



# Memorandum

**TO:** HONORABLE MAYOR  
AND CITY COUNCIL

**FROM:** John Ristow

**SUBJECT:** CALTRAIN LONG-RANGE SERVICE  
VISION; CITY PRIORITIES AND  
PREFERRED SCENARIO

**DATE:** August 5, 2019

Approved

D. DSL

Date

8/9/19

**COUNCIL DISTRICTS: 2, 3, 6, 7, & 10**

## RECOMMENDATION

Accept the report and provide direction to staff regarding the following City of San José priorities and locally preferred long-range service vision for the Caltrain Business Plan.

- a. Support Caltrain adopting a Long-Range Service Vision that provides at least the “Moderate Growth” service levels, while pro-actively preparing for “High Growth Scenario” Service Vision should sufficient funding and policy commitments be secured.
- b. Advocate that regional and state agencies develop a program of regional rail investments that supports and enables Caltrain and other agencies to achieve the High Growth Scenario, as part of an integrated Statewide and Bay Area passenger rail network.
- c. Advocate that Caltrain, its member agencies, and other regional and state agencies work towards solutions for region-wide rail governance and mega-project implementation.

## OUTCOME

Establishment of the City of San José’s priorities and locally preferred scenario for Caltrain’s Long-Range Service Vision will inform the Caltrain Board of Directors of the City’s interests as Caltrain selects a Long-Range Service Vision to include in the Caltrain Business Plan.

## BACKGROUND

Caltrain is the largest regional passenger rail service provider in San José today carrying over 63,000 riders a day. Its service area extends from San Francisco south through San José to Gilroy. The Peninsula Corridor Joint Powers Board (PCJPB) operates Caltrain and owns the rail line from San Francisco to just south of Communications Hill in San José. Caltrain runs 92 trains

each weekday between San José Diridon Station and San Francisco, with 34 trains serving Tamien Station. Union Pacific owns the rail line south of Communications Hill. Currently, Caltrain operates only three trains northbound from Gilroy in the morning and three southbound in the evening on this part of the corridor.

Over the last decade, Caltrain has experienced a substantial increase in ridership and anticipates further increases in ridership demand as the Bay Area's population and employment along the Caltrain corridor grows. The Caltrain Modernization Program, currently under construction and scheduled to be completed by 2022, will electrify and upgrade the performance, operating efficiency, capacity, safety, and the reliability of Caltrain's passenger rail service, while dramatically reducing noise and air quality impacts. The electrification and modernization project covers the Caltrain-owned line from San Francisco through Diridon Station and to Tamien Station; the project does not extend onto the Union Pacific-owned tracks south of Communications Hill.

The electrification of the Caltrain corridor and modernization of the train fleet with higher-performance electrical-powered rolling stock has been the main focus of Caltrain's strategic and capital planning for over two decades. In 2017, Caltrain broke ground on the electrification and modernization project. In early 2018, the High-Speed Rail Authority's 2018 Business Plan introduced the concept of extending blended service with Caltrain from Santa Clara through San José to Gilroy. More information about the HSR Preferred Alternative is also agendized for discussion at the August 20, 2019 City Council meeting. Considering these developments, Caltrain started a strategic planning effort for comprehensive corridor planning, the Business Plan described below.

### **Caltrain Business Plan and Service Vision for 2040**

The Caltrain Business Plan addresses the future potential of the railroad over the next 20-30 years. It assesses the benefits, impacts, and costs of different service visions, building the case for investment; it will include a plan for implementation. Caltrain's plan undertakes a comprehensive corridor planning process addressing service, organizational and community issues in the San Francisco to Gilroy corridor. Key Caltrain Business Plan outcomes include:

- PCJPB Action on an integrated long-range service vision for the Peninsula Corridor to be followed by the development of a detailed Business Plan document
- Organizational assessment and strategy for evolving Caltrain service and corridor management
- Assessment and strategy for addressing key rail community interfaces including at-grade crossings and development along the corridor

### **Current Status of the Business Plan**

Caltrain has completed the service vision development, business cases, and organization assessment. On August 1, Caltrain staff will present these to the PCJPB board for information,



along with a staff recommendation for the 2040 service vision. The Caltrain board will consider the adoption of a 2040 service vision in September or October of this year.

**ANALYSIS**

Caltrain’s business planning to date includes establishing a Service Vision and assessing the organization’s ability to implement and maintain it. The analysis section of this report is organized into the following sections:

- **Service Vision**
  - Baseline Growth Scenario
  - Expanded Service to Southern San José
  - Medium Growth Scenario
  - High Growth Scenario
  - Integrating with Mega-Regional Network
  - Business Case
  
- **Organizational Assessment**

**Service Vision**

The table below compares Caltrain’s service levels today to the three scenarios considered in Caltrain’s Long-Range Service Vision.

