on a corridor of regional and national significance. These investments also will benefit the Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor immediately by providing additional capacity, flexibility and reliability, while also providing these same benefits to CA HSR when it begins to operate. Finally, private entities like Virgin Trains have expressed interest and the potential for **private funding** in this

¹ \$7 billion for capital projects; \$2.5 billion for ZEV rolling stock and facilities.

corridor, further demonstrating the benefits of investments in the Burbank – Anaheim Corridor and making this a unique opportunity for California.

In summary, investment in the Burbank – Anaheim Corridor enables immediate mobility improvement in Southern California by strengthening the backbone of the entire system and creating the capacity to accept additional systemwide improvements that enable high-frequency services throughout the day, while simultaneously making Southern California high-speed rail ready. State investment in the Burbank – Anaheim Corridor also has the potential to unlock significant **federal funding** and pave the way for **private investment** in Southern California.

Director Camacho's motion recognizes the ridership, congestion relief, GHG reductions and other near-term benefits early investment in Northern and Southern California can provide in conjunction with ongoing investment in the Central Valley. The Metrolink Burbank – Anaheim Corridor stands ready to maximize the early benefits of state, federal, local funding, and potential private fund sources to deliver high-speed rail ready infrastructure to get faster congestion relief, greenhouse gas emissions reductions, and mitigate the impacts of climate change. The future is now.

Metrolink Overview

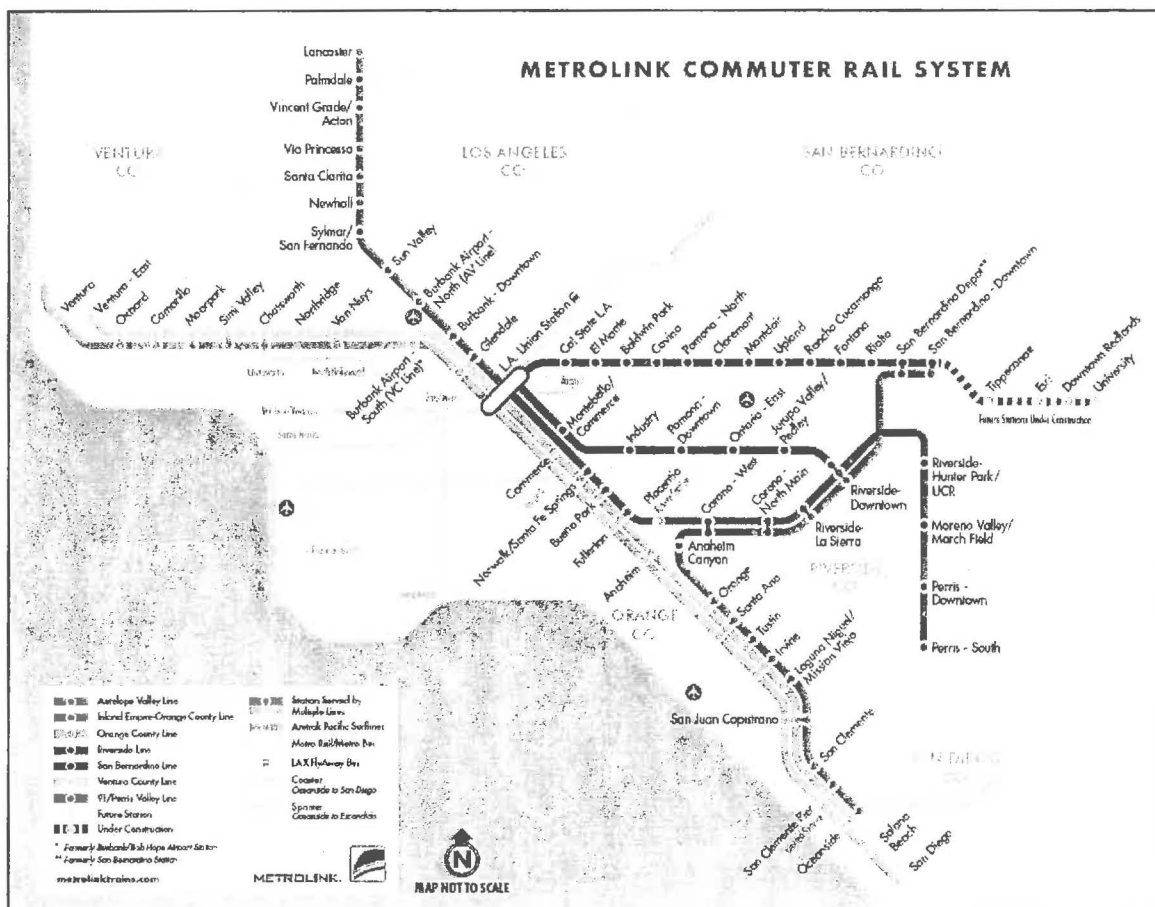
Metrolink is the nation's third largest commuter rail system, based on its **538** total route miles, serving six Southern California counties with a cumulative population of **21.5 million people** – over half of California's total population. Over the next 15 years, these counties are forecasted to add **one million people**, while also meeting the State's ambitious greenhouse gas (GHG) reduction and housing goals. Commuter rail service is an important resource to connect our region's affordable housing to key economic job centers.

