Caltrain Business Plan

FEBRUARY 2019

LPMG

February 28, 2019

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

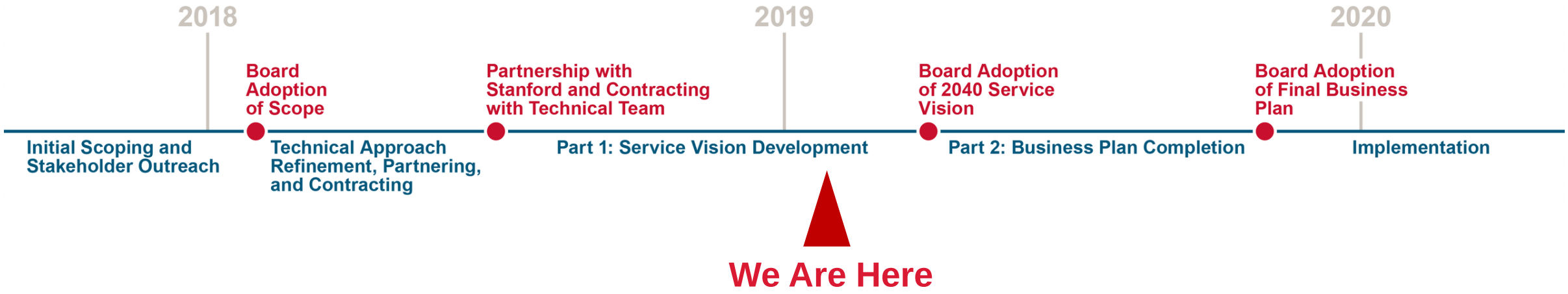
Community Interface

- 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?



Recap- Planning for Service in 2040

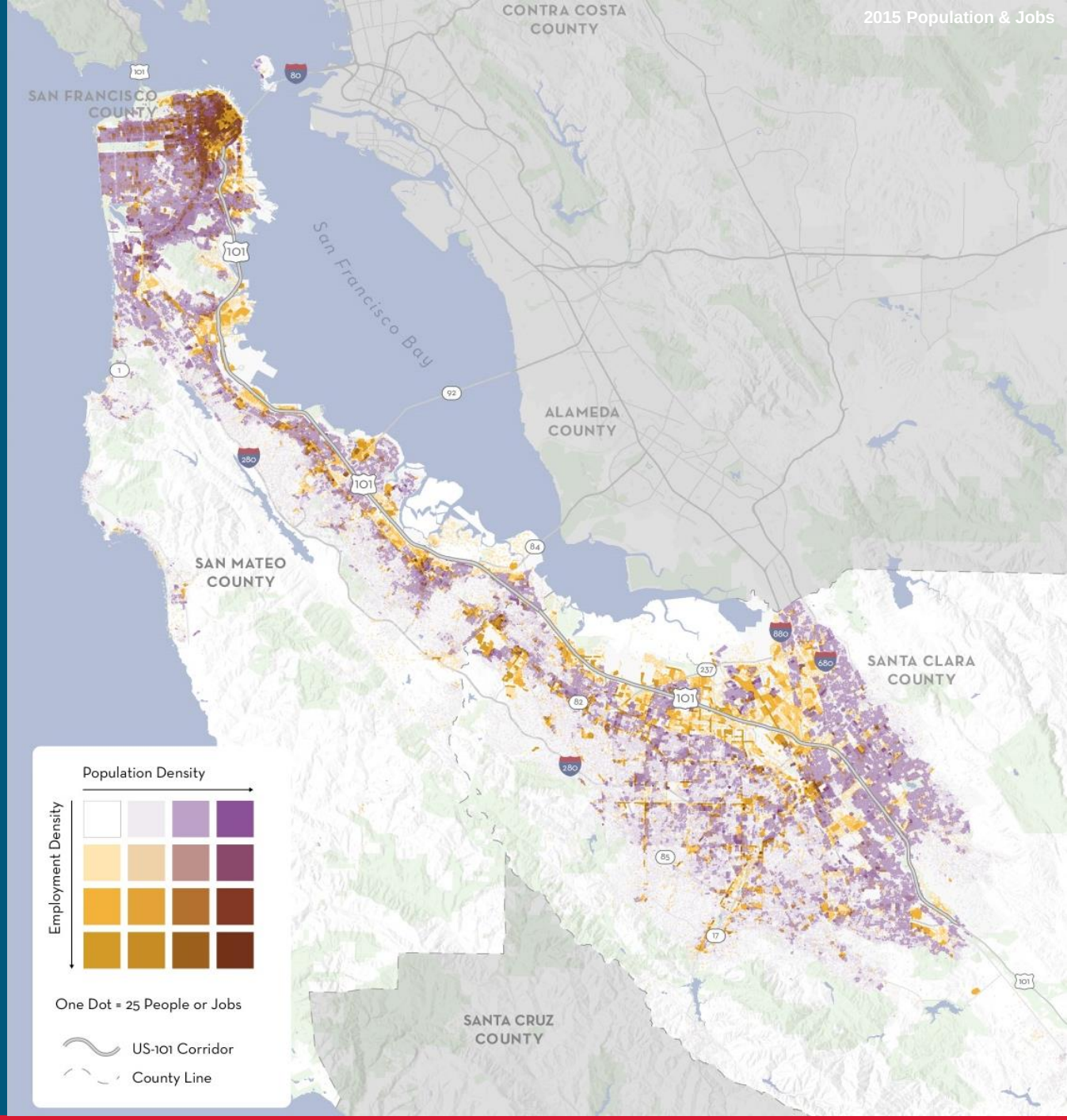
2040 Demand

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

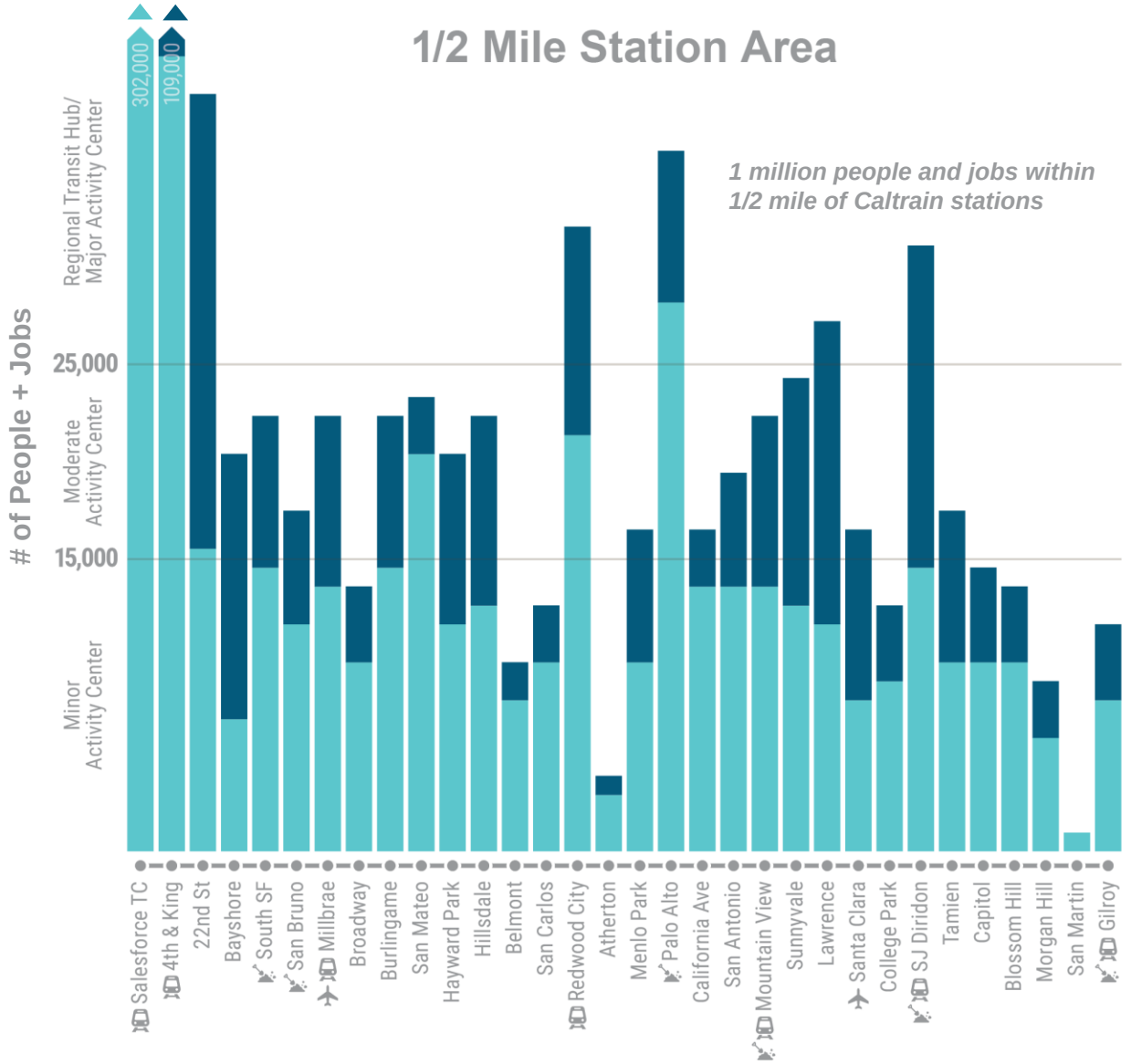
Major transit investments are opening new travel markets to Caltrain

