



Local Policy Maker Group (LPMG) Meeting

Thursday, November 29, 2018

5:30 p.m. – 7:30 p.m.

**SamTrans Offices – Bacciocco Auditorium 2nd Floor
1250 San Carlos Ave., San Carlos**

Agenda

1. Staff Report
2. Caltrain Business Plan
3. Caltrain Electrification Project
4. HSR Updates (Presented by California High-Speed Rail Authority Staff)
5. Public Comments
6. LPMG Member Comments/Requests
 - a. Grade Separation Toolkit
7. Next Meeting
 - a. Thursday, December 20, 2018 at 5:30pm

All items on this agenda are subject to action



Memorandum

Date: November 29, 2018
To: Local Policy Maker Group (LPMG)
From: Sebastian Petty, Caltrain
Re: Caltrain Business Plan Update

PROJECT UPDATE

The following is the fourth in a series of monthly project updates for the Caltrain Business Plan. These updates provide a high level summary of project activities and progress and are paired with an annotated presentation that reflects project materials and messaging shared with stakeholder groups during the subject month. The following "November" update covers work completed in late October and November of 2018.

ONGOING TECHNICAL WORK

The Caltrain Business Plan consulting team is continuing technical work on the Business Plan. Key areas of focus for the team during November have included;

- Major service planning work focused on the development of a "high growth" 2040 service scenario for the corridor including;
 - Refinement of travel market assessment and application to service planning work
 - Work with HSR and agency partners to agree to initial operating parameters and service planning methodology
 - Development of service approaches and peak hour concepts for the corridor between San Francisco and San Jose
 - Initial work on terminal planning, service south of San Jose, and off-peak / all-day service plan analysis
- Continued development of technical modeling tools and approaches that will be used to support the articulation of a 2040 service vision and accompanying business case. Key areas of focus include;
 - The ongoing development and calibration of an integrated business modeling tool
 - The development of a capital costing framework
 - Development of economic analysis and regional benefit assessment methodology
- Continued functional mapping of the Caltrain organization and initial research related to national and international peer organizations
- Documentation of community interface and identification of key issues and areas of focus for peer corridor analysis



MEETINGS AND OUTREACH

Late October and November were significant outreach months for the Business Plan. The team presented a quarterly update to the JPB at a special session in early October and continued outreach activities based on this material throughout late October and November. Additionally, in November, initial stakeholder engagement commenced on the next wave of technical work including initial service planning outputs. Key meetings have included;

Quarterly Update Materials

- Caltrain Bicycle Advisory Committee, November 15
- Partner Boards and Committees
 - San Mateo County Transportation Authority Citizen Advisory Committee, October 30
 - San Mateo County Transportation Authority Board, November 1
 - San Mateo County Transit District Board, November 7
 - Valley Transportation Authority Safety, Security, Transit Planning and Operations Committee
- Public Meetings
 - San Carlos, November 13
 - San Francisco, November 14
 - San Jose, November 26

Meetings focused on new Technical Materials

- Project Partner Committee Meetings, October 26 and November 6
- CSCG, November 14
- LPMG, November 29

Additionally, a dedicated website for the Caltrain Business Plan was launched on November 12. The website provides detailed information about the Business Plan and acts as a repository for key documents and resources. The website will be updated regularly and will be periodically promoted through social media and other channels. It can be accessed at www.caltrain2040.org

NEXT STEPS

The first part of the Business Plan is focused on the development of a long-range service vision for the railroad accompanied by an assessment of the community-corridor interface and the Caltrain organization. The remainder of the project will be focused on the creation of the implementation plan, including a detailed business plan and funding approach. The Business Plan team will continue to provide monthly updates throughout the Business Plan. During the month of December the team will continue to provide significant updates on the service planning process as well as other work streams.

Caltrain Business Plan

NOVEMBER 2018

LPMG

November 29, 2018



The 2040 Vision: Planning For More

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

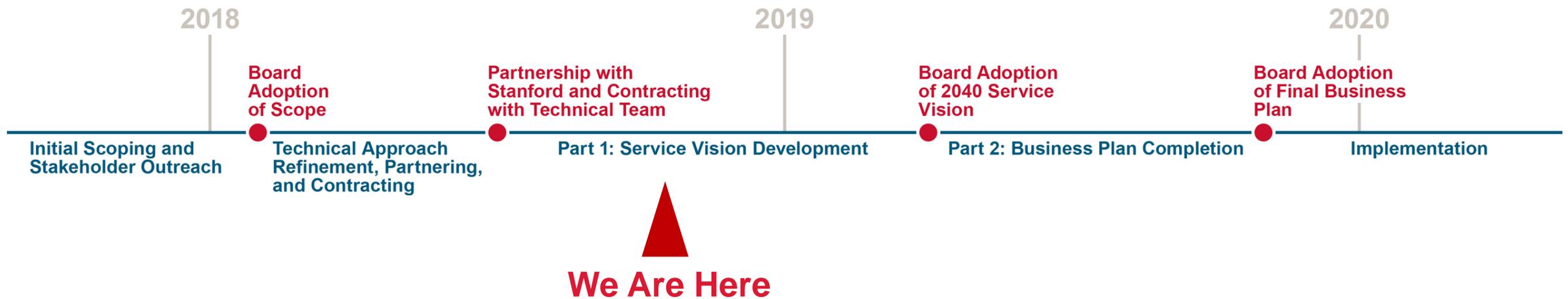
- Benefits and impacts to surrounding communities
- Corridor management strategies and consensus building
- Equity considerations

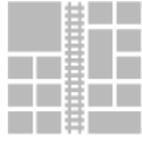


Organization

- Organizational structure of Caltrain including governance and delivery approaches
- Funding mechanisms to support future service

Where Are We in the Process?





Service Planning



Service Planning Process & Goals



**Service Planning
Process & Goals**



2040 Market
Demand



Service Concept
Development



Service Concept
Evaluation

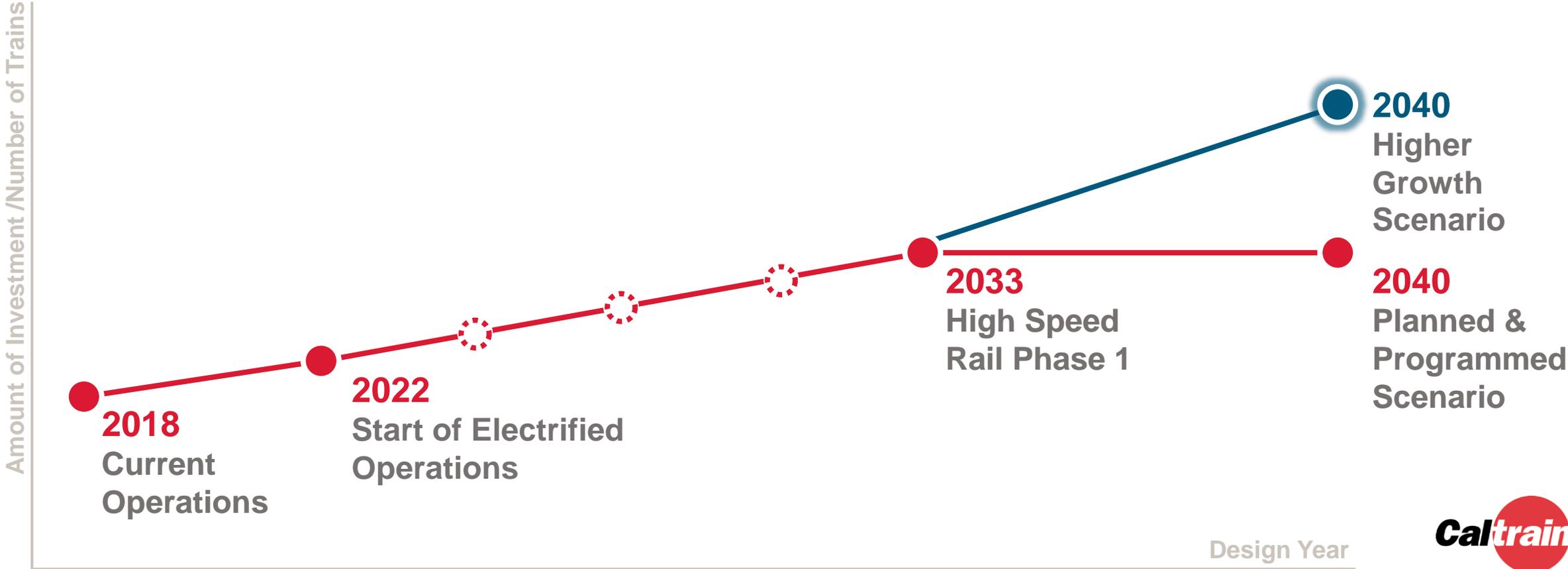


Choosing a Vision: How Will the Railroad Grow?

What In the Spring of 2019 the team will present two growth scenarios to the Board. One will generally reflect past and ongoing Blended System planning efforts while another will explore a higher level 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

Context: Two Ways to Grow



What is the Process for Developing the Higher Growth Service Plan?

1. **Develop service planning assumptions, parameters, and goals**
2. **Identify initial service approaches**
3. **Develop detailed peak hour concepts**

Future Steps

4. Refine and evaluate detailed service concepts
5. Expand service concepts to include terminals in San Francisco and San Jose and service to South San Jose and Gilroy
6. Develop all-day and weekend service plans

Initial Service Planning: Geographic Scope

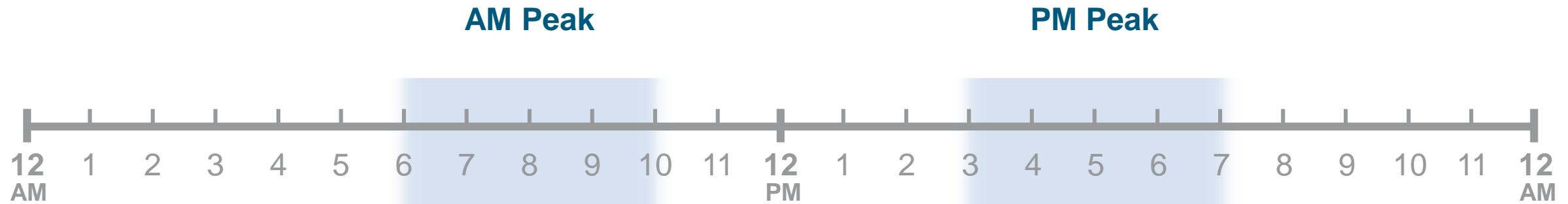
Initial service planning focuses on the Caltrain corridor between San Francisco and San Jose

Terminal operations in San Francisco and San Jose will be analyzed next as will service to South San Jose, Morgan Hill, San Martin and Gilroy

- Salesforce Transit Center
- 4th & King
- 22nd St
- Bayshore
- South San Francisco
- San Bruno
- Millbrae
- Broadway
- Burlingame
- San Mateo
- Hayward Park
- Hillsdale
- Belmont
- San Carlos
- Redwood City
- Atherton
- Menlo Park
- Palo Alto
- California Ave
- San Antonio
- Mountain View
- Sunnyvale
- Lawrence
- Santa Clara
- College Park
- San Jose Diridon
- Tamien
- Capitol
- Blossom Hill
- Morgan Hill
- San Martin
- Gilroy

Initial Service Planning: Temporal Scope

Initial service planning is focused on the AM and PM peak periods. All day service plans will be developed later in the service planning process.



Key Concept

Improving Service Requires Investment

There are many different ways to invest in a railroad.

Delivery of both the “Planned and Programmed” and “Higher Growth” scenarios will require substantial investment into the corridor



Operations

- Increased service coordination and expanded operations to maximize the use of physical infrastructure

Systems

- Improved train performance
- Fleet expansion
- Improved train control and signaling

Infrastructure

- Track enhancement and expansion
- Station and terminal improvements
- Grade crossing investments

Example Investments

As service plans are refined, conceptual investments will be detailed, costed and incorporated into the development of the Business Case for each Scenario.

Types of Investment Assumed in All Scenarios

Conceptual Additional Investment Needed to Support Higher Growth

Curve straightening and track upgrades to support up to 110 mph operation	➔	Potential 3- or 4-track overtakes to allow for additional service (either at stations or as “running” overtakes)
New signaling system and PTC upgrades to support 2 min headways and 110 mph operation	➔	No further enhancement necessary to support increased service levels
Catenary pole placement adjustment to enable 110 mph operation	➔	Power supply and catenary system upgrades to support higher service levels
Some terminal and shared station modification as needed to support the Blended System	➔	Terminal modifications or expansion to accommodate increased service levels
Platform lengthening and level boarding	➔	Additional platform lengthening to support longer train consists
Full fleet electrification and expansion	➔	Further fleet expansion to allow for increased service and longer trains
Storage and maintenance expansion / reconfiguration	➔	Revised depot and maintenance strategy to accommodate increased fleet size
Grade separations and grade-crossing improvements	➔	Additional grade separations and improvements to at-grade crossings
General station, customer amenity and access facility improvements	➔	Improvements scaled with service levels and ridership

Initial Rail Operating Parameters

The following rail operating parameters are used as the starting point for 2040 service planning. Some variation to these parameters may be explored as service planning progresses.