**Table 1. Peak and Off-Peak Service Levels  
 Caltrain Trains per Hour per Direction (TPHPD)**

<i>Scenario</i>	<i>Service</i>	<b>San Francisco to Tamien</b>	<b>Tamien to Blossom Hill</b>	<b>Blossom Hill to Gilroy</b>
<b>Current</b>	Weekday Peak	5	1*	1*
	Off-Peak and Weekend	1	0	0
<b>Baseline</b>	Weekday Peak	6	1*	1*
	Off-Peak and Weekend	3	0	0
<b>Moderate</b>	Weekday Peak	8	4	2
	Off-Peak and Weekend	6	4	1
<b>High</b>	Weekday Peak	12	4	2
	Off-Peak and Weekend	6	4	1

\* Trains in peak direction only

***Baseline Growth Scenario***

After the completion of Caltrain electrification in 2022 service will expand to six trains an hour between San José Diridon and San Francisco during peak hours. The Baseline Growth Scenario would continue that service level to 2040, with an increase in off-peak service and the hours of peak service after 2029. It would construct less than a mile of new passing tracks at Millbrae,

associated with adding High-Speed Rail (HSR) to that station, and construct one grade separation.

Rather than having expresses and locals, trains would operate three different skip stop patterns. By the time Caltrain is extended to SF Transbay Center in 2029 the service provided by Caltrain will be well below demand leading to worse overcrowding than today. Further the Baseline Growth service plan does not take advantage of the High-Speed Rail's preferred alternative's infrastructure to provide frequent service to southern San José. Therefore, this scenario would not advance San José's transportation, economic development or environmental goals and objectives.

### ***Expanded Service to Southern San José***

Regional transit service in southern San José would be completely transformed if Caltrain selects either the Moderate or High Growth Scenarios. Using the blended tracks built by HSR, Caltrain service would increase from six Caltrain trains (three roundtrips a day) to 152 trains a day. Blossom Hill and Capitol stations would have service to and from San Francisco every 15 minutes all day, and trains both to and from Gilroy every 30 minutes during peak hours, and once an hour the rest of the day. This increase in regional accessibility for residents and businesses in southern San José would be transformative and would further General Plan goals for mode shift and focused growth.

### ***Medium Growth Scenario***

The Medium Growth Scenario increases service between San Francisco and Tamien station to eight Caltrain trains an hour in the peak and six trains an hour off peak. Unlike the Baseline service, the Moderate schedule would have express and local trains operating on a regular 15-minute service. A mid-peninsula transfer station would allow passengers to switch between local and express trains. Off-peak service would increase from one train an hour today to six trains an hour. Service south of Tamien to Blossom Hill would increase to every 15 minutes all day as previously described.

The Medium Growth Scenario would require up to four miles of new 4-track segments and stations, including a mid-peninsula 4-track station tentatively located in Redwood City. A train turnback facility would be needed south of Blossom Hill station to accommodate the additional service to Blossom Hill. Per California Public Utilities Commission guidance, a grade separation is needed when the crossing spans four or more tracks. Therefore, a minimum of at least three streets would be required to be grade separated under the Moderate Growth Scenario.

The increased service frequency and capacity would allow ridership to grow from approximately 63,000 today to over 177,200 by 2040, which is over 25,000 more than the Baseline Growth Scenario. The capacity increase would be equivalent to adding 5.5 lanes to US-101. By 2040, demand for express trains would exceed a comfortable crowding level and Caltrain estimates this would lead to over 7,000 riders a day choosing other modes due to Caltrain crowding. Based on these projections, Caltrain believes it would need at least eight trains per hour to serve capacity and coverage needs.



### ***High Growth Scenario***

The High Growth Scenario increases peak period service between San Francisco and Tamien station to 12 Caltrain trains an hour. The additional four train slots per hour would allow Caltrain to run an additional set of express trains every 15 minutes. Off-peak, weekend, and south of Tamien service would be the same as the Moderate Growth Scenario.

The infrastructure needed to achieve the High Scenario service levels would include up to 15 miles of new 4-track segments. The exact locations of the 4-track segments have some flexibility and would be in three sections between South San Francisco and Mountain View. The additional 4-track segments would require 12 grade separations and would increase capital costs and property impacts.