Here are a few key statistics:

- **11.9 million** annual riders in Fiscal Year 2019;
- **81%** of weekday trips are work-related, reducing traffic volume during the peak hour in peak direction by up to **28%** on parallel freeways such as the 5, 10, 57, 101, 134, 215, 710 freeways— some of the most congested roadways in the nation;
- **60%** of Metrolink riders travel across county lines;
- Metrolink eliminates **130,000 metric tons** of greenhouse gas (GHG) emissions annually; and
- Metrolink eliminates **335,080,746** vehicle miles traveled (VMT) per year from area roadways.

Approximately **15 million people** live within five miles of Metrolink's **62 stations** throughout Southern California. Our average trip length is **36 miles** and **85% of our riders** have access to a car, but choose commuter rail, making a Metrolink trip an avoided freeway trip. Despite its impact, Metrolink does not yet have the infrastructure investment needed to achieve its full congestion relief potential.

Figure 1: Metrolink System Map

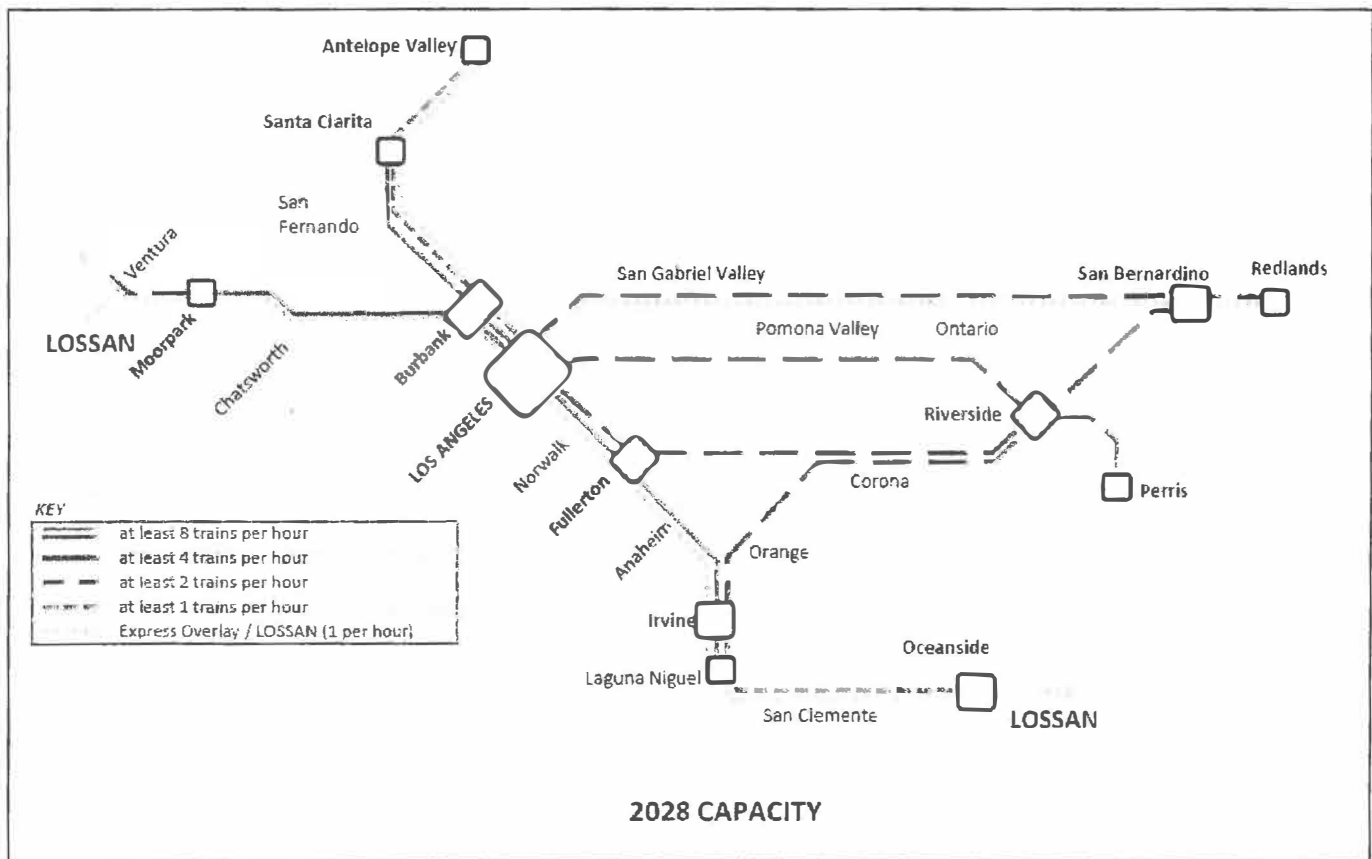


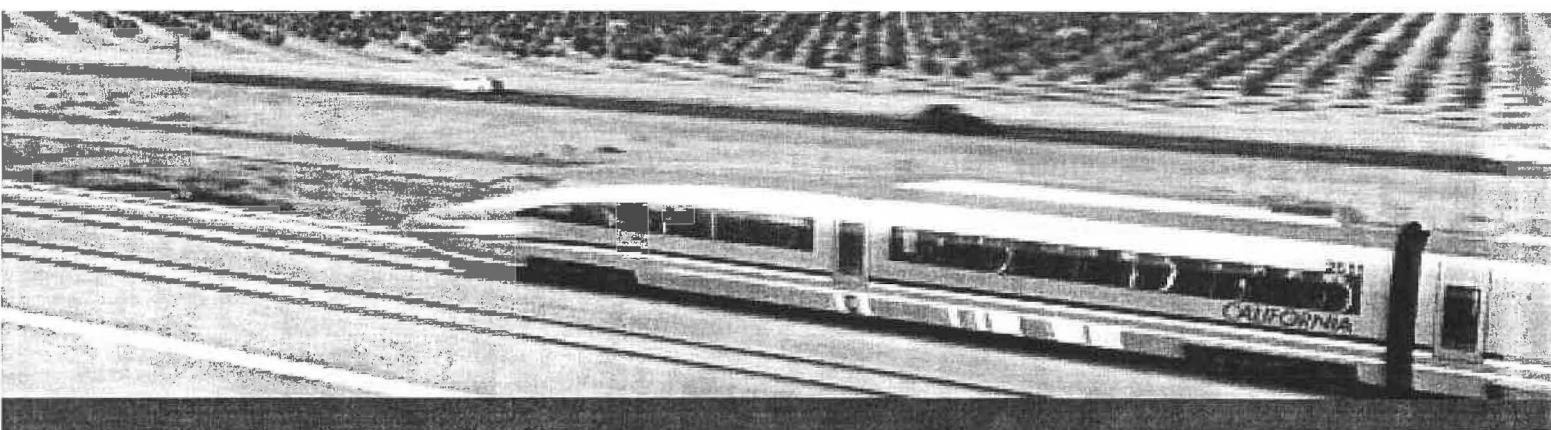
A Vision for Metrolink

The Chief Executive Officer's overall vision for Metrolink is to double system ridership in five years. Achieving that goal will require trains reliably arriving at least every 30 minutes, with higher performance trainsets that will include deployment of zero emission vehicles (ZEV). Realizing the vision will require targeted investments in the Southern California Optimized Rail Expansion (SCORE) program, along with additional investments in the 45-mile Burbank – Anaheim Corridor, and the introduction of ZEV trainsets in the Burbank – Anaheim Corridor by the time Southern California hosts the 2028 Olympics.

The corridor between Burbank and Anaheim is shared with Amtrak, freight rail and, in the future, with California High-Speed Rail. The aforementioned investments support the long-term State investment in the California High-Speed Rail System and growth in state-supported Amtrak service; benefits the nationally significant freight corridors emanating from the Ports of Los Angeles and Long Beach; and is consistent with State's Transportation Plan 2040 Vision, the 2018 State Rail Plan, the 2018 High Speed Rail (HSR) Business Plan and the Southern California Association of Governments' Sustainable Communities Plan.

Figure 2: SCORE Vision for 2028





Deutsche Bahn Engineering & Consulting, USA Inc.

California High Speed Rail Side-By-Side Study
Preliminary Qualitative Analysis - Board Presentation
October 15, 2019

For the 2019 Project Update Report the ETO Completed Studies Investigating Early Service In the Peninsula and the Central Valley Corridors



Central Valley Corridor Study

- Operating Expenses Versus Revenue
- Standalone operation Merced – Bakersfield
 - Early High-Speed Rail services create significant value
 - Train miles offered more than double
 - Reduction of more than 90 minutes in travel time
 - More efficient cost per mile, improved cost recovery from fare revenues
 - Complemented by planned enhancements to ACE and San Joaquin Lines