Parameter	HSR	Caltrain
Minimum headway between trains	2 minutes	2 minutes
Turnaround time at terminal	20 minutes	20 minutes
Minimum station dwell time	2 minutes	1.0 (high-ridership stations) 0.7 (low-ridership stations)
Train equipment	High speed trainset	8-car electric multiple unit trainset
Speed limit	110 MPH	110 MPH
Recovery time	10% distributed	10% distributed

Service Planning Goals

The following directional “goals” are suggested as the basis for developing initial service concepts. Not every goal is fully achievable within the constraints of the Caltrain corridor. Different concepts will achieve different goals with varying degrees of success.



Service

- Achieves 15 minute frequencies at most stations during peak
- Improves travel times between major markets
- Maintains service coverage between most origin-destination pairs



Ridership

- Provides differentiated service levels based on market demand
- Provides throughput capacity responsive to demand



Infrastructure

- Can be phased over time
- Meets multiple objectives
- Provides flexibility in response to changing demands
- Efficient design and sizing



Users

- Regularity, legible route structure & clockface schedule
- Reliability
- Facilitate Transfers to local, regional and state connections



Community

- Maintain local access and circulation
- Minimize mainline track expansions

SHARING SESSION

**Do you have any initial
questions about the service
planning process?**



2040 Market Demand



Service Planning
Process and
Goals



**2040 Market
Demand**



Service Concept
Development



Service Concept
Evaluation



Existing Ridership

Today, Caltrain serves bidirectional and polycentric ridership demand

- 62,000 daily boardings¹
- 64%-36% NB-SB split during AM peak period
- Half of trips occur outside of San Francisco

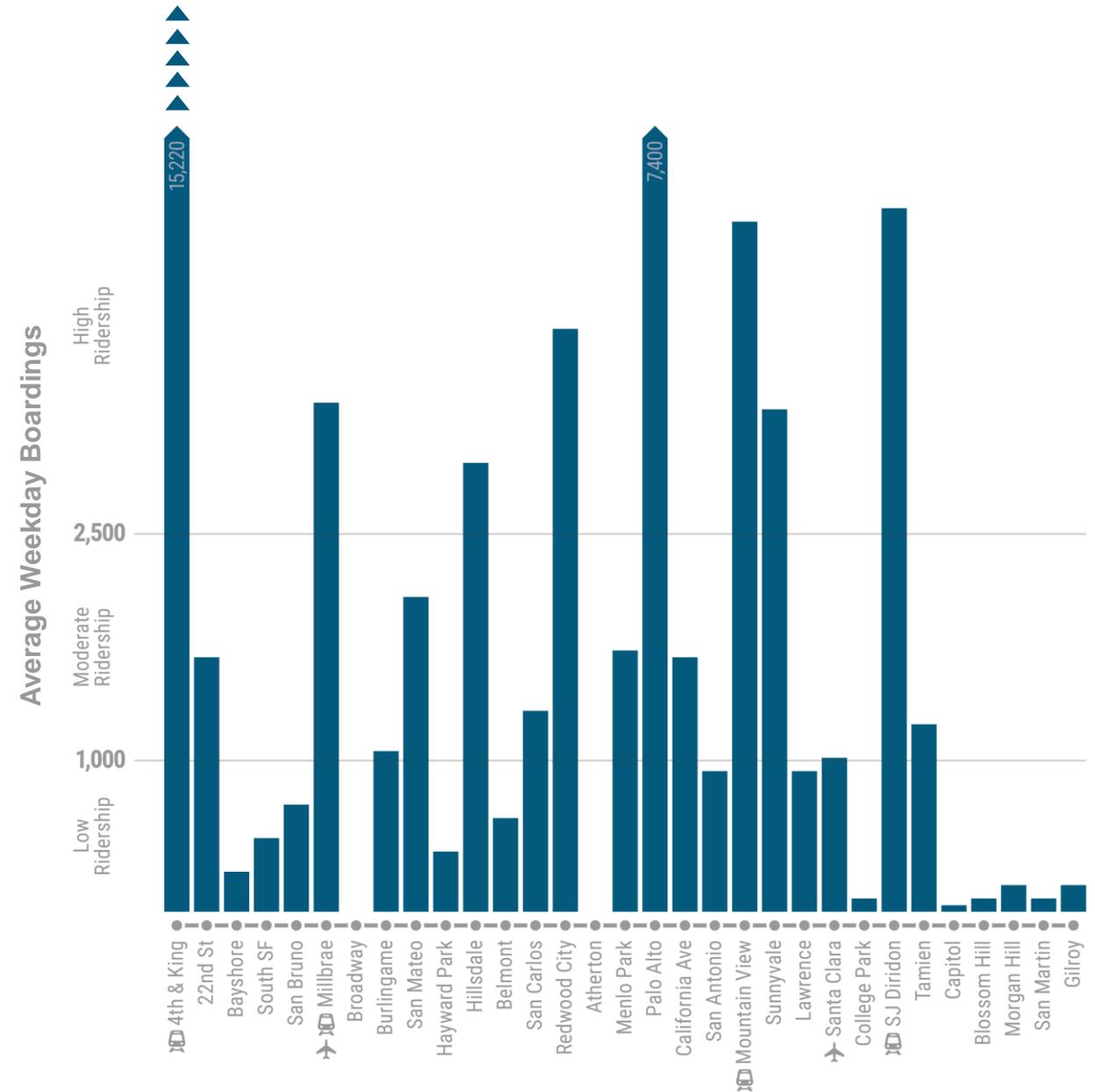
Ridership is highly concentrated around stations with fastest & most frequent Service

- 73% of ridership at 8 Baby Bullet stations served by 4 or more trains per hour, per direction

Caltrain serves a relatively small share of corridor travel demand

- About 9% mode share for regional north-south travel
- Service, access, and capacity constrain ridership
- Latent demand for increased service at many stations