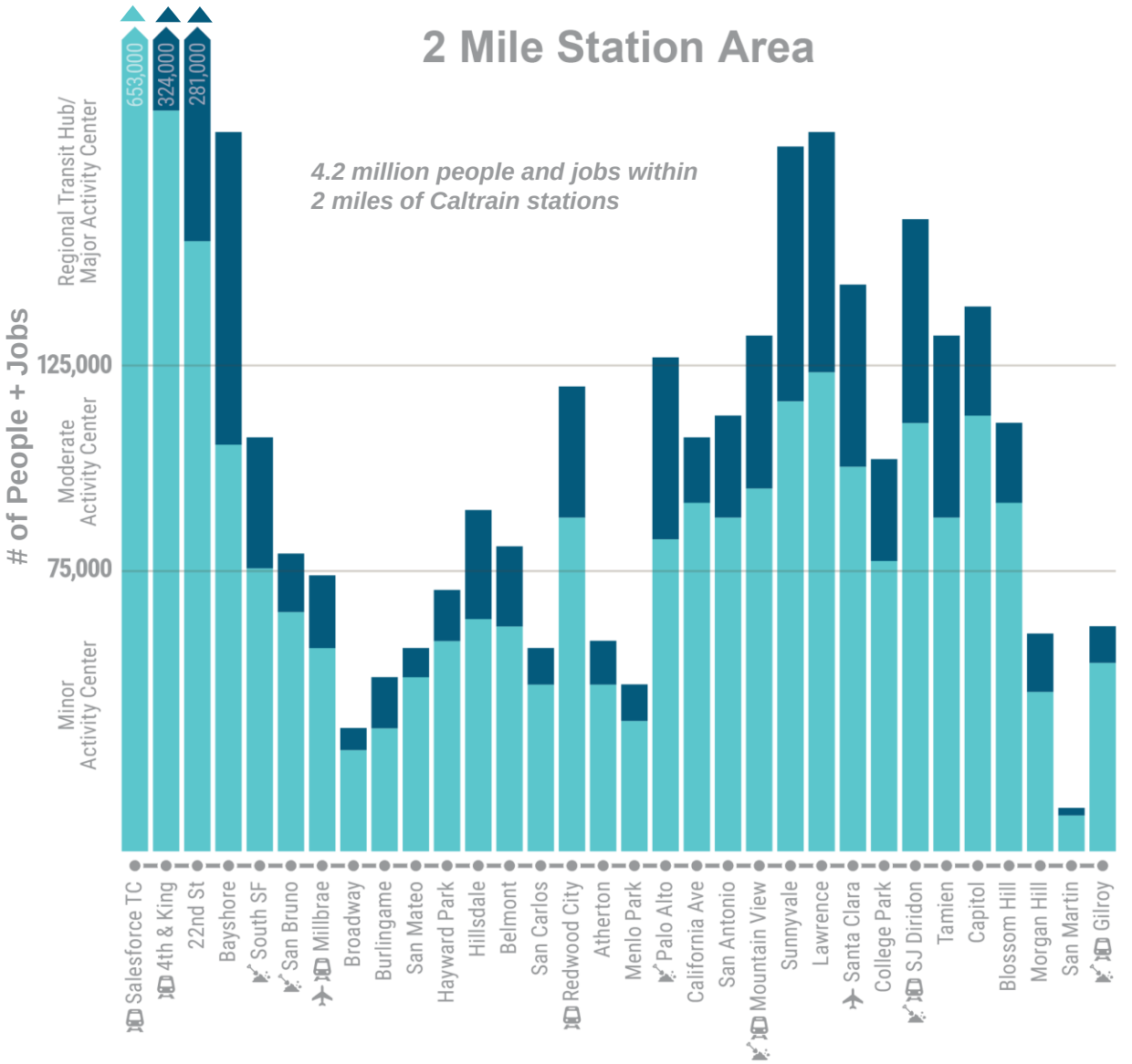
- Downtown Extension and Central Subway to provide more direct connections to downtown San Francisco
- Dumbarton Rail, BART to San Jose, and improvements to Capitol Corridor and ACE to strengthen connectivity with East Bay
- HSR and Salinas rail extensions to increase interregional travel demand



[1]Based on Plan Bay Area forecasts and approved projects by individual cities

2040 Land Use & Transportation Context

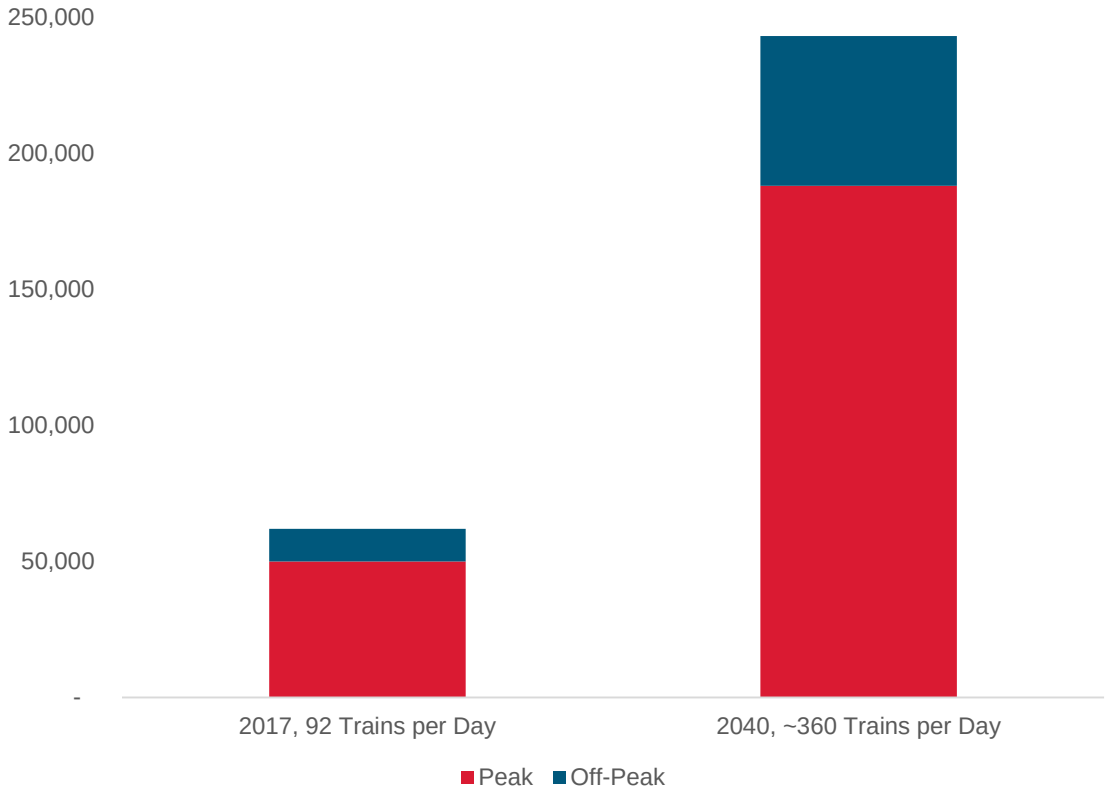




Indicates a station where substantial growth beyond Plan Bay Area forecasts is anticipated, but not yet approved