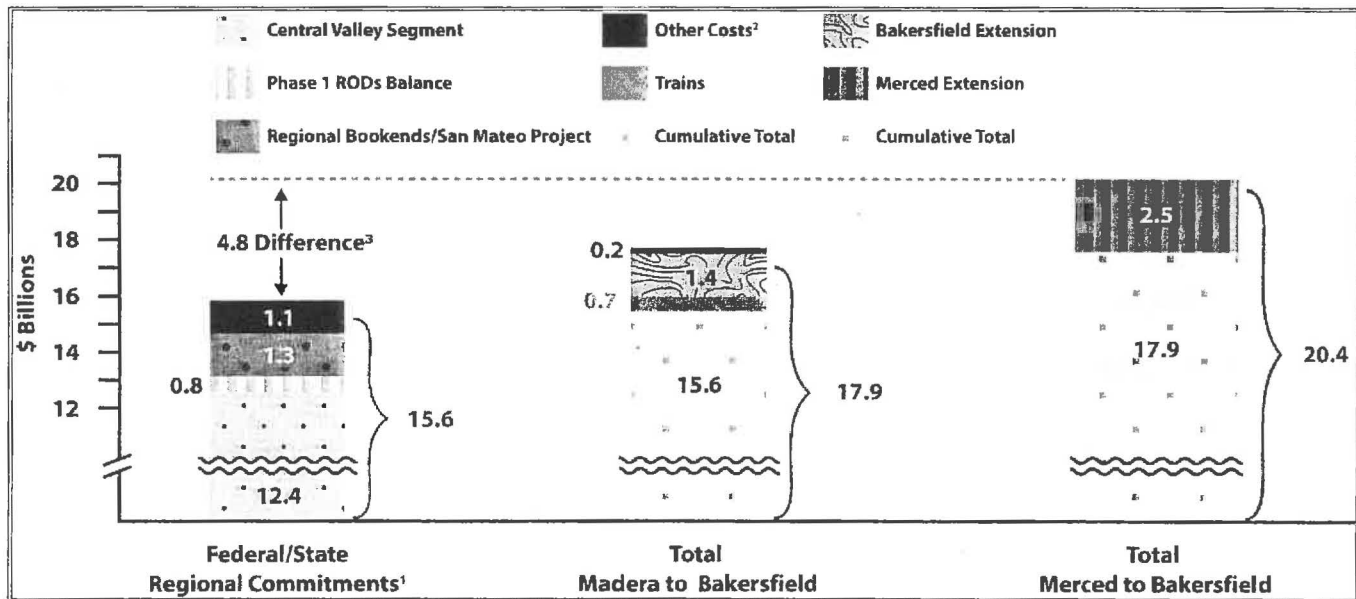
Peninsula Corridor Study

- Operating Expenses Versus Revenue
- Standalone operation San Francisco – Gilroy
 - No substantial ridership impact from incremental High-Speed Rail service
 - High-Speed Rail Operating Expenses significantly exceed fare revenues
 - Electrification Scenario with increased Caltrain service without High-Speed Rail captures most of the benefits
 - Significant benefit from High-Speed Rail investment does not materialize until connected to Central Valley via Pacheco Pass

Project Update Report Capital Cost (May 2019)



- Board approved funding of \$15.6 billion for Madera – Poplar Avenue section plus Bookends and RODs
- Project Update Report identified capital cost increment of \$4.8 billion for Merced and Bakersfield extensions and rolling stock (Total cost at \$20.4 billion)



NOTES:

1. Federal/State/Regional Commitments – These include completion of the Federal grant agreements to complete all Phase 1 Environmental Documents and 119 miles of civil and structural rail infrastructure from Madera to Poplar; completion of state and regional projects including SB 1029 Bookend projects (Caltrain Electrification Project, Rosecrans/ Marquardt Grade Separation and Link US) and the regional San Mateo Grade Crossing project.
 2. Other Costs – Other costs include program support costs and historical Phase 2 expenditures.
 3. Based on P70 estimates, potential for change with P100 estimates and due to FY 10 law suit (\$926 million)
- Source: California High-Speed Rail Authority, Delivering High-Speed Rail to Californians, Project Update Report to the California State Legislature, May 2019

Side-By-Side Study Purpose



- In May 2019 the High-Speed Rail Authority Board (Board) asked the ETO to compare options for potential early service investments in three High Speed Rail corridors:
 - San Francisco / Bay Area (NorCal): 4th & King Street Station – Gilroy
 - Central Valley Segment (CVS): Merced – Bakersfield
 - Los Angeles / Anaheim (SoCal): Burbank Airport – Anaheim
- Basis of the analysis is the understanding that High-Speed Rail funds can only be used for High-Speed Rail infrastructure and High-Speed Rail rolling stock within the Phase 1 project limits.
- The side-by-side study will draw from the ETO's prior Central Valley and Peninsula Corridor Financial Plan Study as well as additional analyses currently underway for completion of the side-by-side comparison.

Approach to Preliminary (Qualitative) Analysis



- Stakeholder Meetings
- Developed service concepts and infrastructure scenarios for Southern California corridor (Same methodology as in prior Peninsula Corridor Study and Central Valley Corridor Study)
- Review of information and data
- ETO has completed Phase 1 Qualitative Analysis of the study – to be released 10/31/19
- Reporting Preliminary Conclusions Today
- Second Quantitative Phase In Progress (Target early Q1 2020)