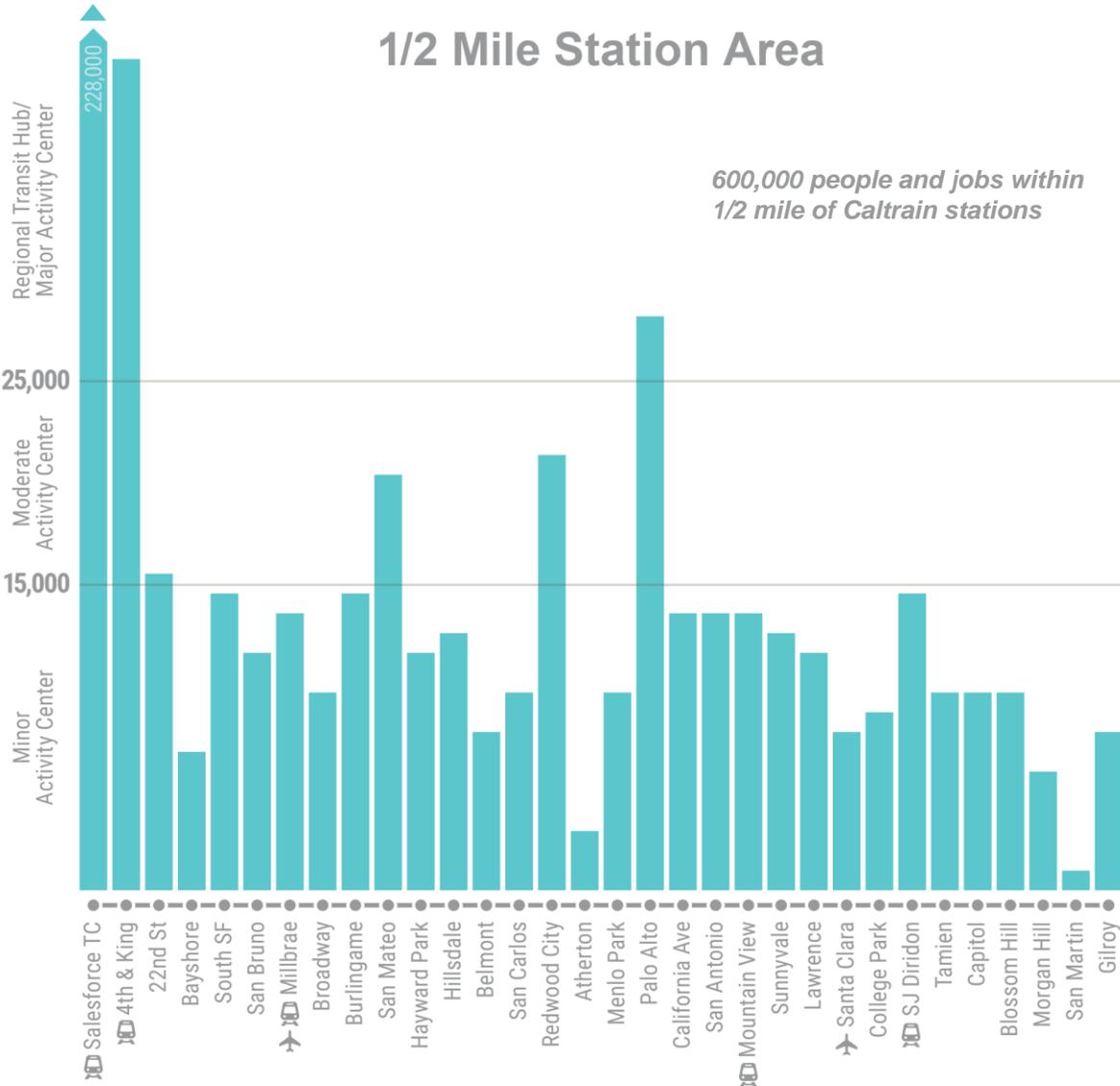
¹Based on 2017 ridership data



Existing Land Use & Transportation Context

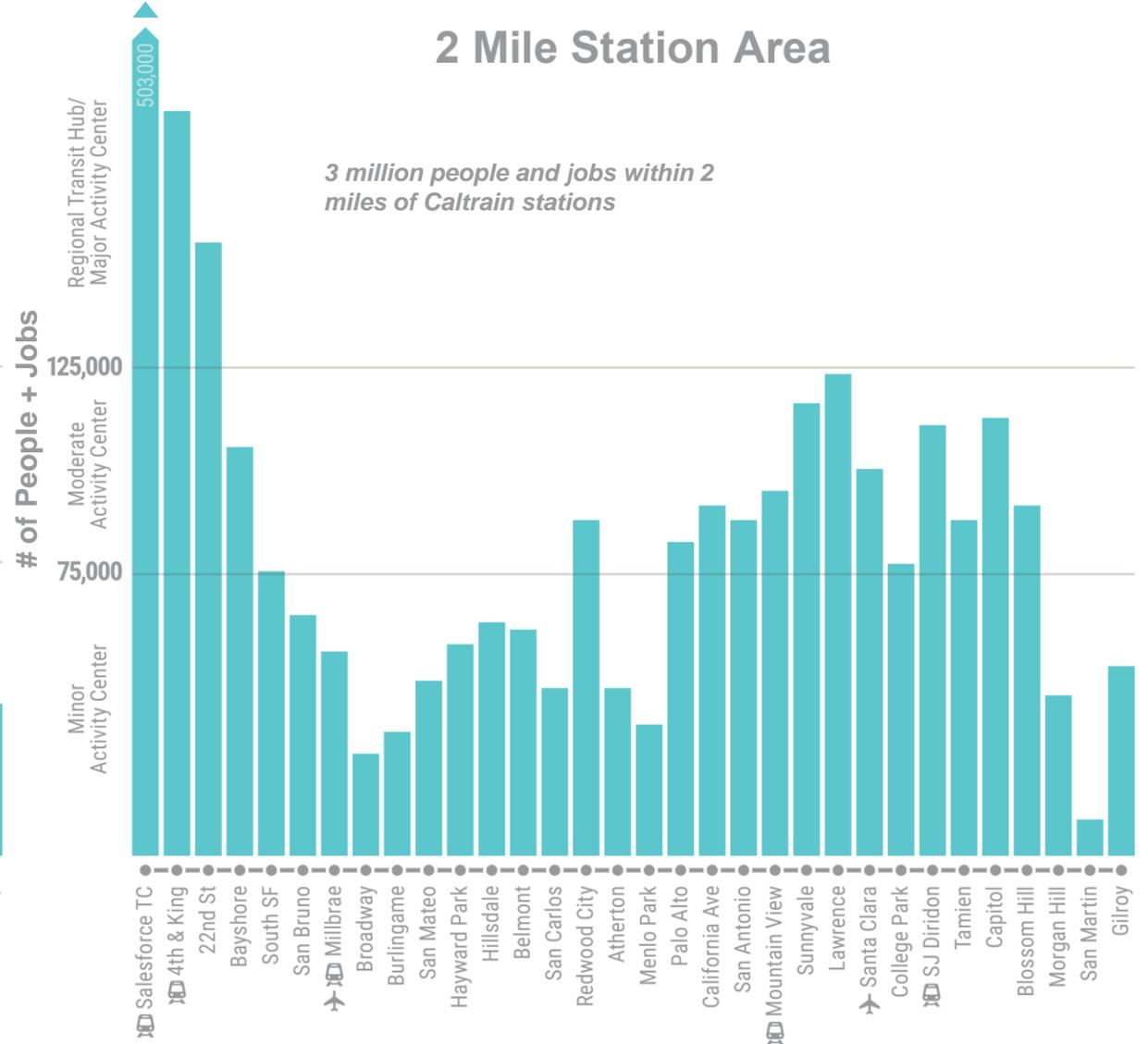
1/2 Mile Station Area

600,000 people and jobs within 1/2 mile of Caltrain stations



2 Mile Station Area

3 million people and jobs within 2 miles of Caltrain stations



2040 Demand

The Caltrain corridor is growing

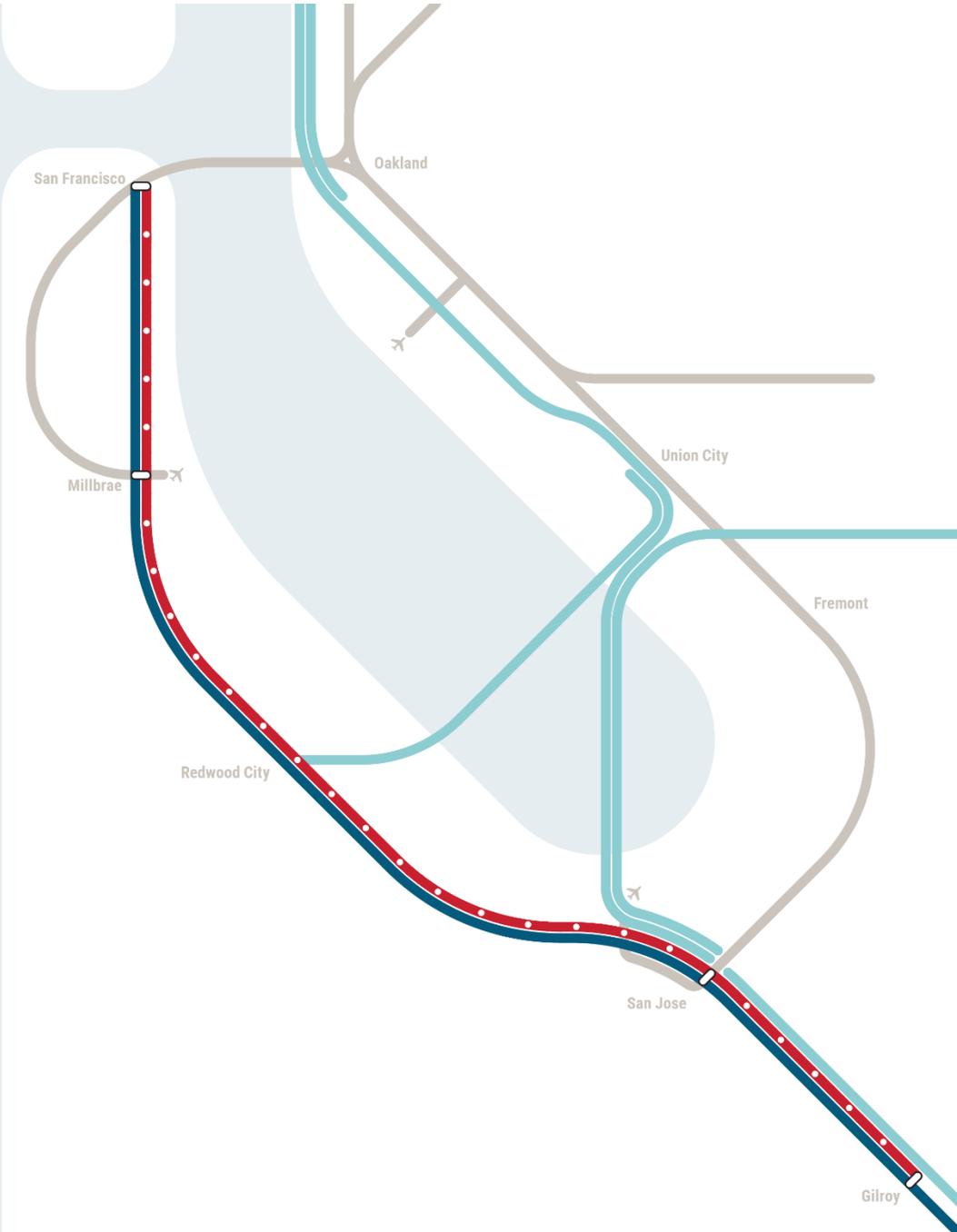
- Corridor expected to add 1.2 million people and jobs within 2 miles of Caltrain (+40%)¹
- 80% of growth expected in San Francisco and Santa Clara Counties

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

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

²Derived from a rough order-of-magnitude sensitivity test using the C/CAG Model



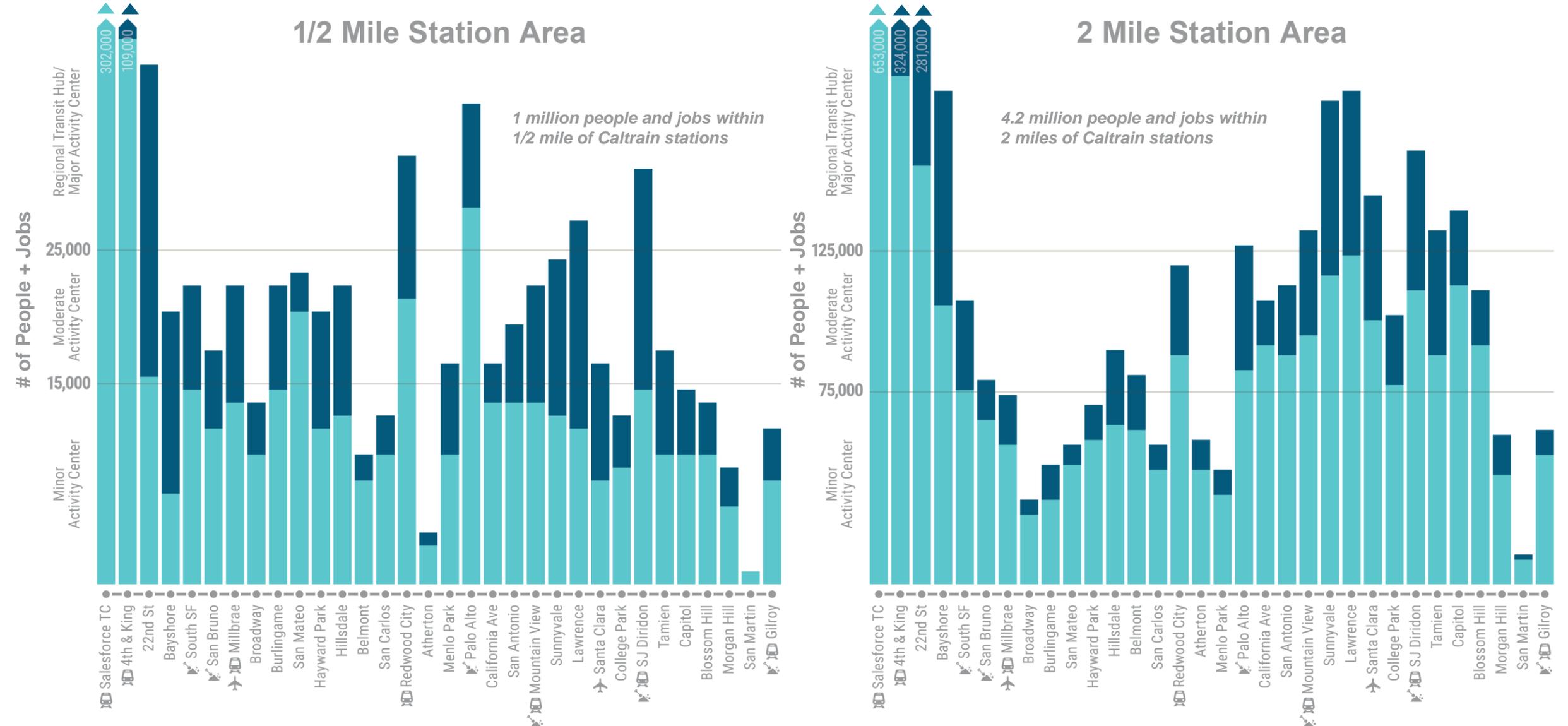
2040 Land Use & Transportation Context

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

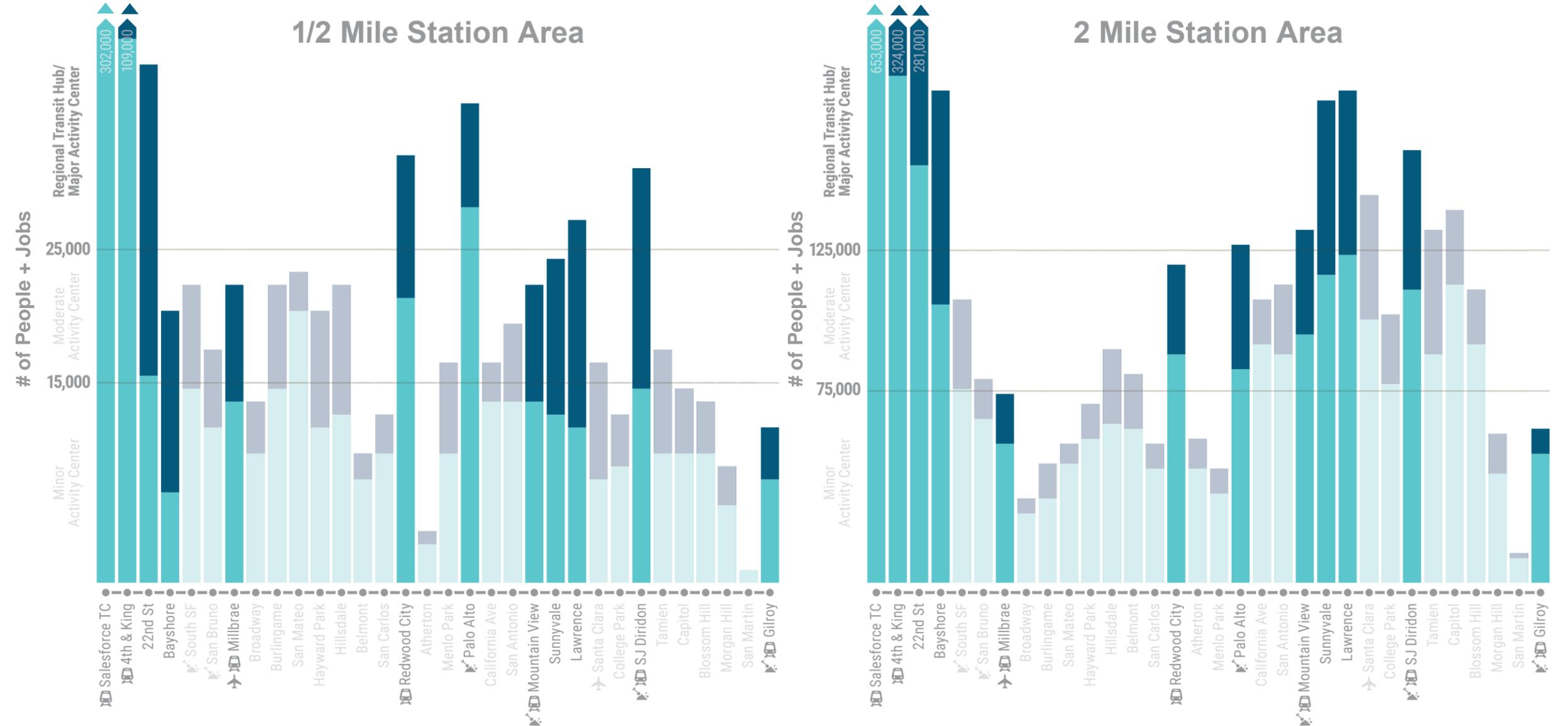


✈ Indicates a station where substantial growth beyond Plan Bay Area forecasts is anticipated, but not yet approved