Exploring the Potential Long Term Demand for Caltrain Service

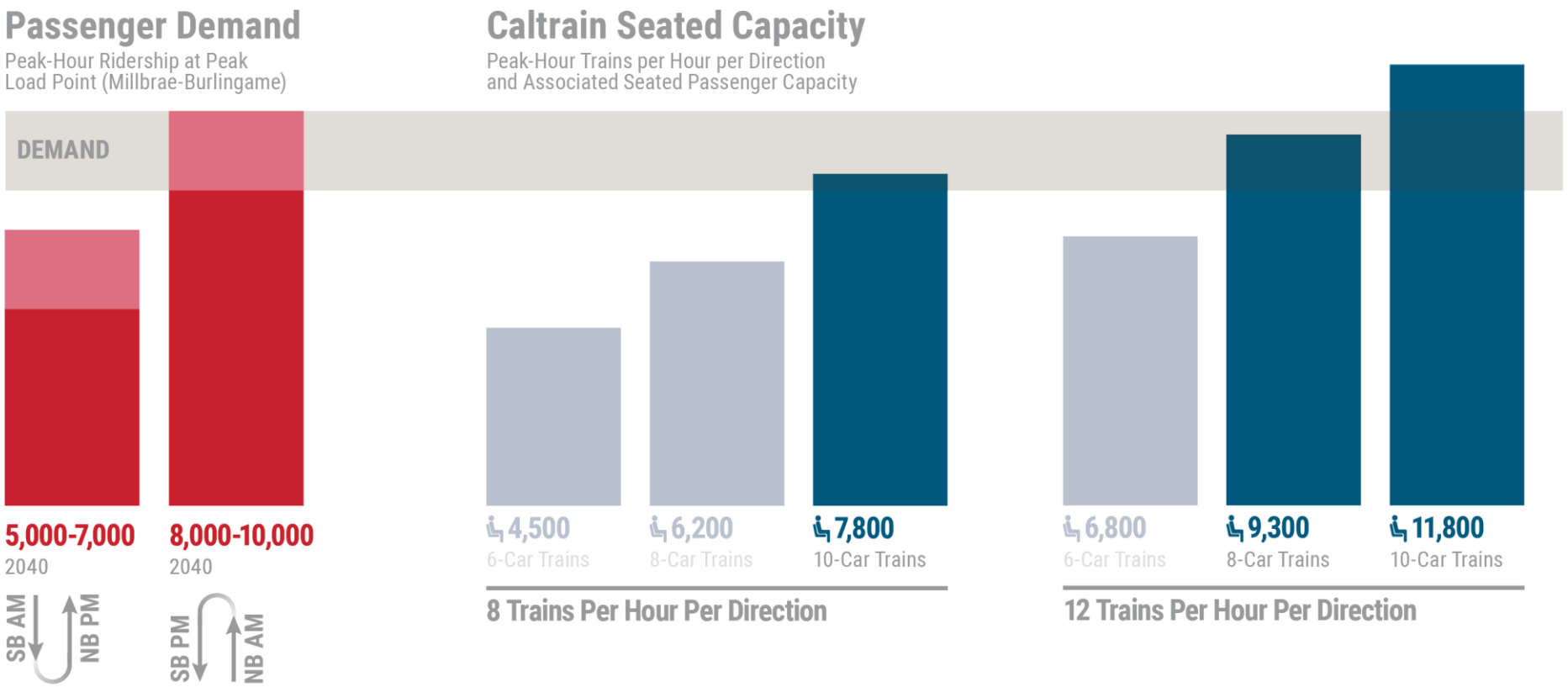
Using Plan Bay Area numbers for projected growth in jobs and housing, an unconstrained model run of high frequency, all-day BART-like service in the Caltrain corridor suggests that by 2040 there could be underlying demand for approximately 240,000 daily trips on the system



Description	2017: 92 Trains/Day	2040: ~360 Trains/Day
Daily	**62,000**	**240,000**
Peak	50,000	185,000
Off-Peak	12,000	55,000

Throughput Demand vs. Capacity

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



Seated capacity based on Stadler EMU with different door and bike car configurations. Does not include consideration of potential HSR capacity to serve demand

Choosing a Vision: How Will the Railroad Grow?