Investment Scenario Comparison: Cost versus Service Benefits



Summary of Trains per Hour
per Direction during Peak

Investment Level:
Regional + State + Other + Authority

Project Corridor	Type	Scenario 1: Existing	Scenario 2: Regional Investment only (No CHSR Service)	Scenario 3: Partial High-Speed Rail Investment (No CHSR Service)	Scenario 4: Full High-Speed Rail Investment (With CHSR Service)
Peninsula Corridor (NorCal) San Francisco –Gilroy (North of San Jose)	Service	5 Caltrain 5 Total	4 <i>Electric Caltrain*</i> 2 Diesel Caltrain 6 Total	8 <i>Caltrain*</i> 8 Total	8 <i>Caltrain*</i> 2 <i>High Speed*</i> 10 Total
	Cost	(No Build)	(Regional \$)**	(+ \$4B HSR)	(+ \$3B HSR+ HSR Rolling Stock)
Central Valley Segment (CVC) Merced –Bakersfield (Entire Corridor)	Service	0.5 San Joaquins (7 Per Day)	N/A	N/A	1 <i>High Speed*</i> 1 Total (18 per Day)
	Cost	(No Build)			(+ \$4.8B HSR incl. HSR Rolling Stock)
Southern California Corridor (SoCal) Burbank –Anaheim (Section North of LAUS)	Service	0.5 Express 3 Regional 3.5 Total	2 Express 4 Regional 6 Total	2 Express 6 Regional 8 Total	2 Express 6 Regional 2 <i>High Speed*</i> 10 Total
	Cost	(No Build)	(Regional \$)**	(+ \$7B HSR)	(+ \$5B HSR+ HSR Rolling Stock)

* Indicates trains with electric catenary zero-emission propulsion. ** Scenario 2 includes High-Speed Rail bookend investments in NorCal and SoCal.

Preliminary Findings – Qualitative Comparison



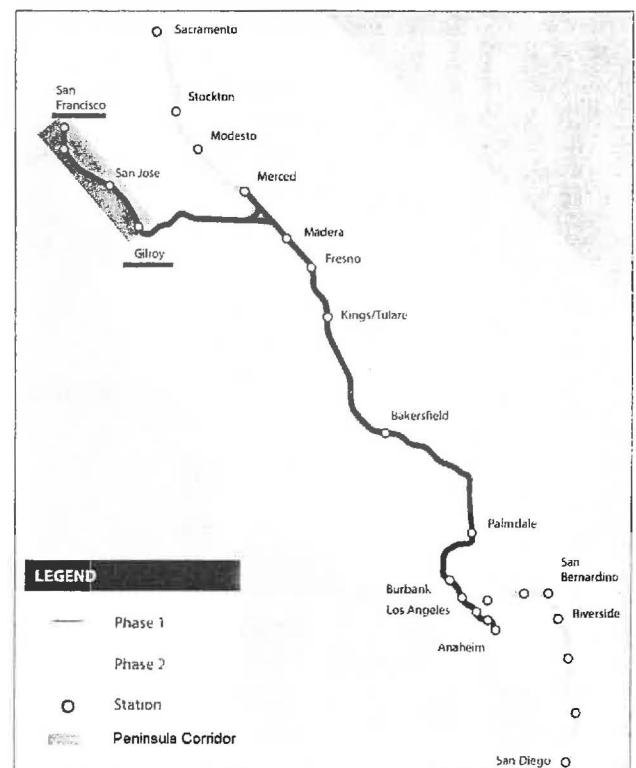
Project Corridor	Length of Corridor	Improved Rail Service	Ridership and Revenue Increment	Increment GHG Benefits	Expected Congestion Relief	High-Speed Rail Capital Cost (YOE\$)	Prior Regional Investment Required?	High-Speed Rail operational within next 10 Years?
Peninsula Corridor (NorCal) San Francisco to Gilroy	77 Miles Shared	<ul style="list-style-type: none"> Frequency Slightly Increased Speed All Electric 	Incremental	Auto and Diesel Trains to Electric Trains	Incremental	Range: \$4 to \$7 billion +HSR Rolling Stock TBD	Shared Corridor/ Caltrain Electrification complete	Maybe At 110 mph
Central Valley Segment (CVS) Merced to Bakersfield	171 Miles Dedicated	<ul style="list-style-type: none"> Frequency Full High Speed 90 Minute Savings All Electric 	Significant	Auto and Diesel Trains to Electric Trains	Significant	\$4.8 billion <u>including</u> Rolling Stock	Independent Corridor/ Can be developed in parallel	Yes At 220 mph
Southern California Corridor (SoCal) Burbank to Anaheim	44 Miles Shared	<ul style="list-style-type: none"> Frequency Slightly Increased Speed Only High-Speed Rail Electric 	Incremental	Auto to Mainly Diesel Trains	Incremental	Range of \$7 to \$12 billion +HSR Rolling Stock TBD	Shared Corridor/ Regional Investment (Part of SCORE) complete	Unlikely At 110 to 125 mph

Preliminary Findings – Northern California



Peninsula Corridor San Francisco - Gilroy

- The NorCal corridor requires regional investment in addition to the High-Speed Rail investment (Additional fleet, capacity signal system)
- Caltrain Business Plan highlights these capital requirements (Non-High-Speed Rail rolling stock and rail systems)
- High-Speed Rail operating expenses would significantly exceed revenues
- Marginal benefits of standalone High-Speed Rail service (must connect to Central Valley)