2040 Stations with Higher Demand Potential

1/2 Mile Station Area

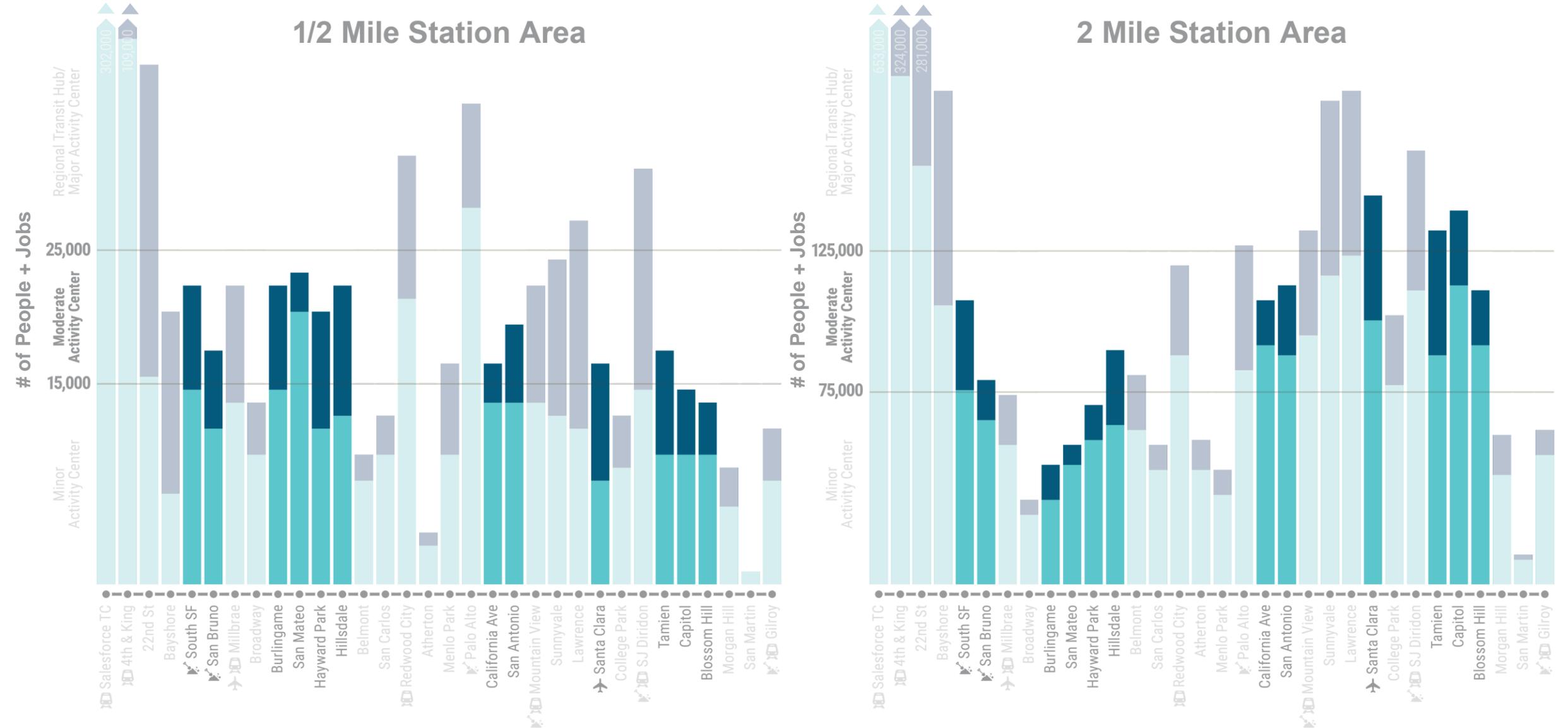
2 Mile Station Area



2040 Stations with Moderate Demand Potential

1/2 Mile Station Area

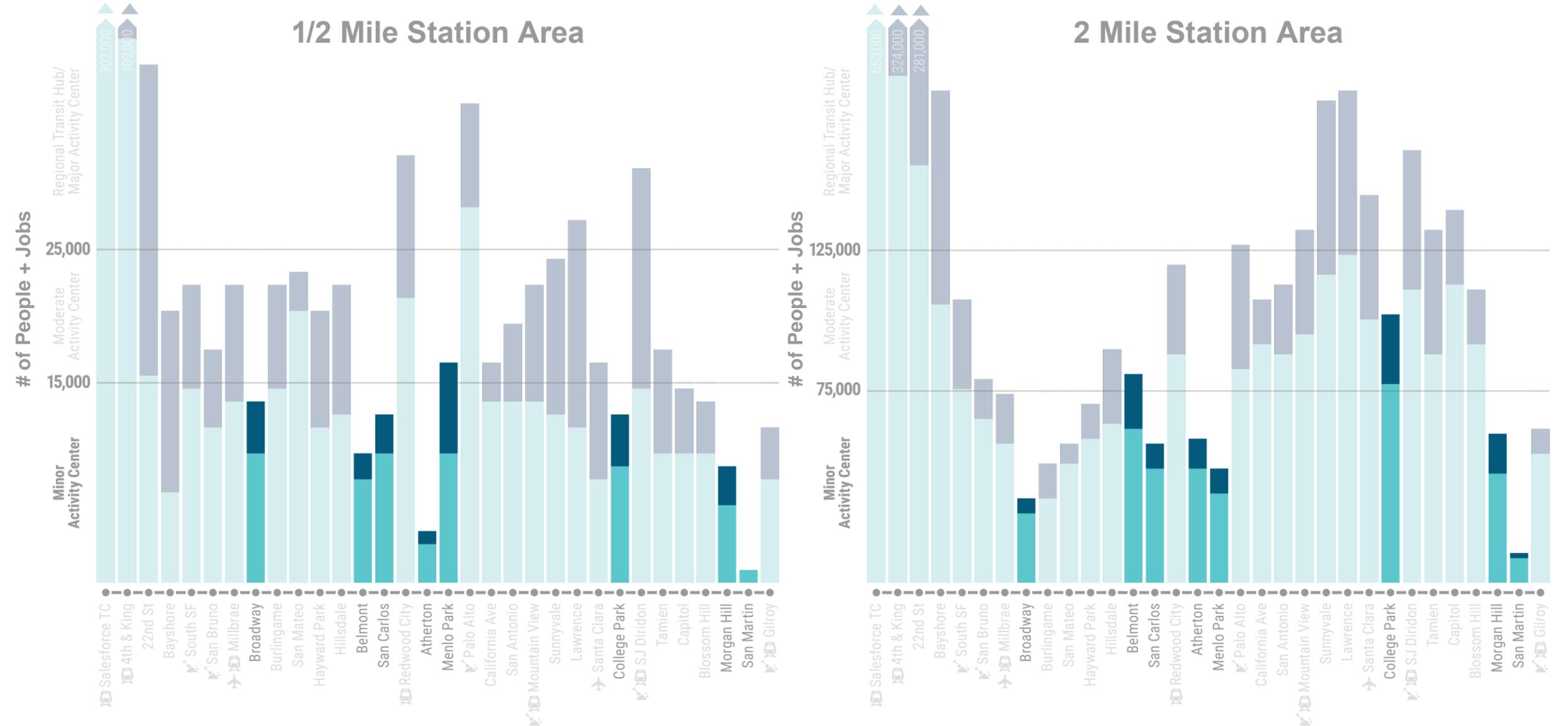
2 Mile Station Area



2040 Stations with Lower Demand Potential

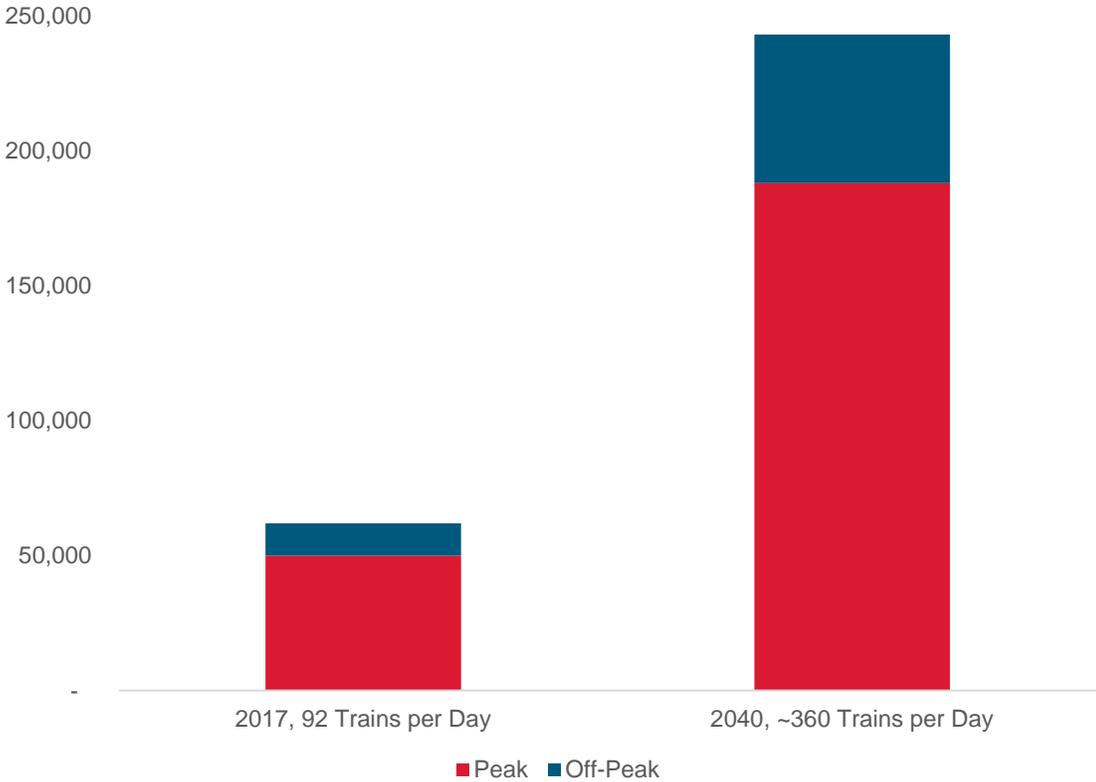
1/2 Mile Station Area

2 Mile Station Area



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 demand for nearly 250,000 daily trips on the system.



Description	2017: 92 Trains/Day	2040: ~360 Trains/Day
Daily	62,000	243,000
Peak	50,000	188,000
Off-Peak	12,000	55,000

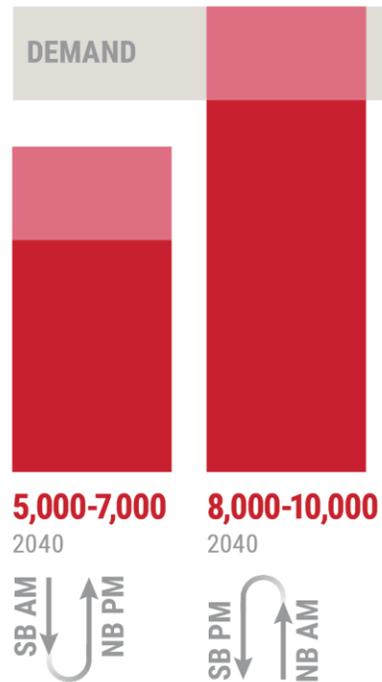


Throughput Demand vs. Capacity

To comfortably serve this level of demand 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

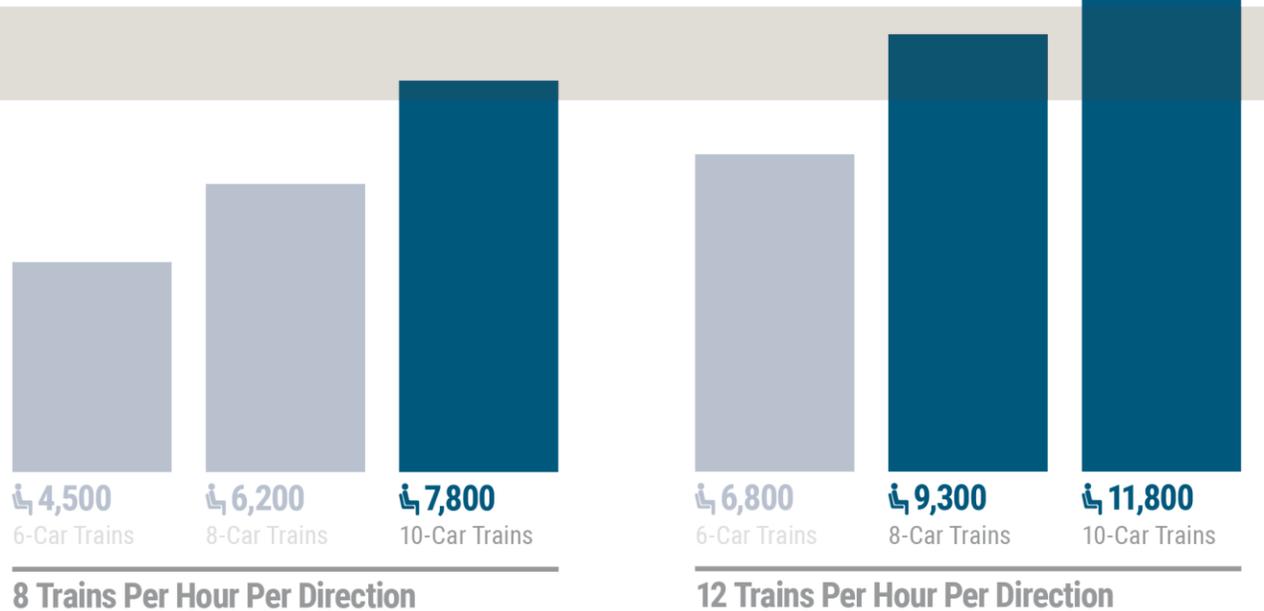
Passenger Demand

Peak-Hour Ridership at Peak Load Point (Millbrae-Burlingame)



Caltrain Seated Capacity

Peak-Hour Trains per Hour per Direction and Associated Seated Passenger Capacity



SHARING SESSION

Does the analysis of 2040 demand potential shown ring true for your community and stations?

Do you have any questions about the analysis and “sizing” of potential long term demand?