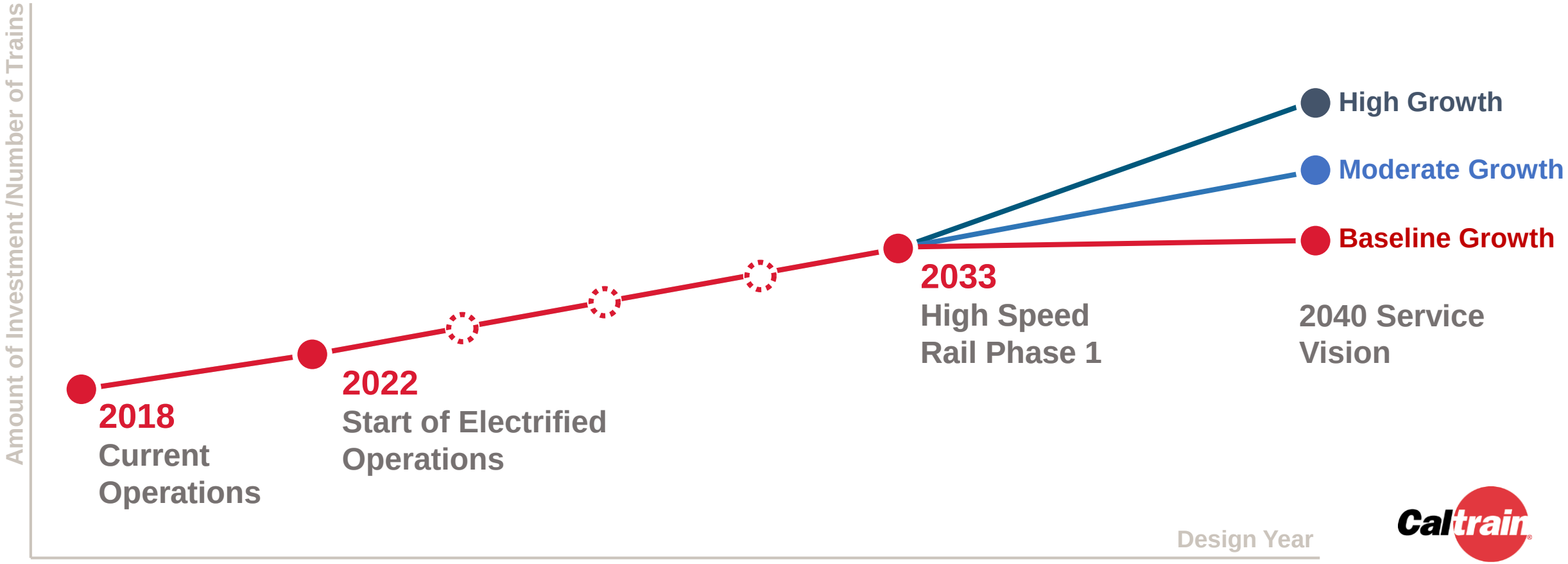
What

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

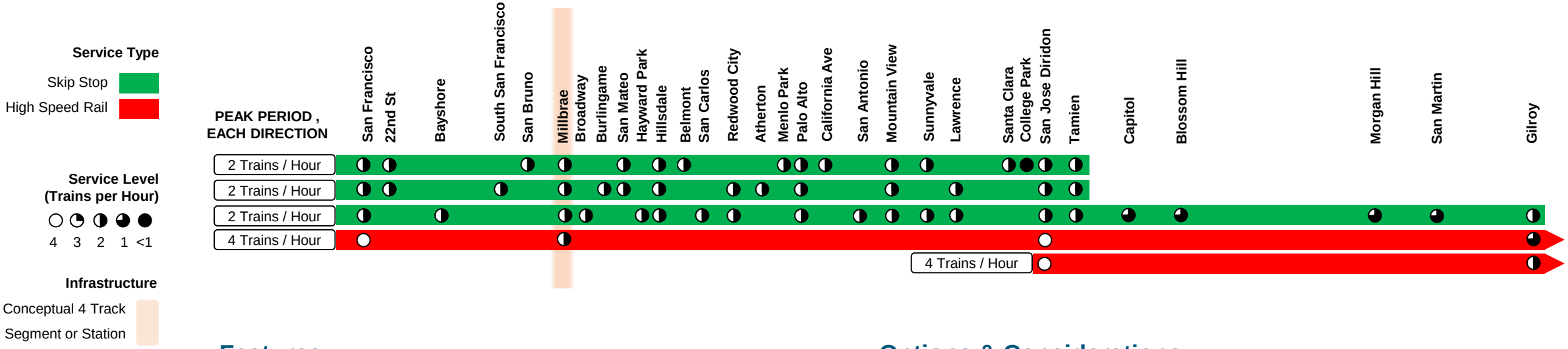
Why

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



2040 Baseline Growth Scenario (6+4 Trains)



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

Passing Track Needs

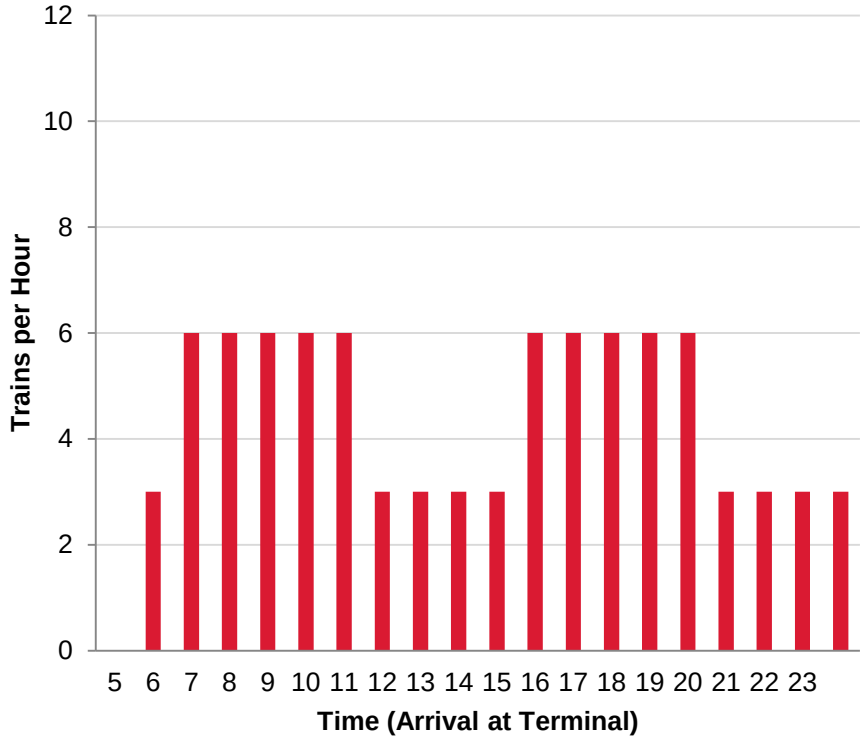
- Less than 1 mile of new passing tracks at Millbrae associated with HSR station plus use of existing passing tracks at Bayshore and Lawrence

Options & Considerations

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

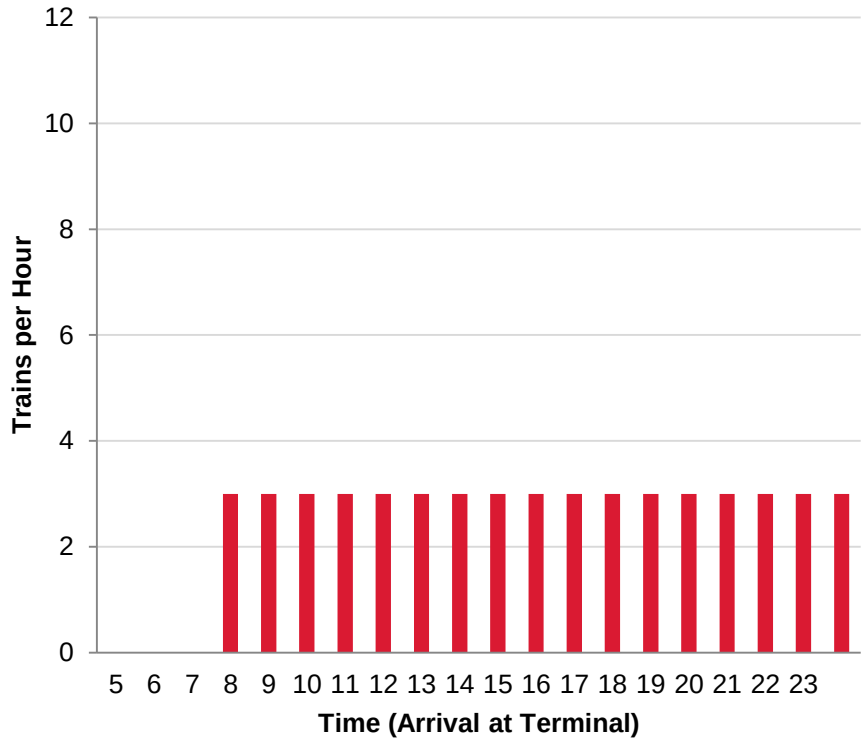
Baseline Growth Scenario – Full Day

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

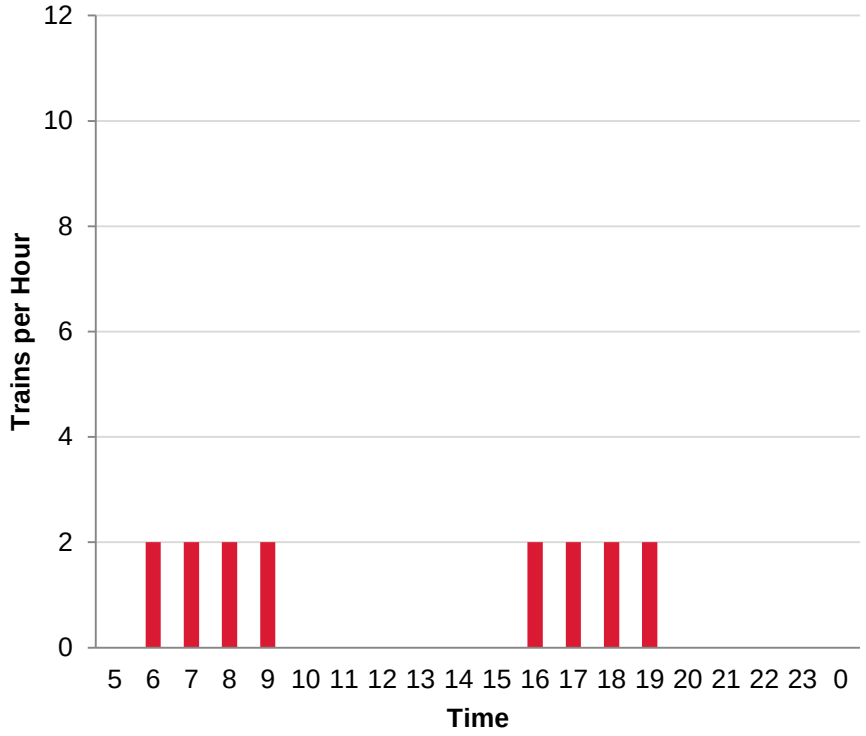


- 3 TPH during morning and evening peak periods (3 skip stop patterns at 1 TPH)
- HSR operates three trains per hour