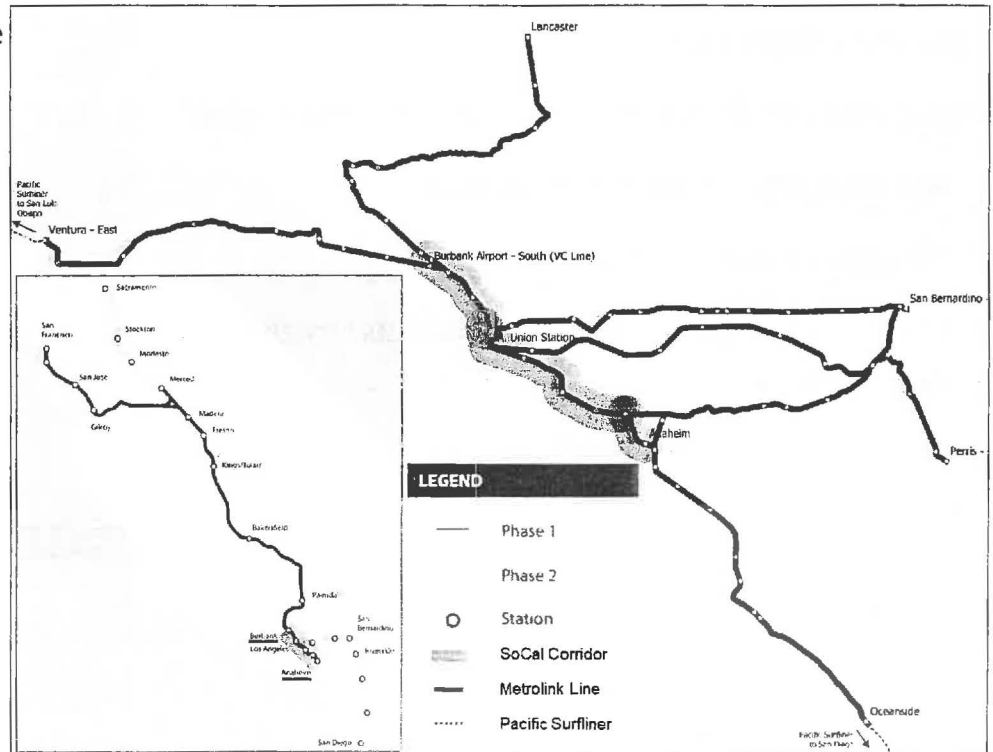


Preliminary Findings – Southern California



Southern California Corridor Burbank - Anaheim

- The minimum High-Speed Rail infrastructure cost alone in the SoCal Corridor exceeds 1.5 times the remaining unallocated funding available (\$4.8 billion)
- The full regional benefits of the High-Speed Rail investment can only be realized with concurrent new regional capital investment in network outside of the Burbank – Anaheim corridor
- Incremental ridership benefits will be significantly higher if all connecting services are concurrently improved with the Burbank – Anaheim High-Speed Rail section

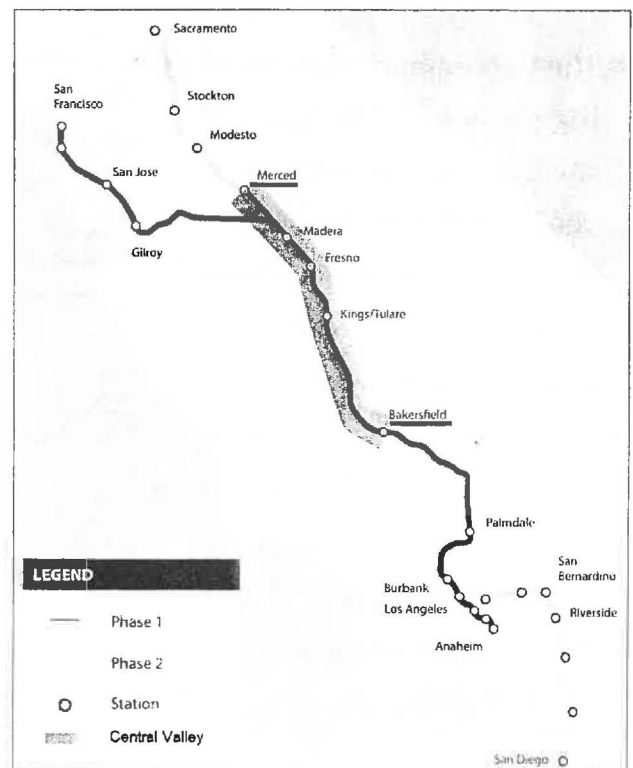


Preliminary Findings – Central Valley Full Build



Benefits if connections to Merced and Bakersfield are completed
(\$4.8 billion to complete including High-Speed Rail rolling stock):

- Standalone High-Speed Rail operation
Merced – Bakersfield
- Early High-Speed Rail services create significant value
- Train miles offered more than double
- Reduction of more than 90 minutes in travel time
- More efficient cost per mile, improved cost recovery from fare revenues
- Complemented by planned enhancements to ACE and San Joaquin Lines