Service Concept Development



Service Planning
Goals



2040 Market
Demand



**Service Concept
Development**

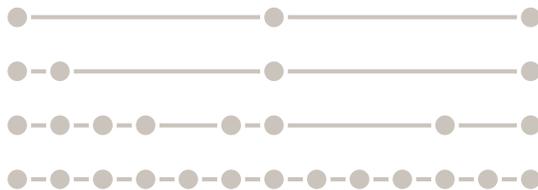


Service Concept
Evaluation



Planning within Constraints – Tradeoffs and Choices Required

The Caltrain corridor is not a blank slate. Service can be improved and expanded but tradeoffs and choices are required. There is no perfect answer.



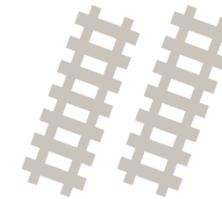
1. Service Differentiation

How can local, regional and high speed services be blended and balanced on the corridor to best serve multiple markets?



2. Peak Service Volume

How much growth in peak train traffic volume can the corridor support and what kinds of growth may be required to meet long term demand?



3. Service Investments

What types of investments into operations, systems and infrastructure will be required to achieve the desired types and volumes of service?

Important Notes and Caveats

The Service concepts shown are intended to illustrate tradeoffs and to help guide the selection of promising options for further study and refinement .

Service at Broadway, Atherton & College Park Stations

- Service to College Park is assumed to continue in the future as it does today (on a limited/ exception basis)
- Restoring weekday service to Broadway and Atherton generally requires redistributing service/stops from adjoining stations
- Restored service to Broadway is shown in the following concepts
- Restored service to Atherton is still under study

At Grade Crossings

- All of the concepts shown relate to a potential “high growth” scenario
- We understand that the volumes of train traffic shown will impact at-grade crossings
- Grade separations and improvements to at-grade crossings will be discussed and accounted for in the plan

Overtakes

- Caltrain understands that expansion of rail infrastructure is an extraordinarily sensitive issue for corridor communities
- The concepts shown deliberately analyze a range of infrastructure levels to illustrate trade-offs relative to service outcomes
- Overtakes are shown both at stations (“standing”) and along longer track segments (“running”)

Service Context

Illustrative Stopping Pattern

(NB AM/SB PM service pattern shown; service varies in SB AM/NB PM pattern)

Caltrain's existing service is complex and highly customized across the peak period, including express, zone, and skip stop service.

The diagram to the right shows a "simplified" representation of typical peak hour northbound, weekday service.

The bars on the far right represent the average number of stops per direction each station receives. Today, northbound and southbound service is not symmetrical meaning that some stations receive significantly more stops per hour in either the north- or southbound direction

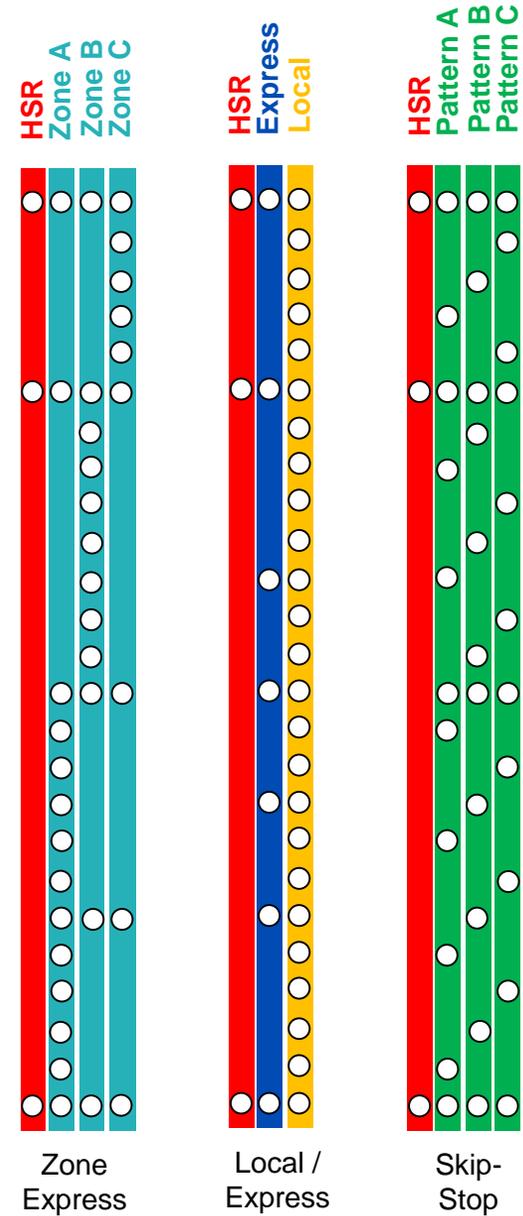
Today, 7 of 25 Caltrain stations receive 4 or more TPHPD during the peak period. On average, stations are served by about 2 TPHPD.



Service Approaches & Peak Hour Concepts

The service planning work began by initially considering three different “approaches” or styles of service that could be used on the corridor in 2040

Illustrative peak hour service concepts were then developed using each of the three different approaches



Zone Express

Description:

Local service within a zone, then express service to major markets

Typical Applications:

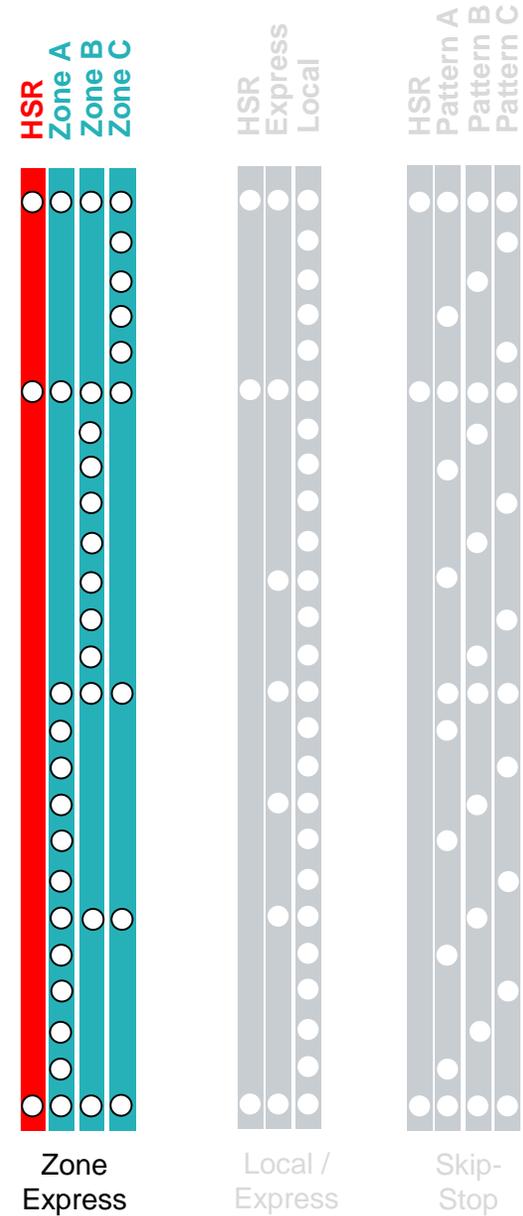
Commuter rail lines with a single major employment center as destination

Pros

- Provides semi-express trips to major terminal from all markets
- Ability to effectively match available seats to market demand by adjusting size of zone

Cons

- Lacks good internal connectivity, transfer required to get from zone to zone
- Requires multiple trains to serve all markets.
- Operational complexity results in more difficult transition to off peak and contingency plans



Zone Express: 12 Trains per Hour

Illustrative Stopping Pattern

(Some variation in service levels and stopping pattern possible)

Features

- Provides 15-minute service to all stations except Broadway/Burlingame with two semi express zone patterns
- Major activity centers receive 8 TPH
- Direct service from all markets to major activity centers, but transfer required between minor stations in different zones

Passing Track Needs

- Requires 2 new miles of 4-track passing track between Hayward Park to Hillsdale and a 4-track station in northern Santa Clara county (shown: California Ave)

Options with Service Structure

- Each pattern can only stop at 2 of the 4 stations north of Millbrae
- Middle-zone train needs to stop at two stations south of California Ave
- Flexible station-based overtake location in northern Santa Clara County

 Zone Express

 Conceptual 4-track segment or station



Zone Express: 16 Trains per Hour

Illustrative Stopping Pattern

(Some variation in service levels and stopping pattern possible)

Features

- Provides 15-minute service to all stations except Broadway/Burlingame with three semi express zone patterns (with major activity centers receiving 12 TPH)
- Direct service from all markets to major activity centers, but transfer required between minor stations in different zones

Passing Track Needs

- 15 miles of new 4-track segment required: south of Bayshore to San Bruno, mid-Peninsula (shown: Hillsdale to San Carlos), northern Santa Clara County (shown: California Avenue to north of Mountain View), and south of Lawrence to Santa Clara

Options with Service Structure

- Flexible location for 3 mile passing track in mid-Peninsula and 5 mile passing track in northern Santa Clara County



Zone Express

Conceptual 4-track segment or station

Local/Express

Description:

Local service with express line between major markets

Typical Applications:

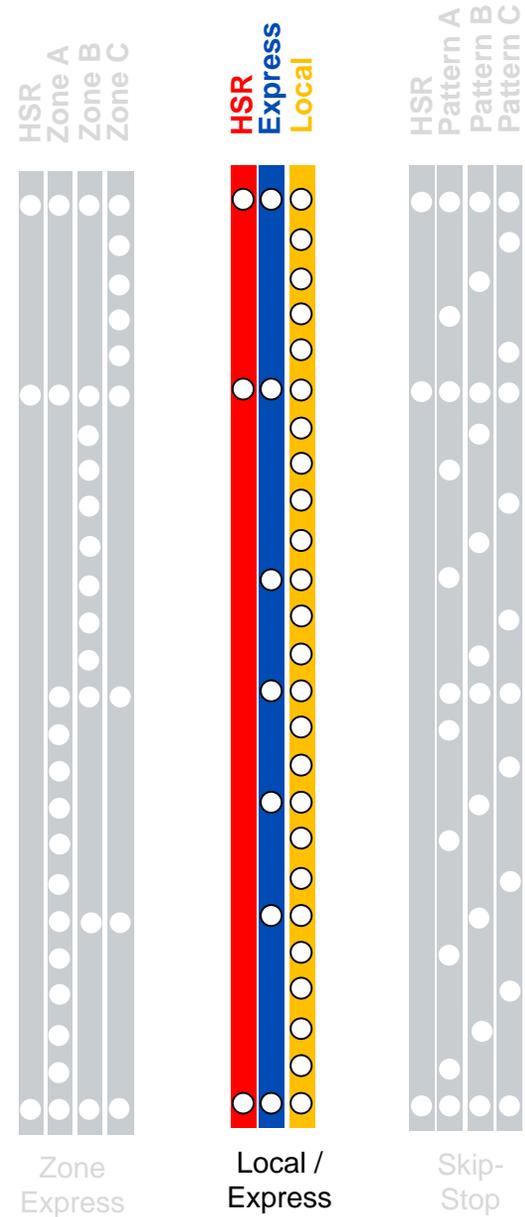
High volume transit lines and polycentric corridors

Pros

- Serves all markets with single train providing simple connectivity between all stations.
- Regional express train provides faster direct trips between major markets
- Consistent and high level of frequencies at all station types
- "Legibility" of service plan for customer
- Easy transition to off peak

Cons

- Differential in run times between local and express makes application challenging on two track corridor
- Inclusion of multiple overtakes could result in extended run times for local service
- Transfers may be required to achieve fast trip times between local markets and terminal stations



Local/Express: 12 Trains

Illustrative Stopping Pattern
(Some variation in service levels and stopping pattern possible)

Features

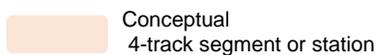
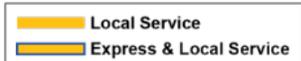
- Regional Express serves all Major Activity Centers at 15-minute headways
- All stations receive local service at 15-minute headways except Broadway and Burlingame
- Timed local-express transfer at Redwood City