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

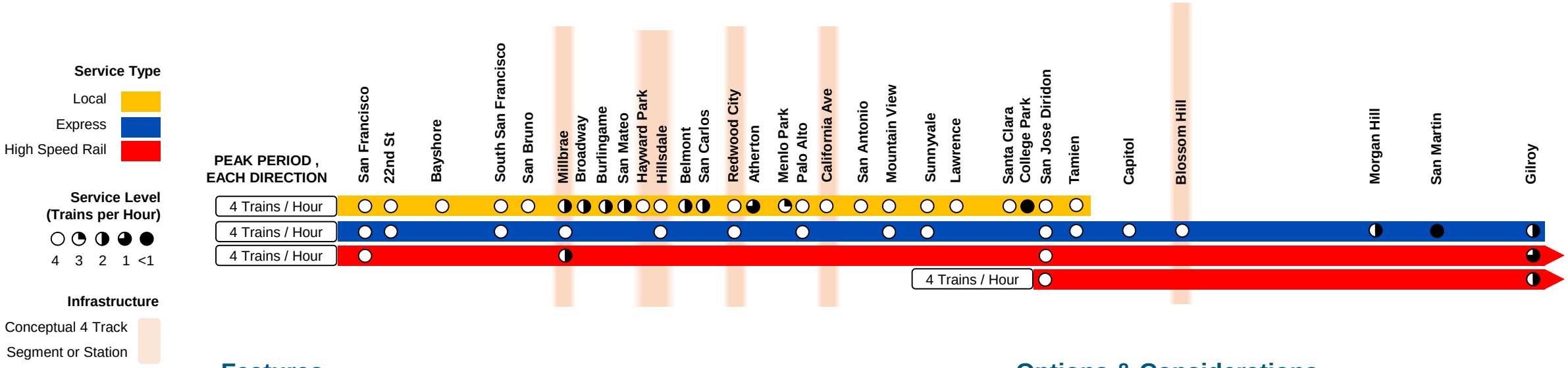
Weekend Service

NO WEEKEND CALTRAIN 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

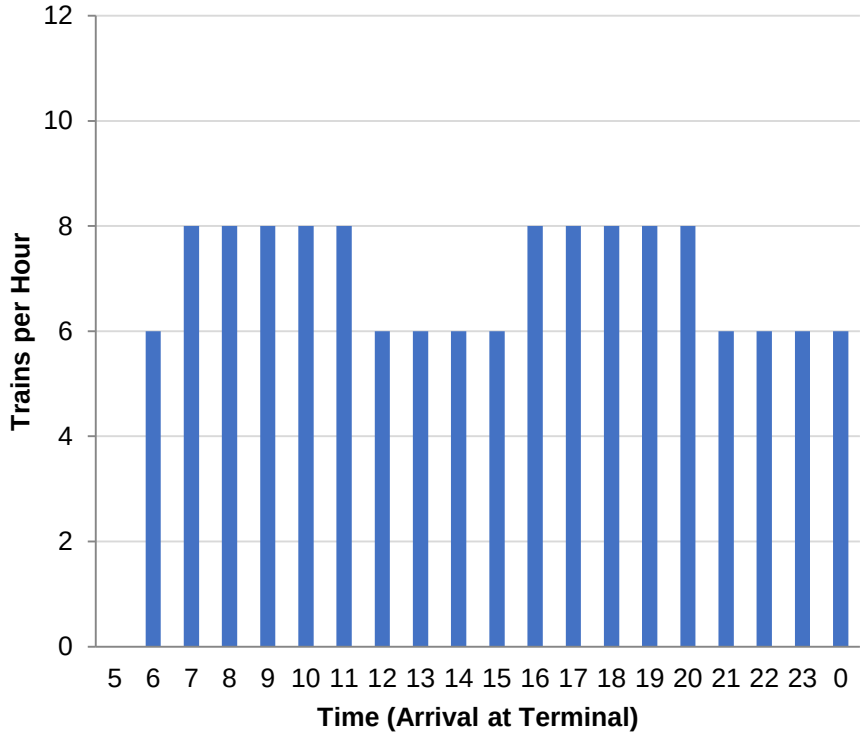
- Up to 4 miles of new 4-track segments and stations: Hayward Park to Hillsdale, at Redwood City, and a 4-track station in northern Santa Clara county (Palo Alto, California Ave, San Antonio or Mountain View. California Ave Shown)

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

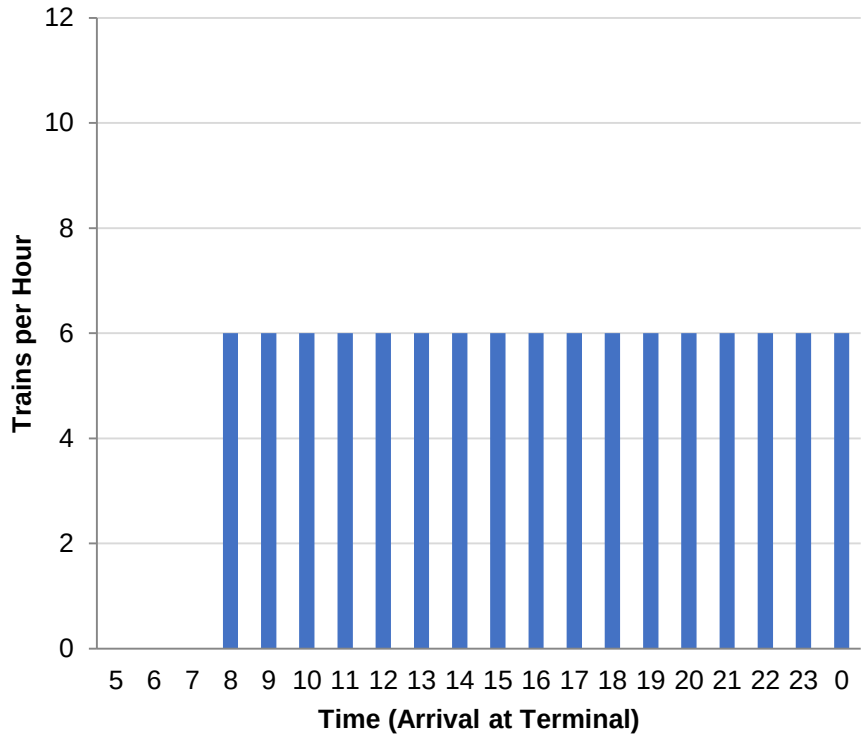
Moderate Growth Scenario – Full Day

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

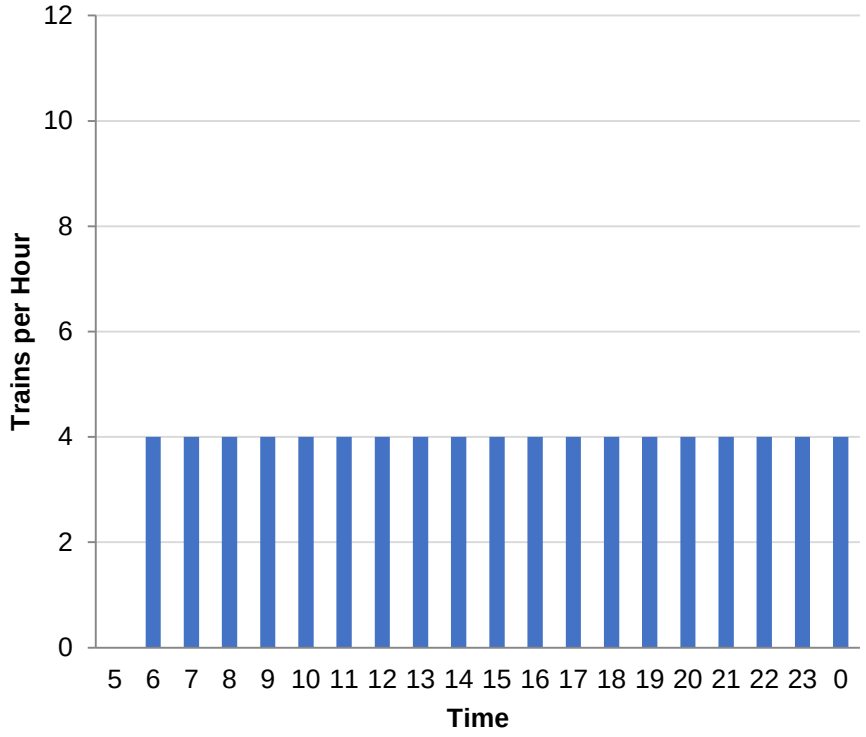


- 6 TPH during early AM, midday, and evenings (2 local and 4 express trains)
- HSR operates 3 TPH

Charts depict Caltrain arrivals only

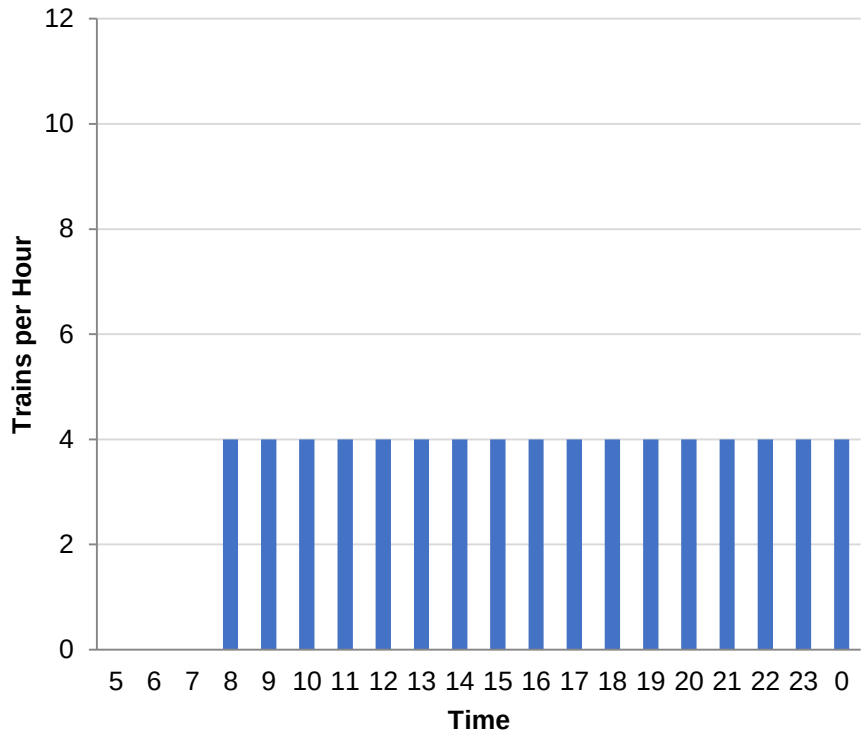
Moderate Growth – Capitol & Blossom Hill