The High Growth Scenario's increase in service frequency and capacity allow ridership to grow from approximately 63,000 today to over 207,300 by 2040, over 30,000 more than the Moderate Growth Scenario. System capacity would allow commute hour ridership to increase to over 11,000 at the peak load point – equivalent to widening US-101 by 8.5 lanes. The system would also have enough peak capacity to serve all projected demand in 2040 without overcrowding.

### ***Integrating with Mega-Regional Network and New Bay Crossings***

The Caltrain-owned corridor along the San Francisco Peninsula and into the South Bay is part of a much larger northern California passenger rail network. Capitol Corridor and Altamont Corridor Express already provide service from Sacramento and Stockton through the East Bay and into San José, merging onto the Caltrain corridor in Santa Clara. High-Speed Rail plans to share tracks and blend trains with Caltrain from Gilroy through San José to San Francisco. Two other projects currently under study could have as profound an impact on the Caltrain-owned corridor as High-Speed Rail. Specifically, 1) a rebuilt Dumbarton rail bridge and 2) a Second Transbay Tube from Oakland that includes two standard gauge rail tracks. The new Transbay tube would require through service at SF Transbay because like Diridon Station, there is not enough room for stopping and turning trains in the station.

Caltrain has determined that no major new through service onto Caltrain-owned tracks is possible for Baseline and Moderate Growth Scenarios without slowing HSR and Caltrain travel times or significantly exacerbating Caltrain crowding by diverting train slots away from the Caltrain market. Under a Moderate Growth Scenario, any trains using Dumbarton would stop at Redwood City and passengers would have to transfer. Only the High Growth Scenario would have the additional capacity to add new through service from the Second Transbay Tube or Dumbarton Rail projects. As seen in Table 2 below, the four additional express trains under the High Growth Scenario could be used, by any operator, for cross-bay service.

**Table 2. Regional Rail Network Opportunities Under the High Growth Scenario**

	<b>Caltrain Corridor Market (8+ Slots)</b> <ul style="list-style-type: none"><li>• At least 8 TPHPD required to serve capacity and coverage needs</li><li>• Still may result in uncomfortable peak hour crowding along most of the corridor</li></ul>
	<b>HSR Market (4 Slots)</b> <ul style="list-style-type: none"><li>• Committed to 4 TPHPD to serve HSR needs between San Francisco and Los Angeles</li></ul>
	<b>Opportunities for 4 Additional Slots</b> <ul style="list-style-type: none"><li>• Additional Caltrain express service to help alleviate crowding conditions and realize full demand</li><li>• Additional regional service to provide connections to enhance connections to East Bay, Sacramento, and/or Central Valley</li></ul>

Source: Caltrain

Future through-service across the Bay, enabled by the additional slots in the High Growth Scenario, would provide additional flexibility on how to route trains from the East Bay to San José. The option to run some trains across the Bay and then south on Caltrain instead of the current line through Alviso could potentially reduce the infrastructure needed at Diridon Station and south of Diridon through San José.

The Second Transbay Tube and Dumbarton Rail are regional mega-projects with uncertain funding and long timelines. Like with HSR, this makes it difficult to plan around these projects over the medium term due to schedule uncertainty. In the Diridon Integrated Station Concept Plan, The City of San José, Caltrain, the Valley Transportation Authority, and HSR have a goal to create a futureproof, flexible, and adaptive station, looking not only to the next 20 years, but anticipating the needs of the next 100 years. If the same time horizon is applied to the Caltrain corridor, while the timing of both mega-projects is uncertain, planning for and preserving right-of-way to eventually accommodate the High Growth Scenario is essential.

### ***Grade Crossings and Grade Separations***

The Caltrain business planning process has examined at-grade street crossings between San Francisco and Gilroy and how the service scenarios would affect them. Caltrain inventoried all city-led grade separation projects and developed rough estimates of what it would cost the region to build different sets of grade separations, including the cost to fully seal the corridor by separating or closing all street crossings from San Francisco through San José until Coyote Valley.

Building all grade separations that cities are actively pursuing today would cost \$6.9 billion. Separating or closing the remaining crossing to create a fully sealed corridor would add approximately \$4.2 billion more. The significant benefits that grade separations would provide would accrue mostly to communities along the corridor and drivers, rather than Caltrain riders. Therefore, Caltrain plans to continue advancing a corridor wide conversation regarding grade



separations but sees funding corridor-wide grade separations as a broader multi-agency responsibility, involving cities, counties, regional agencies, and the state.