Passing Track Needs

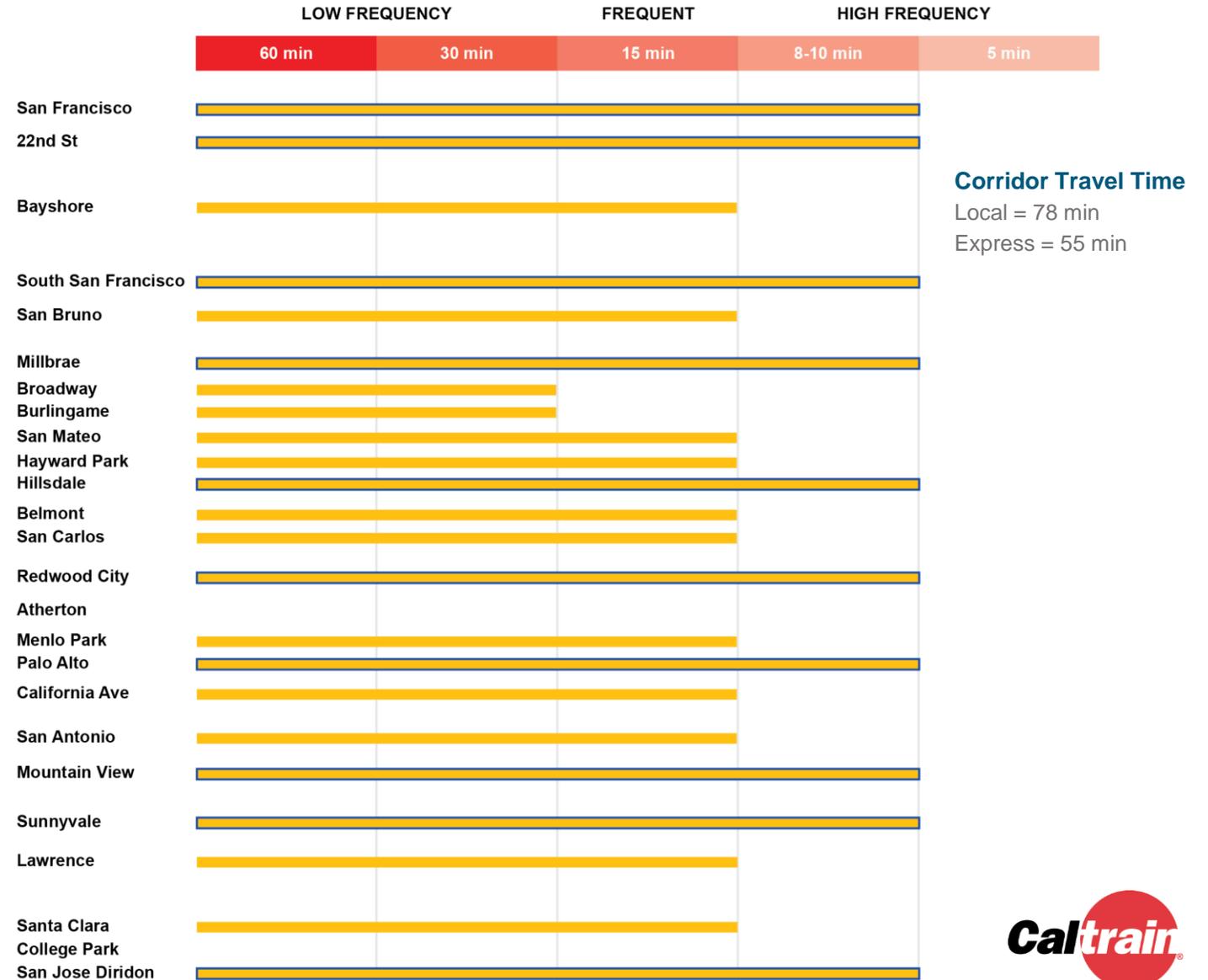
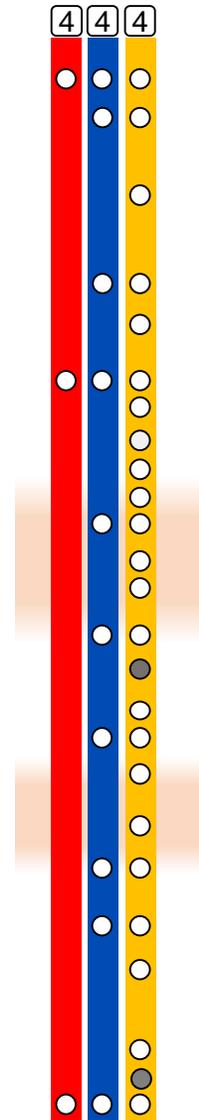
- 10 miles of new 4-track passing tracks: Hayward Park to Redwood City and northern Santa Clara County (shown: California Avenue to north of Mountain View)

Options with Service Structure

- One stop on Express Train can be flexible between Millbrae and Redwood City
- One or two stops on express south of Palo Alto can be flexible
- Flexible 5 mile passing track location in northern Santa Clara County



All service concepts assumed to be bi-directional and symmetrical. Southbound only shown for clarity



Local/Express: 16 Trains

Illustrative Stopping Pattern

(Some variation in service levels and stopping pattern possible)

Features

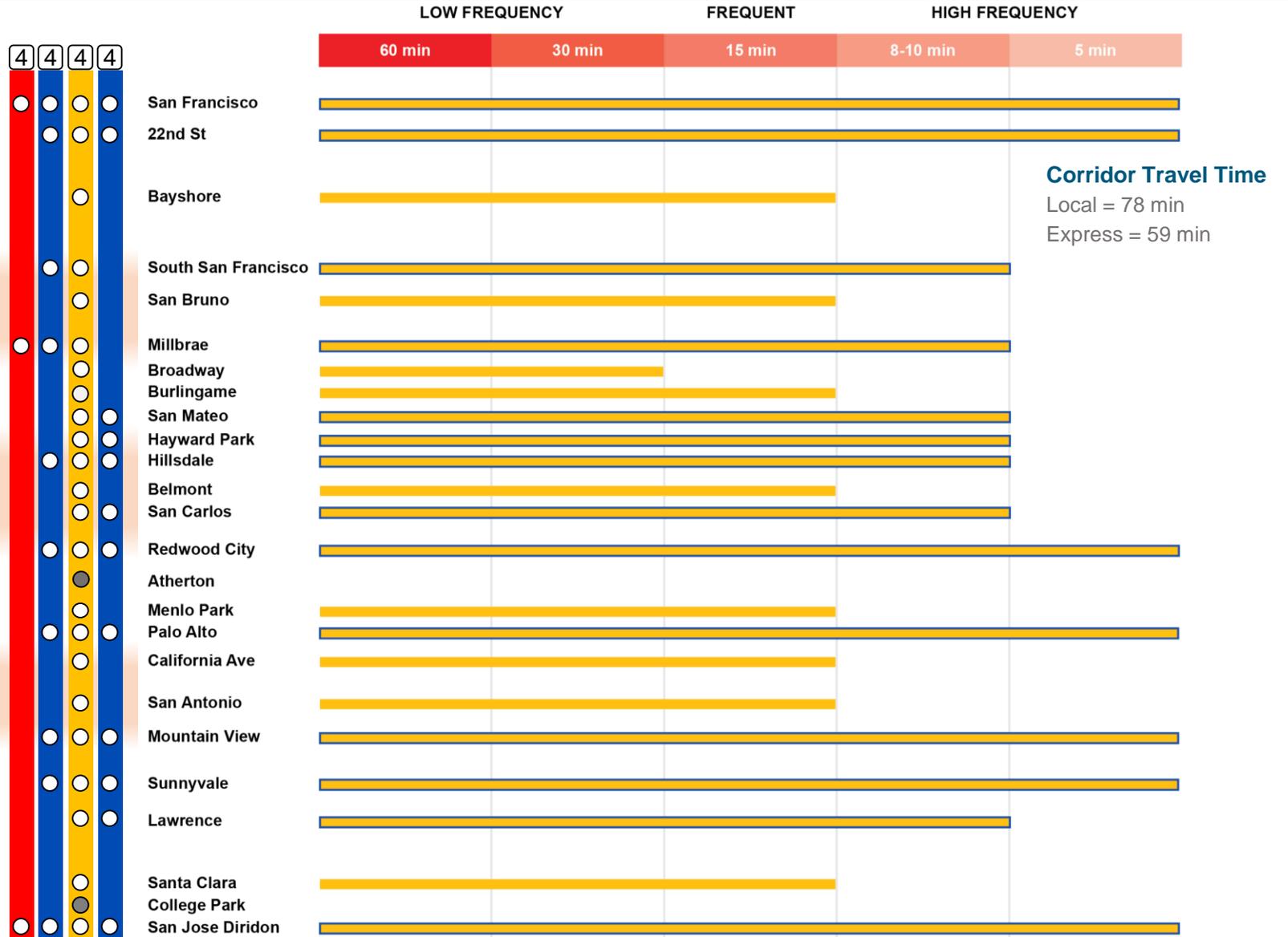
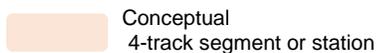
- Complete local stop service
- Two express lines serving major markets
- All stations receive at least 4 TPH, with many receiving 8 or 12 TPH

Passing Track Needs

- 15 miles of new 4 track passing tracks: South San Francisco to Millbrae, Hayward Park to Redwood City, and northern Santa Clara County (shown: California Avenue to north of Mountain View)

Options with Service Structure

- Express B pattern must run non-stop from 22nd St to San Mateo, but has some flexibility in number and location of stops along mid-Peninsula
- Flexible 5 mile passing track location in northern Santa Clara County
- Passing tracks between Lawrence and San Jose may enhance reliability and save 1-2 min of travel time for HSR and Caltrain (for passengers traveling south of Diridon)



Corridor Travel Time
 Local = 78 min
 Express = 59 min

Local/Express: 12 Trains- Reduced Passing Tracks

Illustrative Stopping Pattern

(Some variation in service levels and stopping pattern possible)

Features

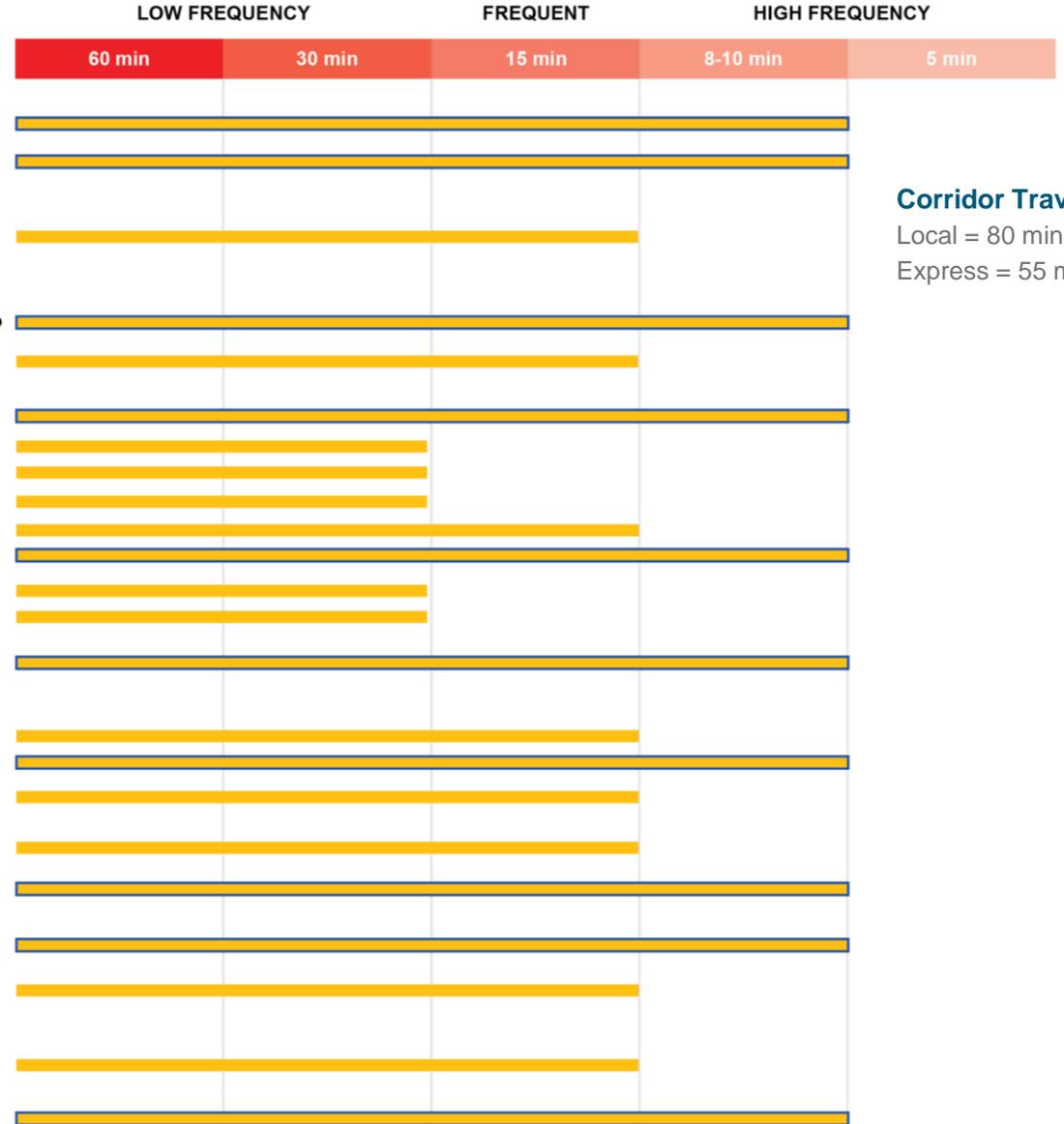
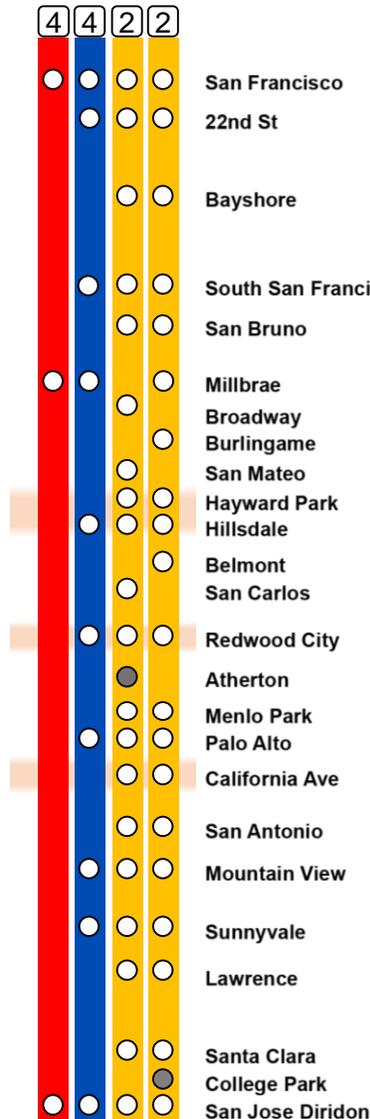
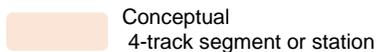
- Regional Express serves all Major Activity Centers at 15-minute headways
- Most stations served by local service at 15 minute headways
- Closely-spaced mid-Peninsula stations served at 30 minute headways (Broadway, Burlingame, San Mateo, Belmont, and San Carlos)
- Timed local-express transfer at Redwood City