Weekday Service



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

Weekend Service



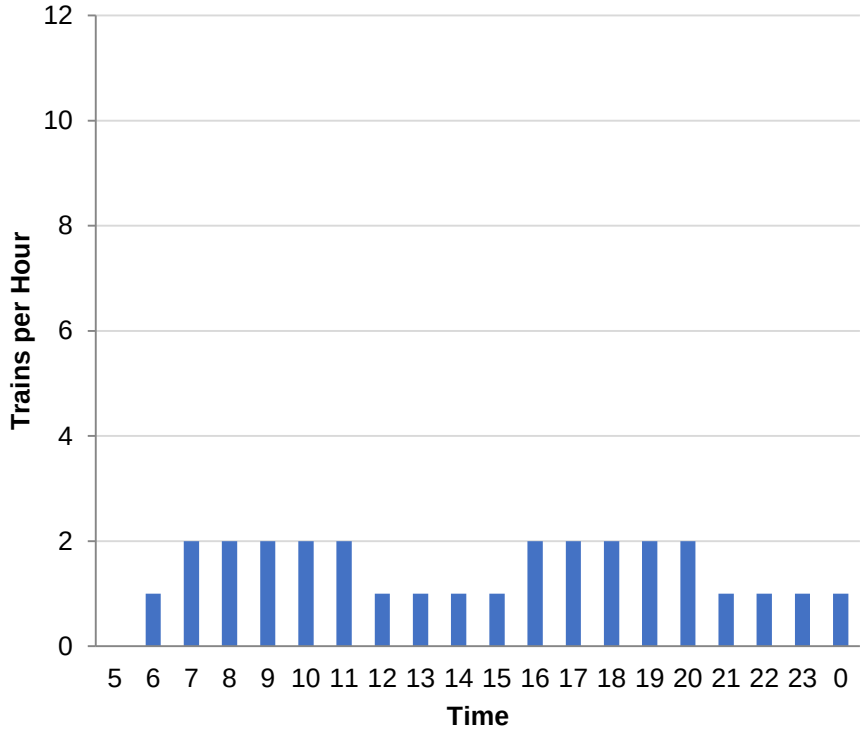
- Caltrain: 4 TPH throughout the day
- HSR: 4 TPH throughout the day

Assumes 4 track turnaround at Blossom Hill station

Charts depict Caltrain arrivals only

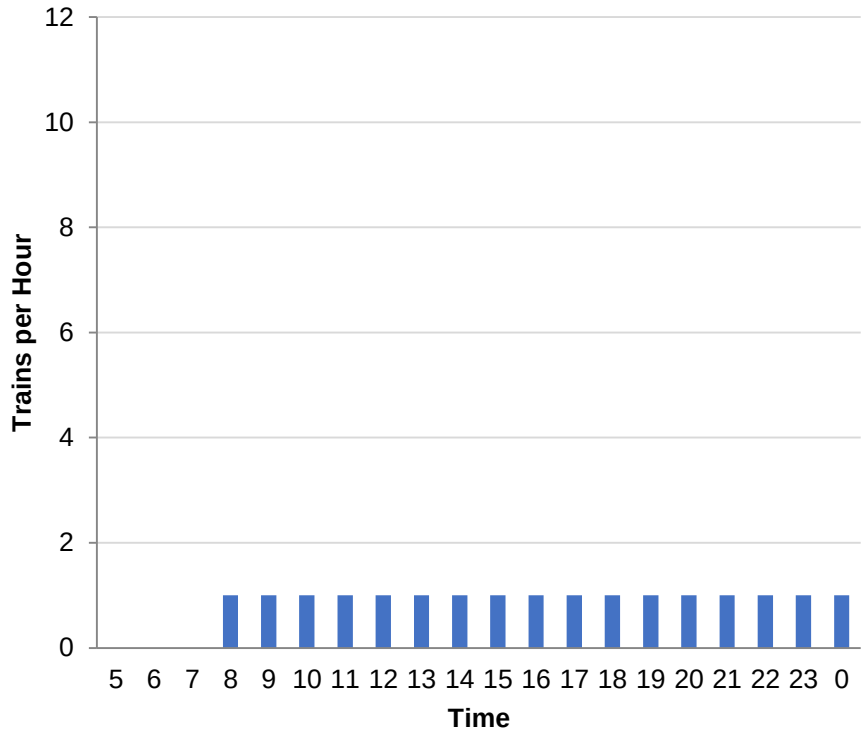
Moderate Growth – Morgan Hill & Gilroy

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)

Weekend Service

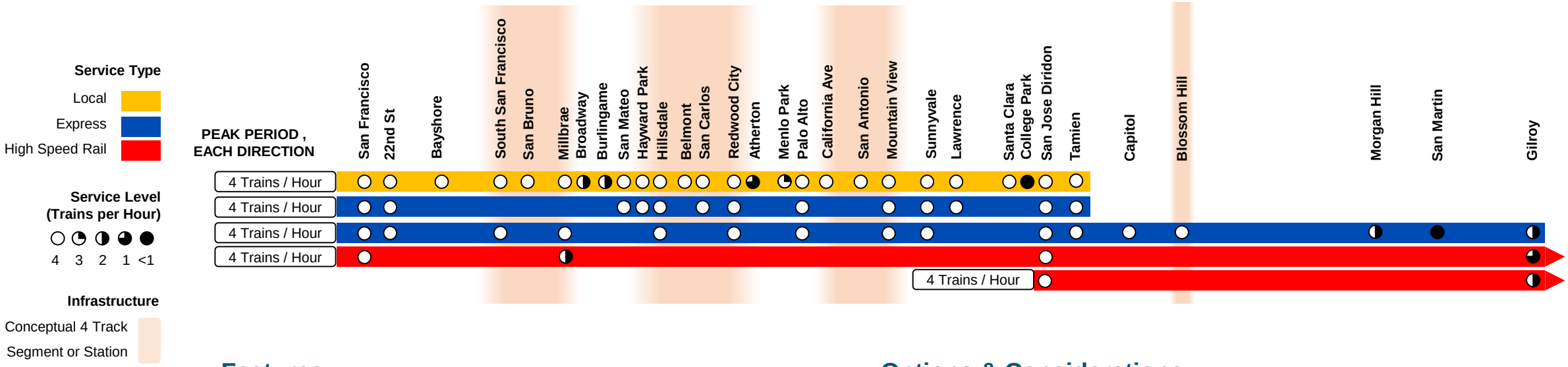


- Caltrain: 1 TPH throughout the day
- HSR: 4 TPH throughout the day (2 stopping at Gilroy)

Assumes 4 track turnaround at Blossom Hill station

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

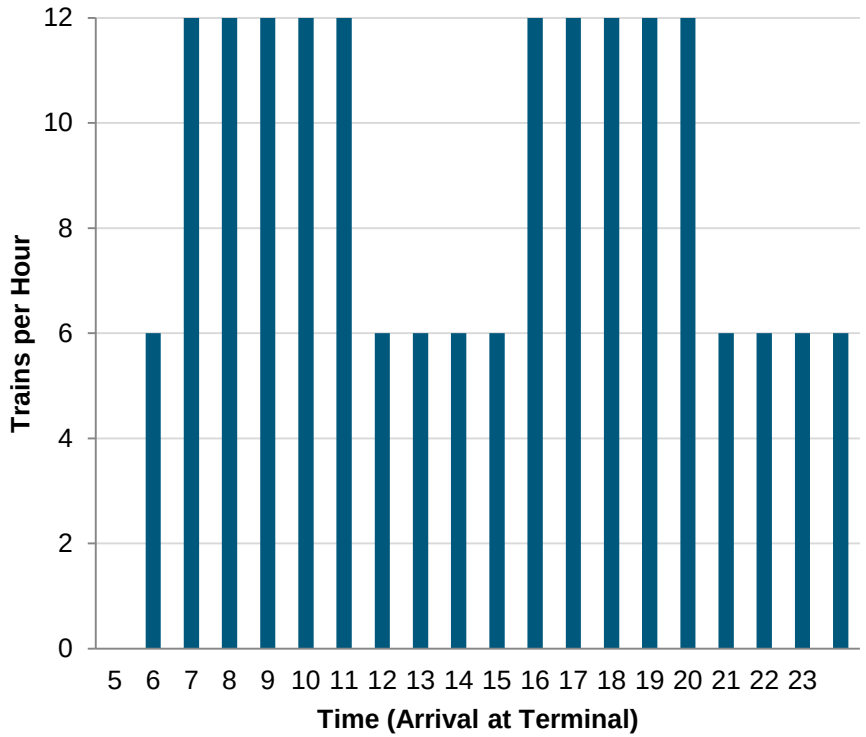
- Requires up to 15 miles of new 4 track segments: South San Francisco to Millbrae, Hayward Park to Redwood City, and northern Santa Clara County between Palo Alto and Mountain View stations (shown: California Avenue to north of Mountain View)