### ***Business Case***

Caltrain has developed a “Business Case” analysis of the three service growth scenarios. A Business Case analysis is a decision-making framework that is intended to objectively assess whether an investment makes sense and provides long-term value to the public. Transportation agencies around the world have used Business Case frameworks to evaluate railroad investments. Caltrain’s Business Case consists of the following three areas:

- Financial Analysis
  - Capital Costs
  - Operating and Maintenance Costs
  - Revenues
- Caltrain Economic Case
  - Caltrain Costs
  - Caltrain User’s Benefits
- Generalized Regional Benefits
  - Environmental Benefits
  - Land Value Increases
  - Economic Productivity

Business Cases are powerful tools for evaluating the benefit versus the costs of investment programs. By their nature these tools are very dependent on the assumptions that go into them and have high degrees of uncertainty. Several key features about Caltrain’s Business Case include:

- Time horizon benefits and costs are calculated to 2070
  - This is far beyond most projections for economic and population growth and travel
  - The Net Present Value and Benefit Cost Ratio heavily rely on benefits post-2040
- Caltrain evaluates the “Economic Case by Scenario” without incorporating the “Generalized Regional Benefits” of scenarios. These include:
  - Environmental benefits of mode shift
  - Property Value Generation of \$34 Billion for the High Scenario
  - Transportation improvements to the regional road network from creating the capacity on Caltrain. The Moderate Growth Scenario would create passenger capacity equivalent to adding 5.5 lanes to US-101 and the High Growth Scenario equivalent to adding 8.5 lanes.
  - Future development plans that were not included in their modeling, including San José’s Downtown Strategy 2040; the upcoming Diridon Station Area Plan update, and any future Urban Village plans around Capitol or Blossom Hill stations.

The above factors make the economic case for Caltrain more conservative, by omitting significant potential future regional mobility and economic development benefits. Focusing solely on the Caltrain user benefits and costs, the additional benefits to Caltrain riders of moving from the Baseline to the Moderate or High Growth Scenarios outweigh the incremental capital and operating costs allocated to Caltrain for moving to the Moderate or High Growth Scenarios.

### **Organizational Assessment**

The Business Plan process includes an organizational assessment and with recommendations for evolving Caltrain service and corridor management. The components of these include:

- Service Delivery – The manner in which Caltrain operates and delivers its service
- Internal Organization – The manner in which Caltrain has organized itself
- Governance – How Caltrain is overseen, and broader regional governance issues, including:
  - Regional rail agency integration or consolidation
  - A potential new regional authority implementing mega-projects
  - Expanded involvement with the private sector

Recommendations in the assessment are framed as answers regarding:

- Timing – Is this the right time to be having this discussion? What are the implications if no decisions are reached?
- Recommendations – What are the recommendations or key focus areas?
- Implementation plan – What additional work is needed?

The assessment finds that now is the time to act, as the growth of Caltrain’s work scope and complexity already underway with Caltrain modernization will require changes to service delivery, internal organization, and governance. It recommends a structured dialogue between the PCJPB member agencies on internal organization and Caltrain governance. At the regional level it recommends Caltrain and the JPB member agencies to “constructively and actively engage” in discussions related to governance and mega-project delivery.

With multiple megaprojects active in the Bay Area and the need to integrate multiple rail services into an integrated network, the call for agencies to convene a structured dialogue should be expanded. The structured dialogue should include the regional and state agencies necessary to address region-wide rail governance and mega-project implementation issues.



### **EVALUATION AND FOLLOW-UP**

Updates on the Caltrain Business Plan will be included in the Quarterly Regional Transportation Activities Report to the Transportation & Environment Committee.

### **PUBLIC OUTREACH**

This item has been posted for the August 20, 2019 City Council Agenda. Caltrain has conducted significant public outreach about the Caltrain Business Plan, including presenting quarterly updates on the Business Plan to both their Board of Directors and their Local Policy Makers Advisory Committee over the past year. Caltrain also held the following community meetings in San José / Santa Clara County:

- November 26, 2018 at Rose Garden Library
- July 22, 2019; a Virtual Town Hall on the Caltrain Business Plan

### **COORDINATION**

This project has been coordinated with the Department of Planning, Building and Code Enforcement, and Office of Economic Development. The City Attorney's Office and City Manager's Budget Office has reviewed this memo.

### **COMMISSION RECOMMENDATION/INPUT**

No commission recommendation or input is associated with this action.

### **CEQA**

Not a Project, File No. PP17-009. Staff Reports, Assessments, Annual Reports, and Informational Memos that involve no approvals of any City action.

/s/  
JOHN RISTOW  
Director of Transportation

For questions, please contact Brian Stanke, DOT Rail Planning Manager, at (408) 795-1834.