Passing Track Needs

- 3 miles of new 4-track passing tracks: Hayward Park to Hillsdale, at Redwood City, and a 4-track station in northern Santa Clara county (shown: California Ave)

Options with Service Structure

- Each local pattern can only stop once Millbrae to Hillsdale
- Each local pattern can only stop once Hillsdale to Redwood City
- Flexible station overtake location in northern Santa Clara County



Corridor Travel Time
Local = 80 min
Express = 55 min

Local/Express: 16 Trains- Reduced Passing Tracks

Illustrative Stopping Pattern

(Some variation in service levels and stopping pattern possible)

Features

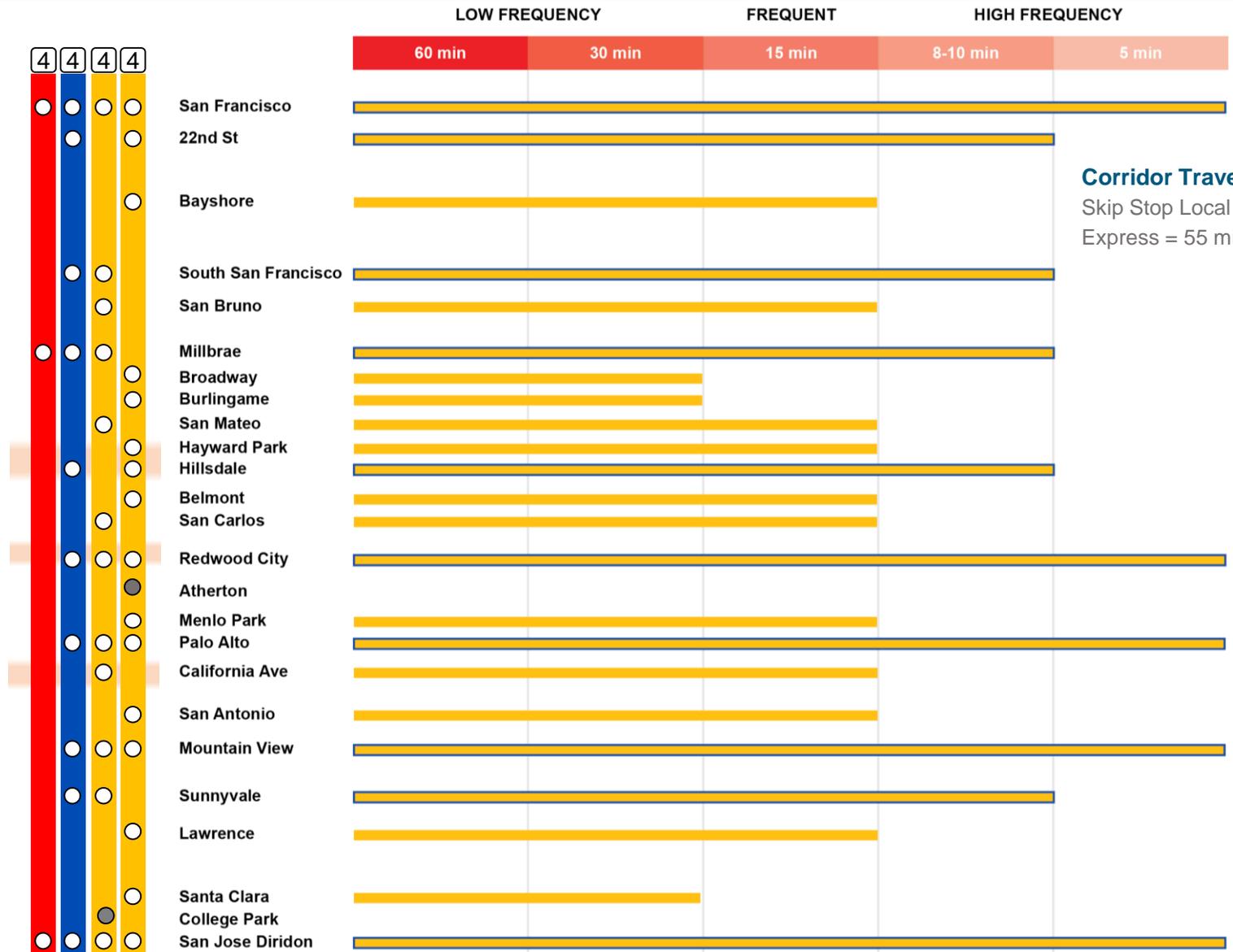
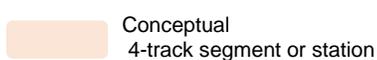
- Local service becomes skip-stop service
- All stations receive 15 minute headways with major stations receiving 8 or 12 trans per hour
- Many station pairs require transfer at regional hubs
- ~50% of station OD pairs between 22nd Street and San Carlos are not served at all

Passing Track Needs

- 3 miles of new 4-track passing tracks: Hayward Park to Hillsdale, at Redwood City, and at a 4-track station in northern Santa Clara county (shown: California Ave)

Options with Service Structure

- Generally need each pattern to stop at every other station
- Pattern overtaken by express must stop at Hayward Park & Hillsdale; other pattern cannot stop at these stations
- Flexible station overtake location in northern Santa Clara County



Corridor Travel Time
 Skip Stop Local = 67 min
 Express = 55 min

Skip Stop

Description:

Multiple lines with limited stopping patterns

Typical Applications:

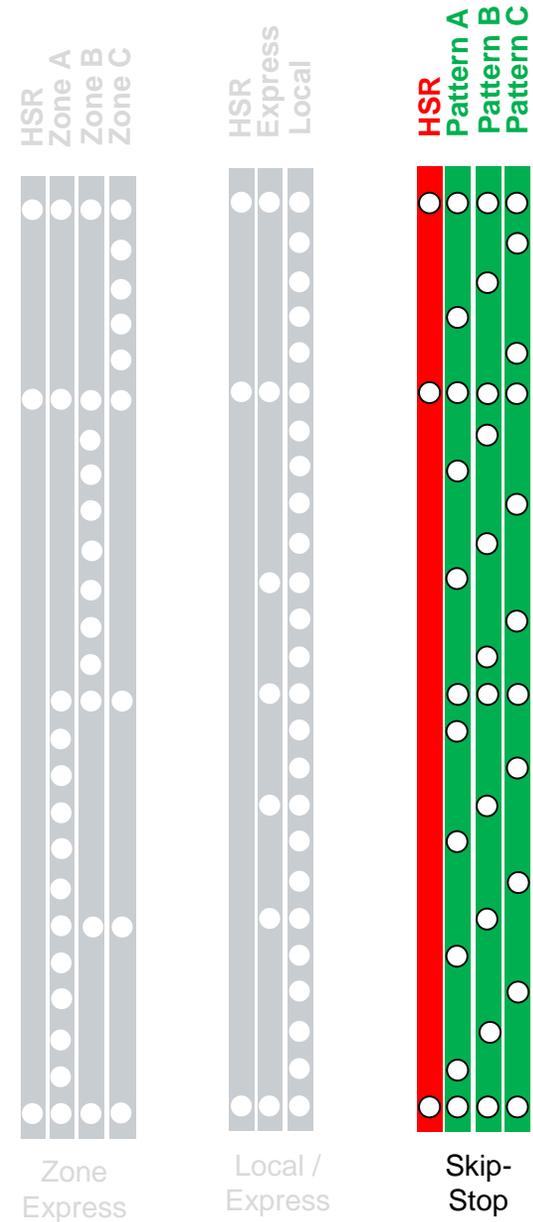
High-volume transit lines with constrained infrastructure

Pros

- Faster trip times for local service vs all stop trains.
- Fast trip times and high frequencies between major stations
- Ability to deliver more total seats (double the trains, same station headways)

Cons

- Many local station pairs not served with direct service, transfer required. Some minor pairs not served at all
- Service plan may be confusing for non-regular users of the system, and in case of service disruption
- Requires multiple trains to serve all markets.
- Operational complexity results in more difficult transition to off peak and contingency plans



Skip Stop: 16 Trains per Hour

Illustrative Stopping Pattern

(Some variation in service levels and stopping pattern possible)

Features

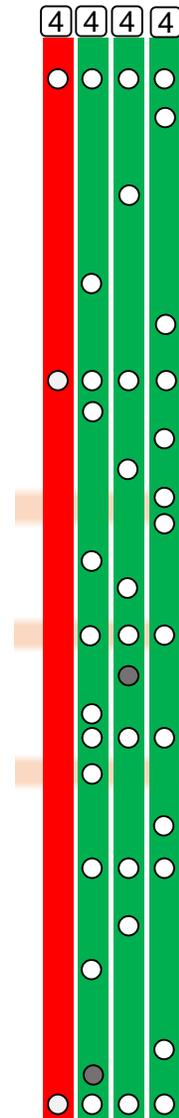
- Provides 15-minute service to all stations with three skip stop patterns
- Major activity centers receive 8 TPH
- Direct service from all markets to major activity centers, but transfer required between minor stations in different zones

Passing Track Needs

- 3 miles of passing track between Hayward Park and Hillsdale, at Redwood City, and at a station in northern Santa Clara county (shown: California Ave)

Options with Service Structure

- Some flexibility in stopping pattern along each line; however, some origin-destination pairs of nearby stations cannot be served



- San Francisco
- 22nd St
- Bayshore
- South San Francisco
- San Bruno
- Millbrae
- Broadway
- Burlingame
- San Mateo
- Hayward Park
- Hillsdale
- Belmont
- San Carlos
- Redwood City
- Atherton
- Menlo Park
- Palo Alto
- California Ave
- San Antonio
- Mountain View
- Sunnyvale
- Lawrence
- Santa Clara
- College Park
- San Jose Diridon