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

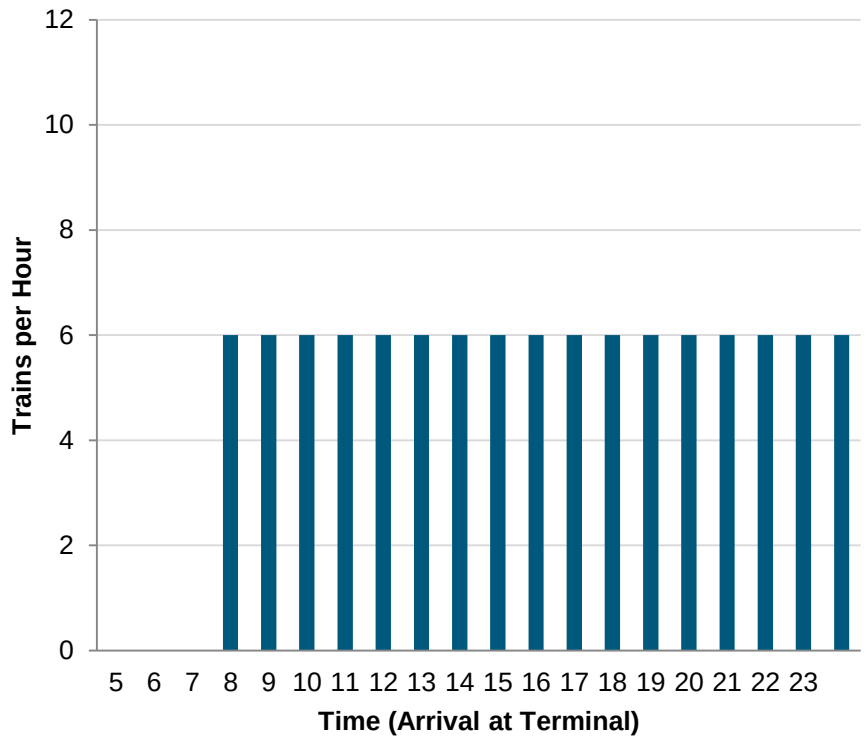
High Growth Scenario – Full Day

Weekday Service



- 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

Weekend Service

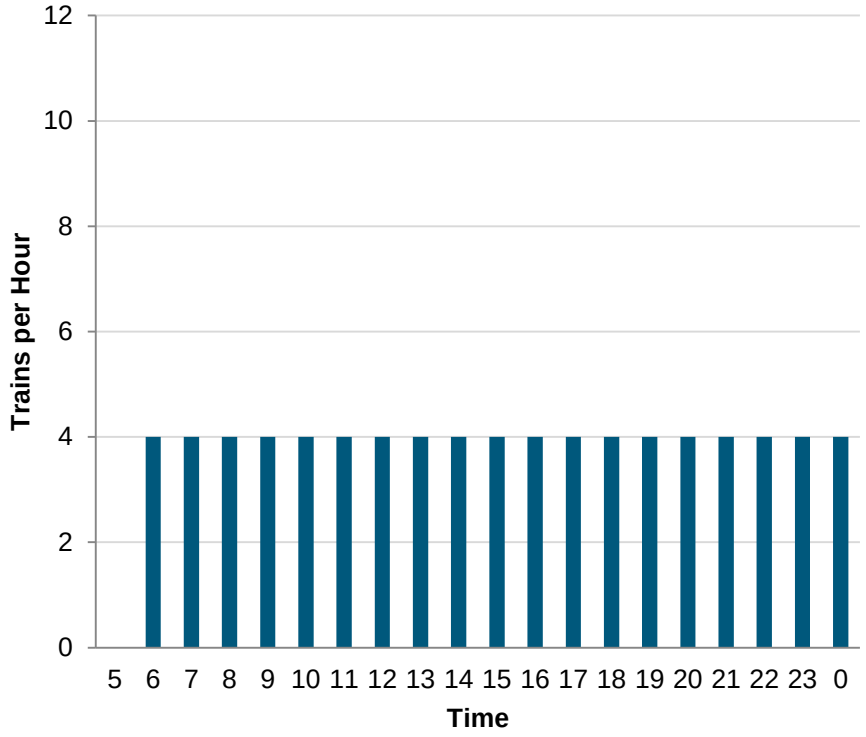


- 6 TPH during early AM, midday, and evenings (2 local and 4 express trains)
- HSR operates 3 TPH