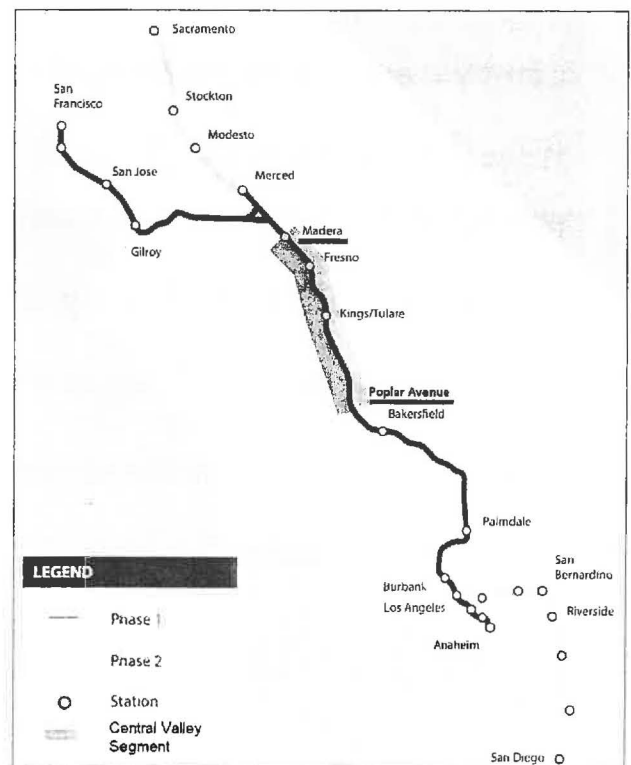


Preliminary Findings –Central Valley Partial Build



Consequences if connections to Merced and Bakersfield are not completed
(\$4.8 billion to complete including High-Speed Rail rolling stock):

- High-Speed Rail service in the Central Valley will be delayed until additional funding for Valley-to-Valley project is available
- Limited use of High-Speed Rail infrastructure in the Central Valley by San Joaquin trains will resemble current situation with only minor improvements
- Throw-away cost to build connections between the High-Speed Rail line and the BNSF line to make the section between Madera and Poplar Avenue fit for Diesel operation
- High operational expenses for a then underutilized infrastructure asset
- Limited or minimal environmental improvements





Proposed Next Steps

- Interim Qualitative Report available by 10/31 (In Review now)
- Continue Quantitative Phase:
 - Continue analysis of capital cost including cost for High-Speed Rail rolling stock
 - Work with stakeholders (Caltrain, Metrolink, LA Metro, LOSSAN, CalSTA, SJRRC, SJJPA) to provide insights on needed investment to incorporate into Final Report
 - Summarize High-Speed Rail capital costs and show regional benefits and needs
 - Estimate ridership and revenue impacts for SoCal scenarios
 - Identify GHG and congestion benefits for all three corridors
- Generate Quantitative Final Report in Early Q1 - 2020

Report 2018-108 Recommendations

When an audit is completed and a report is issued, auditees must provide the State Auditor with information regarding their progress in implementing recommendations from our reports at three intervals from the release of the report: 60 days, six months, and one year. Additionally, Senate Bill 1452 (Chapter 452, Statutes of 2006), requires auditees who have not implemented recommendations after one year, to report to us and to the Legislature why they have not implemented them or to state when they intend to implement them. Below, is a listing of each recommendation the State Auditor made in the report referenced and a link to the most recent response from the auditee addressing their progress in implementing the recommendation and the State Auditor's assessment of auditee's response based on our review of the supporting documentation.

Recommendations in Report 2018-108: California High-Speed Rail Authority: Its Flawed Decision Making and Poor Contract Management Have Contributed to Billions in Cost Overruns and Delays in the System's Construction (Release Date: November 2018)

Filter Recommendations to Status:

Recommendations to High-Speed Rail Authority, California		
Number	Recommendation	Status
<u>1</u>	To ensure that the change orders it approves are necessary and that their costs are appropriate, the Authority should adhere to the guidance and estimates the oversight firms provide to it. If the Authority chooses to deviate from the oversight firms' recommendations, it should clearly document why it made those deviations.	<u>Partially Implemented</u>
<u>2</u>	Before executing its next construction contract, the Authority should establish formal prerequisites for beginning construction to prevent avoidable cost overruns and project delays. At a minimum, these prerequisites should identify specific benchmarks related to land acquisition, utility agreements and relocations, and agreements with external stakeholders, including impacted local governments and other railroad operators.	<u>Partially Implemented</u>
<u>3</u>	To better position itself to complete the three Central Valley projects by the December 2022 federal grant deadline, the Authority should improve its monitoring and evaluation of the oversight firms' risk assessment processes and should take steps to ensure that these processes are consistent across the three projects by May 2019.	<u>Partially Implemented</u>
<u>4</u>	To enable policymakers and the public to track the Authority's progress toward meeting the federal grant deadline of December 2022, the Authority should, by January 2019, begin providing quarterly updates to the Legislature detailing the progress of the three Central Valley construction projects using an earned value model that compares construction progress to the projected total completion cost and date. The Authority should base these updates on the most current estimates available.	<u>Partially Implemented</u>

