Caltrain Business Plan
Project Update
What is the Caltrain Business Plan?

What
Addresses the future potential of the railroad over the next 20-30 years. It will assess the benefits, impacts, and costs of different service visions, building the case for investment and a plan for implementation.

Why
Allows the community and stakeholders to engage in developing a more certain, achievable, financially feasible future for the railroad based on local, regional, and statewide needs.
What Will the Business Plan Cover?

**Technical Tracks**

**Service**
- Number of trains
- Frequency of service
- Number of people riding the trains
- Infrastructure needs to support different service levels

**Business Case**
- Value from investments (past, present, and future)
- Infrastructure and operating costs
- Potential sources of revenue

**Community Interface**
- Benefits and impacts to surrounding communities
- Corridor management strategies and consensus building
- Equity considerations

**Organization**
- Organizational structure of Caltrain including governance and delivery approaches
- Funding mechanisms to support future service
Where Are We in the Process?

- **2018**
  - Initial Scoping and Stakeholder Outreach
  - Board Adoption of Scope

- **2019**
  - Technical Approach Refinement, Partnering, and Contracting
  - Partnership with Stanford and Contracting with Technical Team
  - Part 1: Service Vision Development
  - Board Adoption of 2040 Service Vision

- **2020**
  - Part 2: Business Plan Completion
  - Board Adoption of Final Business Plan
  - Implementation

We Are Here
Recap - Planning for Service in 2040
2040 Demand

The Caltrain corridor is growing
- Corridor expected to add 1.2 million people and jobs within 2 miles of Caltrain (+40%)\(^1\)
- 80% of growth expected in San Francisco and Santa Clara Counties

Major transit investments are opening new travel markets to Caltrain
- Downtown Extension and Central Subway to provide more direct connections to downtown San Francisco
- Dumbarton Rail, BART to San Jose, and improvements to Capitol Corridor and ACE to strengthen connectivity with East Bay
- HSR and Salinas rail extensions to increase interregional travel demand

\(^1\)Based on Plan Bay Area forecasts and approved projects by individual cities
2040 Land Use & Transportation Context

Indicates a station where substantial growth beyond Plan Bay Area forecasts is anticipated, but not yet approved.

1/2 Mile Station Area

- 1 million people and jobs within 1/2 mile of Caltrain stations

2 Mile Station Area

- 4.2 million people and jobs within 2 miles of Caltrain stations

* Indicates a station where substantial growth beyond Plan Bay Area forecasts is anticipated, but not yet approved.
Using Plan Bay Area numbers for projected growth in jobs and housing, an unconstrained model run of high frequency, all-day BART-like service in the Caltrain corridor suggests that by 2040 there could be underlying demand for approximately 240,000 daily trips on the system.
To comfortably serve the full potential market for rail in 2040, Caltrain would need to operate 8 trains per hour, per direction (TPHPD) with 10 car trains or 12 TPHPD with 8 or 10 car trains.
Choosing a Vision: How Will the Railroad Grow?

What
In the Spring of 2019 the team will present three growth scenarios to the Board. One “baseline” scenario will reflect past and ongoing Blended System planning efforts while two new scenarios will explore higher levels of growth. Each scenario will provide a detailed picture of how the railroad could grow over the next 20-30 years. The Board will be asked to choose one of these growth scenarios as the “Service Vision” for the corridor.

Why
In selecting a long range Service Vision the Board will answer the question “How should the railroad grow?” This will allow Caltrain to further optimize and refine the Vision while developing a Business Plan that builds towards the future in a consistent and efficient manner.
2040 Service Scenarios

- **2018**: Current Operations
- **2022**: Start of Electrified Operations
- **2033**: High Speed Rail Phase 1
- **2040 Service Vision**: Moderate Growth
- **High Growth**

Amount of Investment / Number of Trains

Design Year
### Features
- Blended service with up to 10 TPH north of Tamien (6 Caltrain + 4 HSR) and up to 10 TPH south of Tamien (2 Caltrain + 8 HSR)
- Three skip stop patterns with 2 TPH – most stations are served by 2 or 4 TPH, with a few receiving 6 TPH
- Some origin-destination pairs are not served at all

### Options & Considerations
- Service approach is consistent with PCEP and HSR EIRs
- Opportunity to consider alternative service approaches later in Business Plan process