Charts depict Caltrain arrivals only

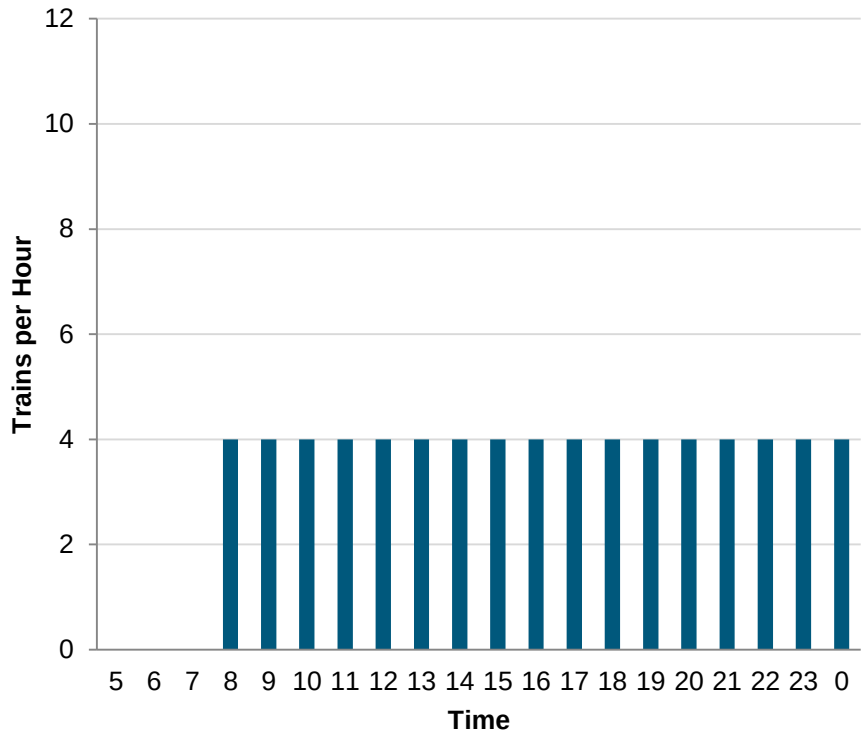
High Growth – Capitol & Blossom Hill

Weekday Service



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

Weekend Service



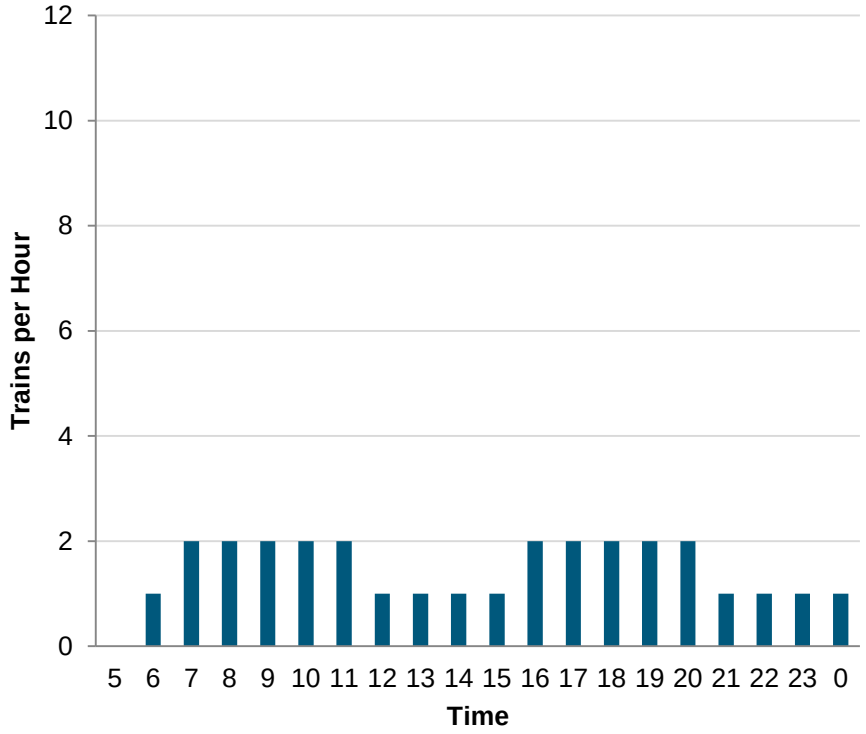
- Caltrain: 4 TPH throughout the day
- HSR: 4 TPH throughout the day

Assumes 4 track turnaround at Blossom Hill station

Charts depict Caltrain arrivals only

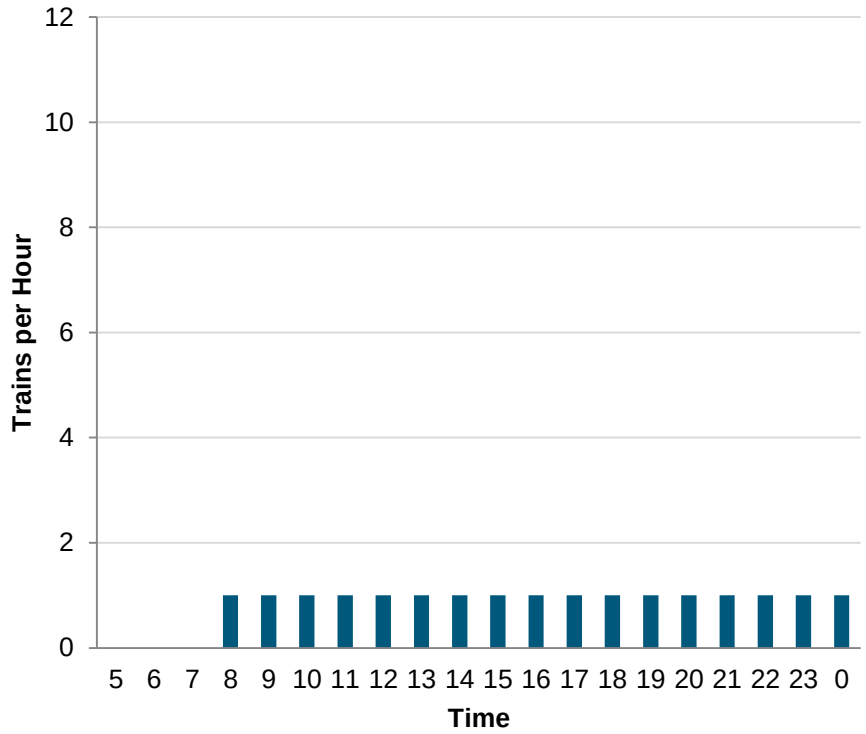
High Growth – Morgan Hill & Gilroy

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)

Weekend Service



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

Assumes 4 track turnaround at Blossom Hill station

Charts depict Caltrain arrivals only

Next Steps

Additional Service Planning

Additional Service Planning

Costing

Business Case Analysis

Community Interface & Outreach

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

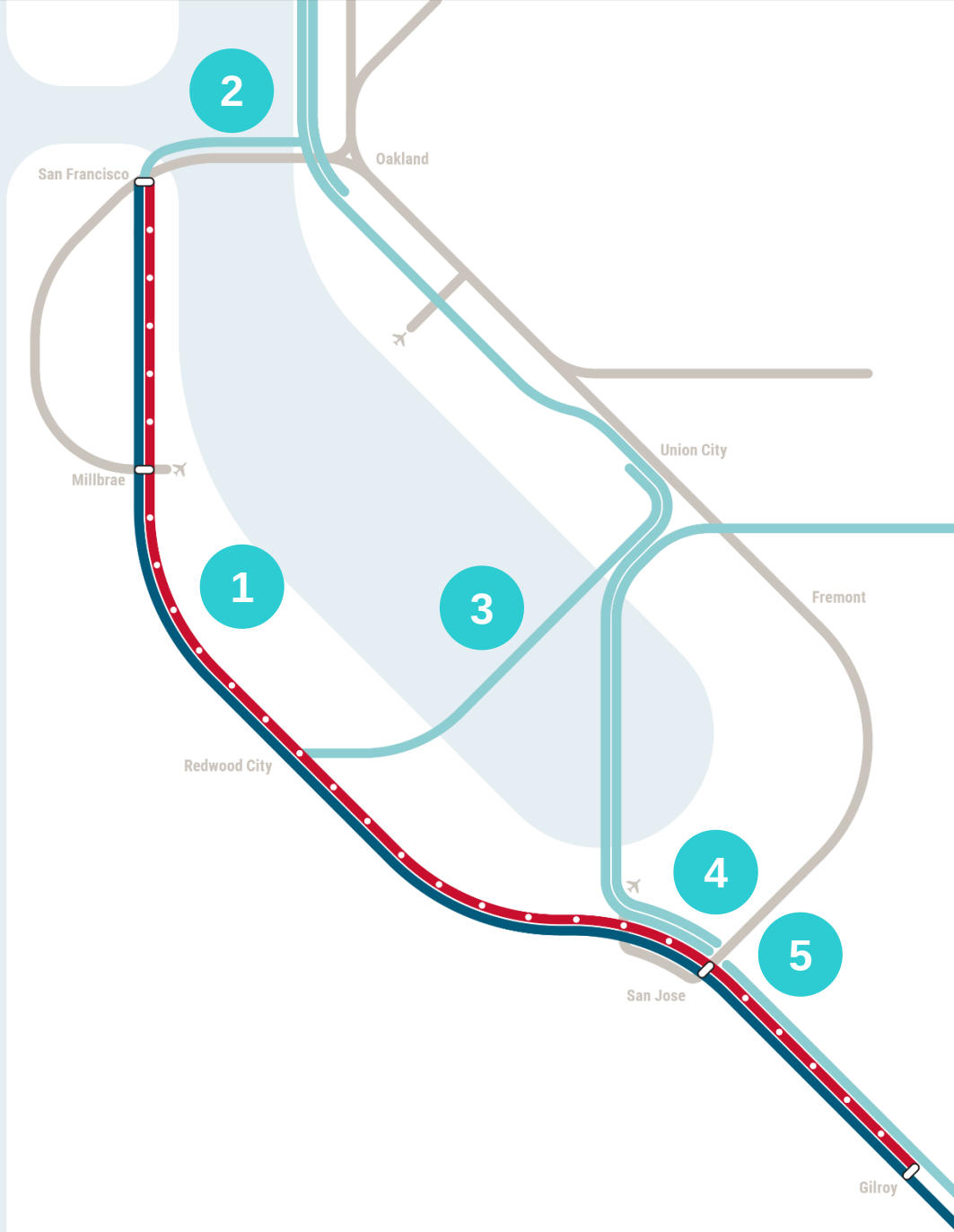
Present Model Results

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

Additional Service Planning

Costing

Business Case Analysis

Community Interface & Outreach

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

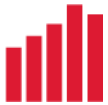
The business case will help the Board select a 2040 Service Vision with a fully informed understanding of what their choice means for the long-term costs and outcomes of the system and to the region as a whole. Once the Board has selected a long range Service Vision the business case can then be further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

Remaining Service Planning — Costing — Business Case Analysis — **Community Interface & Outreach**

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

Online Open House

Hosted on project website

Community Interface

Jurisdiction Meetings

Second round of meetings with jurisdictions

Technical Documents

Definitions memo and Comparison Corridor Best Practices memo

Website: www.Caltrain2040.org

FOR MORE INFORMATION

WWW.CALTRAIN.COM