Recommendations to High-Speed Rail Authority, California		
Number	Recommendation	Status
<u>5</u>	To ensure that it is adequately prepared if it is unable to meet the federal grant deadline of December 2022, the Authority should, by May 2019, develop a contingency plan for responding to such a scenario.	<u>No Action Taken</u>
<u>6</u>	To improve its contract management, increase accountability, and justify the significant amount it pays for contracted services, the Authority should, by May 2019, prioritize contract management efforts and reduce the frequency with which contract management responsibilities shift among Authority staff by establishing a formal process for hiring and assigning full-time, experienced contract managers. These contract managers should have duty statements reflecting their contract oversight responsibilities, and they should report to supervisors who understand those responsibilities and have extensive knowledge about the contracts' deliverables. In addition, those supervisors' duty statements should clearly lay out their responsibility for addressing any contract manager noncompliance with the Authority's contract management policies and procedures, whether reported by CMSU or identified by another means.	<u>Partially Implemented</u>
<u>7</u>	To improve its contract management, increase accountability, and justify the significant amount it pays for contracted services, the Authority should, by May 2019, require CMSU to establish a schedule to monitor individual contract manager compliance and report annually the results of this monitoring to Authority executive leadership. To help ensure the integrity of its oversight role, CMSU should be composed of state staff in place of RDP consultants.	<u>Partially Implemented</u>
<u>8</u>	To improve its contract management, increase accountability, and justify the significant amount it pays for contracted services, the Authority should, by May 2019, hold contract managers accountable for performing the duties that the Authority's policies assign to them. Specifically, CMSU and, to the extent necessary, contract managers' supervisors should require and review evidence from contract managers demonstrating their approval of deliverables, detection and resolution of contractor performance issues, and assessment of contract amendments for merit. The Authority should not accept observations and reports from its contractors or the RDP consultants in place of this evidence.	<u>Fully Implemented</u>
<u>9</u>	To prevent the inappropriate use of contractors to perform state functions, the Authority should develop procedures by May 2019 for evaluating whether new and existing administrative duties should be assigned to contractors or to state employees.	<u>Partially Implemented</u>
<u>10</u>	To ensure that contract managers' invoice reviews are complete and that invoiced costs are allowable under contract terms, the Authority should amend its applicable procedures by May 2019 to require contract managers to document their review of invoiced rates and expenses.	<u>Fully Implemented</u>
<u>11</u>		

Recommendations to High-Speed Rail Authority, California

Number	Recommendation	Status
	To ensure the consistency and effectiveness of its efforts to monitor the performance of the oversight firms with which it contracts, the Authority should develop a formal methodology by May 2019 for using the performance evaluation tool it has implemented. This methodology should include procedures for assessing the sufficiency of the oversight firms' review and approval of invoices for construction contracts.	<u>Fully Implemented</u>
<u>12</u>	To ensure that the oversight firms' spending is reasonable, the Authority should develop a formal process by May 2019 for tracking any out-of-scope work that the oversight firms perform. To reduce the likelihood that its contracts with the oversight firms run out of funds prematurely as a result of this additional work, the Authority should also develop a formal process for amending the oversight firms' contracts contemporaneously to change orders that significantly extend the timelines or increase the scope of work of the construction contracts that oversight firms oversee.	<u>Fully Implemented</u>
<u>13</u>	To help improve the effectiveness of its sustainability policy, the Authority should revise the policy by May 2019 to more clearly differentiate between the construction and operation phases of the high-speed rail system. Further, it should ensure that each objective in each section of the policy is associated with quantifiable metrics for evaluating implementation.	<u>Fully Implemented</u>
<u>14</u>	To allow it to evaluate the sustainability of the high-speed rail system's construction, the Authority should, by May 2019, perform and document a review of its compliance with its existing quality controls related to ensuring the validity and completeness of contractor-reported data. The Authority should also establish a formal process to perform such reviews periodically.	<u>Fully Implemented</u>
<u>15</u>	To help ensure that it meets its sustainability goals, the Authority should comprehensively compare the three construction projects' performances to their construction contractors' original baseline estimates on a quarterly basis. It should perform the first of these comparisons no later than May 2019.	<u>Fully Implemented</u>
<u>16</u>	To help ensure that its contractors' proposed environmental impacts are reasonable and to measure the progress of its sustainable construction efforts over time, the Authority should, by November 2019, identify and track standardized measures—such as project miles—that will allow it to compare construction impacts across the high-speed rail system's different construction projects.	<u>Fully Implemented</u>
<u>17</u>	To increase the transparency of its reporting, the Authority should, by May 2019, expand its quarterly small business, DVBE, and DBE utilization reporting to account for the total value of all its contracts and to identify the reasons it has exempted specific contracts.	<u>Fully Implemented</u>

Print all recommendations and responses.