### Passing Track Needs
- Less than 1 mile of new passing tracks at Millbrae associated with HSR station plus use of existing passing tracks at Bayshore and Lawrence
Baseline Growth Scenario – Full Day

Weekday Service

- 6 TPH during morning and evening peak periods (3 skip stop patterns at 2 TPH)
- 3 TPH during morning and evening off peak periods (3 skip stop patterns at 1 TPH)
- HSR operates 4 TPH during peak period and 3 TPH during off-peak periods

Weekend Service

- 3 TPH during morning and evening peak periods (3 skip stop patterns at 1 TPH)
- HSR operates three trains per hour

Charts depict Caltrain arrivals only
Baseline Growth – South of Tamien

Weekday Service

- Caltrain: 2 TPH with skip stop service
- HSR: 8 TPH during peak periods and 4 TPH during off-peak periods

Weekend Service

- HSR: 4 TPH throughout the day

Charts depict Caltrain arrivals only
Moderate Growth Scenario (8+4 Trains)

Features
- A majority of stations served by 4 TPH local stop line, but Mid-Peninsula stations are serviced with 2 TPH skip stop pattern
- Express line serving major markets – some stations receive 8 TPH
- Timed local/express transfer at Redwood City

Passing Track Needs
- Up to 4 miles of new 4-track segments and stations: Hayward Park to Hillsdale, at Redwood City, and a 4-track station in northern Santa Clara county (Palo Alto, California Ave, San Antonio or Mountain View. California Ave Shown)

Options & Considerations
- To minimize passing track requirements, each local pattern can only stop twice between San Bruno and Hillsdale - in particular, San Mateo is underserved and lacks direct connection to Millbrae
- Each local pattern can only stop once between Hillsdale and Redwood City
- Atherton, College Park, and San Martin served on an hourly or exception basis
Weekday Service

- 8 TPH during morning and evening peak periods (4 local and 4 express trains)
- 6 TPH during early AM, midday, and evenings (2 local and 4 express trains)
- HSR operates 4 TPH during peak period and 3 TPH during off-peak periods

Weekend Service

- 6 TPH during early AM, midday, and evenings (2 local and 4 express trains)
- HSR operates 3 TPH

Charts depict Caltrain arrivals only.
Moderate Growth – Capitol & Blossom Hill

Weekday Service

- Caltrain: 4 TPH throughout the day
- HSR: 8 TPH during peak periods and 4 TPH during off-peak periods

Assumes 4 track turnaround at Blossom Hill station

Weekend Service

- Caltrain: 4 TPH throughout the day
- HSR: 4 TPH throughout the day

Charts depict Caltrain arrivals only
Moderate Growth – Morgan Hill & Gilroy

Weekday Service

- Caltrain: 2 TPH during peak periods and 1 TPH during off-peak periods
- HSR: 8 TPH during peak periods (3 stopping at Gilroy) and 4 TPH during off-peak periods (2 stopping at Gilroy)

Assumes 4 track turnaround at Blossom Hill station

Weekend Service

- Caltrain: 1 TPH throughout the day
- HSR: 4 TPH throughout the day (2 stopping at Gilroy)

Charts depict Caltrain arrivals only
High Growth Scenarios (12+4 Trains)

Features
- Nearly complete local stop service – almost all stations receiving at least 4 TPH
- Two express lines serving major markets – many stations receive 8 or 12 TPH

Passing Track Needs
- Requires up to 15 miles of new 4 track segments: South San Francisco to Millbrae, Hayward Park to Redwood City, and northern Santa Clara County between Palo Alto and Mountain View stations (shown: California Avenue to north of Mountain View)

Options & Considerations
- SSF-Millbrae passing track enables second express line; this line cannot stop north of Burlingame
- Tradeoff between infrastructure and service along Mid-Peninsula - some flexibility in length of passing tracks versus number and location of stops
- Flexible 5 mile passing track segment somewhere between Palo Alto and Mountain View
- Atherton, College Park, and San Martin served on an hourly or exception basis
High Growth Scenario – Full Day

• 12 TPH during morning and evening peak periods (4 local and 8 express trains)
• 6 TPH during early AM, midday, and evenings (2 local and 4 express trains)
• HSR operates 4 TPH during peak period and 3 TPH during off-peak periods

Charts depict Caltrain arrivals only
High Growth – Capitol & Blossom Hill

**Weekday Service**

- Caltrain: 4 TPH throughout the day
- HSR: 8 TPH during peak periods and 4 TPH during off-peak periods

**Weekend Service**

- Caltrain: 4 TPH throughout the day
- HSR: 4 TPH throughout the day

Assumes 4 track turnaround at Blossom Hill station

Charts depict Caltrain arrivals only
High Growth – Morgan Hill & Gilroy

Weekday Service

- Caltrain: 2 TPH during peak periods and 1 TPH during off-peak periods
- HSR: 8 TPH during peak periods (3 stopping at Gilroy) and 4 TPH during off-peak periods (2 stopping at Gilroy)

Assumes 4 track turnaround at Blossom Hill station

Weekend Service

- Caltrain: 1 TPH throughout the day
- HSR: 4 TPH throughout the day (2 stopping at Gilroy)

Charts depict Caltrain arrivals only.
Next Steps
Additional Service Planning
Terminal Planning

Ongoing Work

- Detailed terminal planning working sessions underway in partnership with San Francisco and San Jose staff
- Key topics in San Jose
  - Platform configuration at Diridon and Tamien
  - Turnback opportunities at Blossom Hill
  - Interface with Capitol Corridor and ACE
- Key topics in San Francisco
  - Service levels to Salesforce Transit Center and 4th & Townsend
  - Ongoing needs at 4th & King
- Continued exploration of service variability and options at terminals within each “Growth Scenario”
Rail Simulation

1. Collect and Input Data into Model
   - Infrastructure
   - Rolling stock
   - Timetable

2. Code Model for Future Scenarios
   - Baseline Growth
   - Moderate Growth
   - High Growth

3. Conduct Model Simulation Runs
   Determines how reliably service scenarios can be operated and iterate as needed

4. Present Model Results
   Summarizes methodology, assumptions, and findings for each scenario and define next steps
Explorations

The project team is exploring options and variability within the service scenarios as well as how these scenarios might be further adapted to interface with planned and potential passenger rail investments throughout the region. **Examples-**

1. Further options and variations within growth scenarios
2. Potential Second Transbay Tube
3. Potential Dumbarton rail connection
4. ACE/Capitol Corridor connections
5. Monterey County connection / extension
Costing
Capital Costs

1 Gathering Partner Costs
   • Gather information on the cost estimates of partner and city projects (including grade seps) that touch the Caltrain corridor

2 Developing Capital Cost Estimates
   • Develop capital cost estimates of additional infrastructure and fleet improvements needed to support service scenarios

3 Cost Allocation
   • Assign infrastructure improvement costs in each of the growth scenarios
Business Case Analysis

- Remaining Service Planning
- Costing
- Business Case Analysis
- Community Interface & Outreach
Building the Business Case

The business case will help the Board select a 2040 Service Vision with a fully informed understanding of what their choice means for the long-term costs and outcomes of the system and to the region as a whole. Once the Board has selected a long range Service Vision the business case can then be further optimized and detailed.

Examples of Major Inputs and Factors Considered within the Business Case Include:

- Infrastructure Investments and Renewals
- Fleet Planning and Phasing
- Current and Future Operations
- Ridership and Travel Demand
- Operating Costs and Revenues
- Policy Assumptions
- Direct & Indirect Jobs
- User Benefits
- Societal Benefits
- Land Value
Community Interface & Outreach Update
Key Themes
Community Interface Meeting Results

Service Levels & Schedules
Travel demand and mode split goals in relation to existing and anticipated roadway congestion

Physical Corridor
Grade crossings, grade separations, and the stretches of fencing, walls, and vegetation in between

Land Development
Placemaking, jobs-housing balance, transit-oriented development, and zoning changes

Station Connectivity & Access
Local first/last mile solutions, multi-modal access, and equitable incentive programs
Upcoming Outreach & Community Interface Assessment Activities

Public Outreach

- **Project Stakeholders**: Continued meetings and engagement
- **Public Forums**: At SPUR and online (Reddit)
- **Community Meetings**: Second round of public meetings

Community Interface

- **Online Open House**: Hosted on project website
- **Jurisdiction Meetings**: Second round of meetings with jurisdictions
- **Technical Documents**: Definitions memo and Comparison Corridor Best Practices memo

Website: www.Caltrain2040.org