LOW FREQUENCY

FREQUENT

HIGH FREQUENCY



Corridor Travel Time
Skip Stop = 63 min

— Skip Stop Service

— Conceptual 4-track segment or station

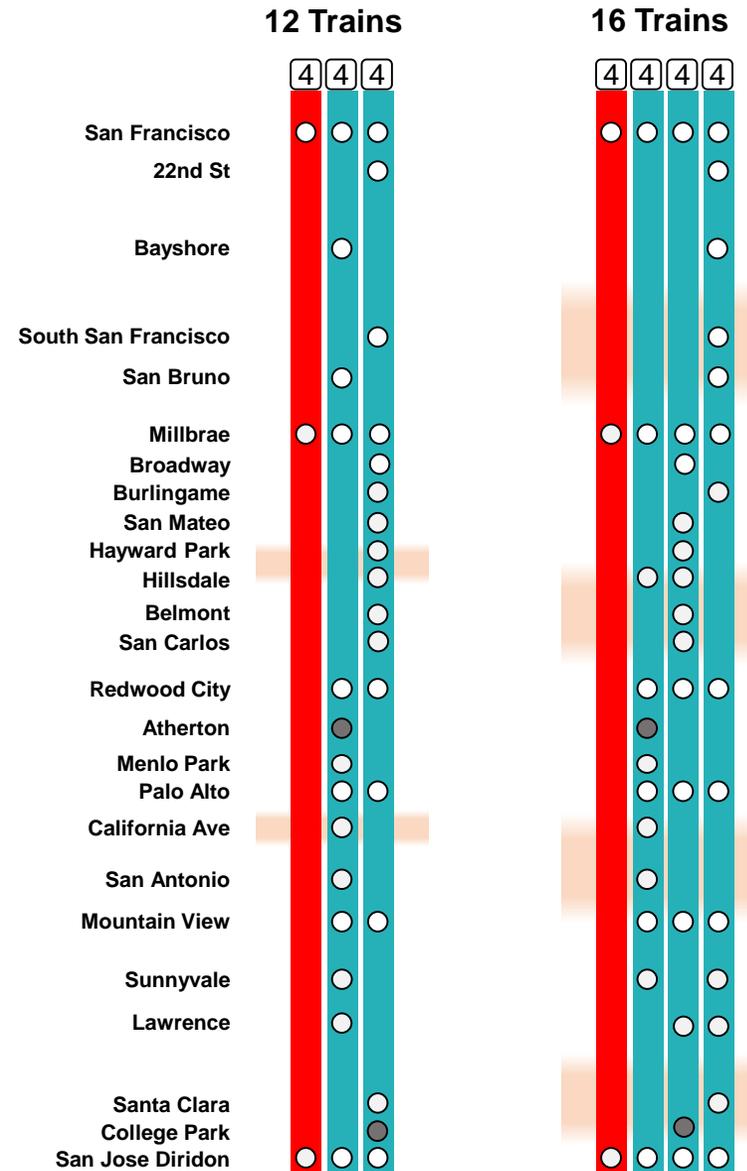


Service Concept Evaluation



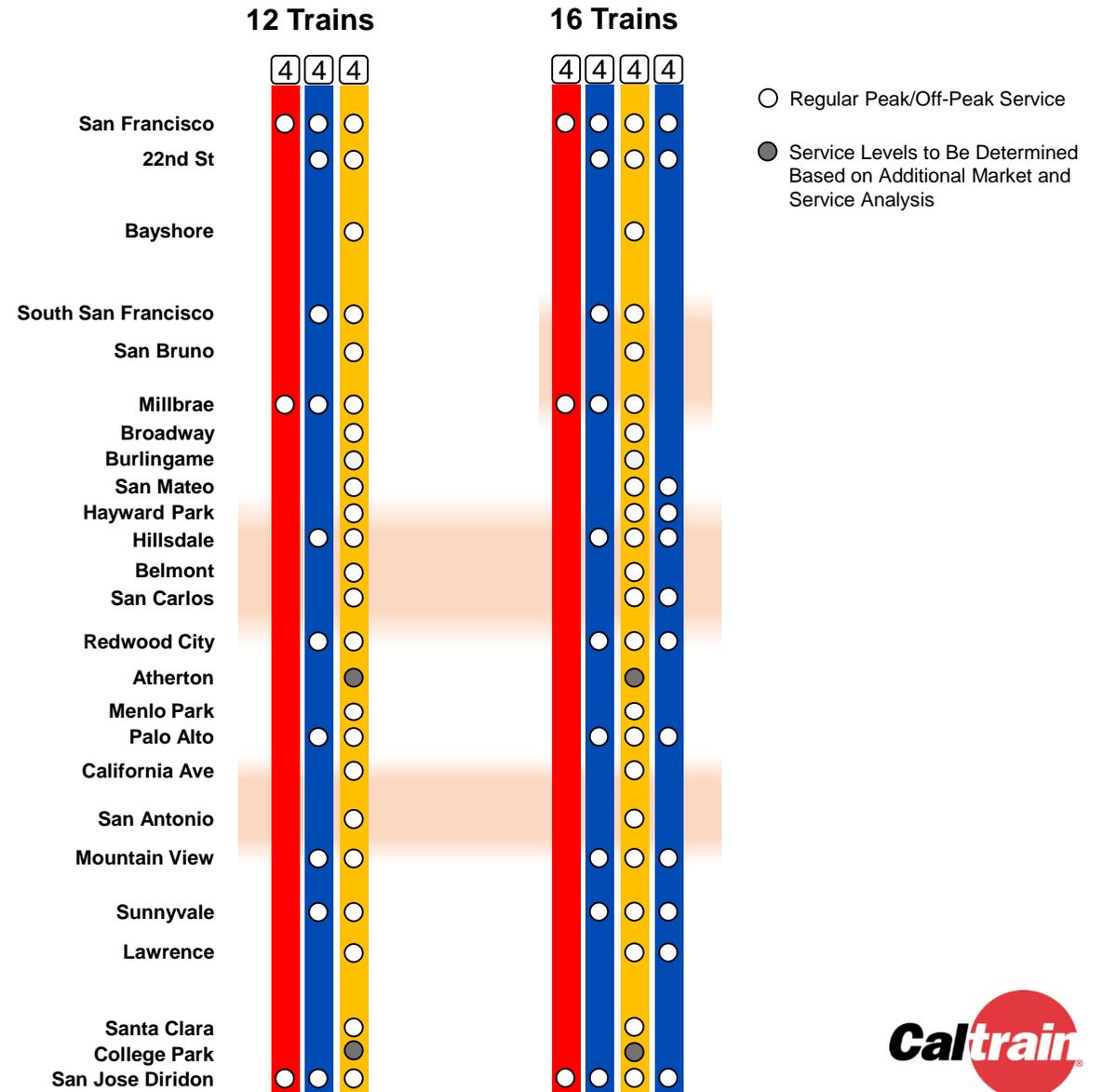
Zone Express Initial Evaluation

- Provides good coverage with all stations receiving at least 4 trains per hour with direct service to all major activity centers
- Transfers required to travel between moderate and minor activity centers in different zones – with good connection at Redwood City
- All stations get semi-express service to major activity centers, but no dedicated express train between major activity centers (~70 minute travel time)
- Some challenges with internal connectivity and legibility
- Substantial passing tracks needed to achieve 16 trains per hour



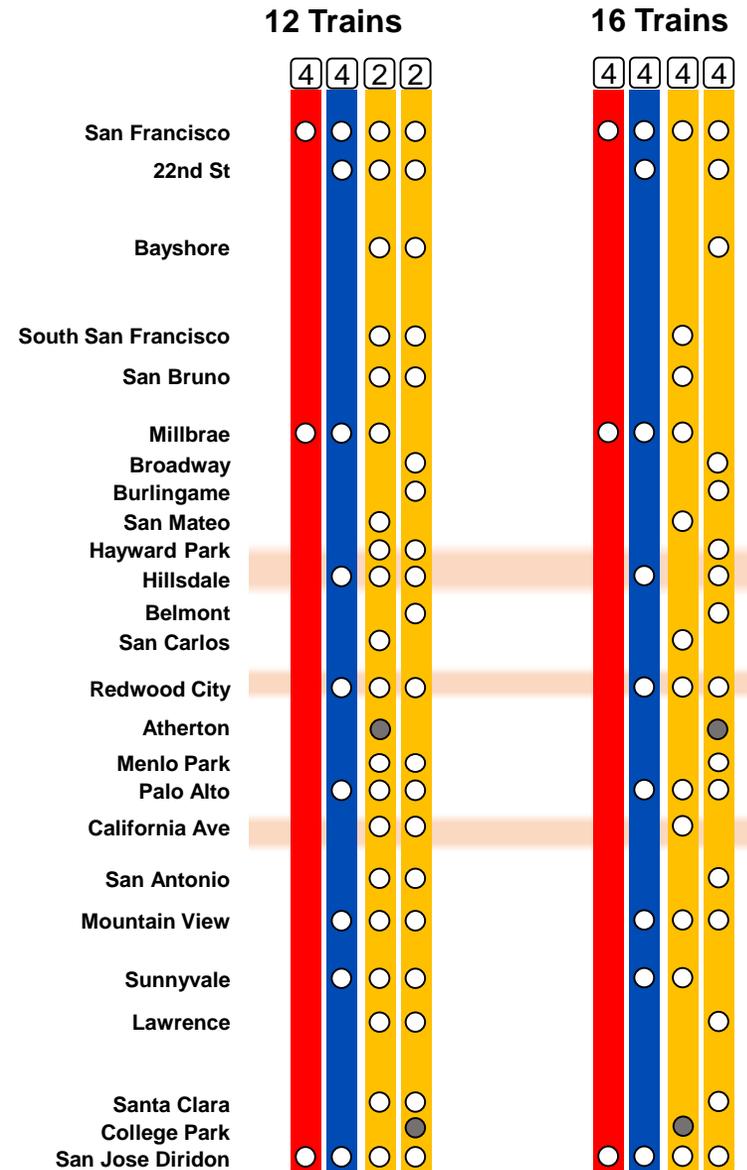
Local/Express Initial Evaluation

- Provides dedicated express train service for major activity centers achieving best trip time for the most passengers
- All local stations except Broadway receive regular 15-minute local service; most stations receive express service under 16 train operation
- Mid-Peninsula hub planned at Redwood City allows for seamless connectivity (cross platform transfer) between local and express
- Significant passing track infrastructure required



Local/Express Initial Evaluation Reduced Passing Tracks

- Provides dedicated express train service for major activity centers achieving best trip time for the most passengers
- Most local stations receive regular 15-minute local service, however, some local stations receive only 30-minute service
- Mid-Peninsula hub planned at Redwood City allows for seamless connectivity (cross platform transfer) between local and express
- 16 train skip stop pattern presents challenges with internal connectivity and legibility: half of OD pairs between 22nd Street and San Carlos are not served at all
- Passing Track length minimized. Flexibility regarding location of station-overtake in north Santa Clara County

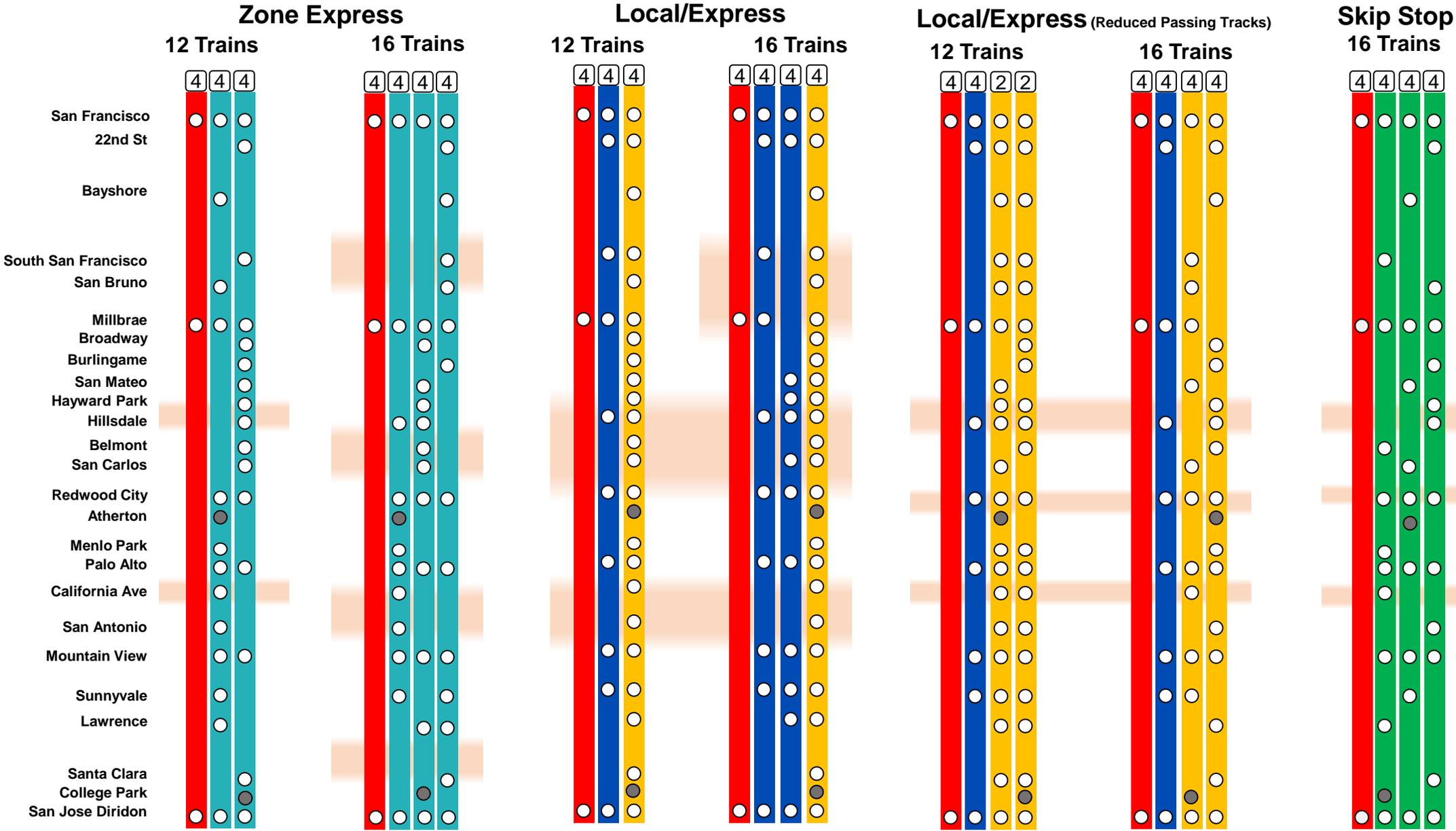


Skip Stop Initial Evaluation

- Distributes relatively fast and frequent service across most stations
- Relatively fewer miles of passing tracks needed to achieve 16 trains per hour
- Does not provide differentiated products – end to end travel times are ~70 minutes
- Significant challenges for internal connectivity and legibility – service is difficult to understand and many station origin-destination pairs are not served
- Few comparable examples in operation



Service Comparison



Grade Crossing Impacts and Grade Separation Approaches are Part of the Business Plan:

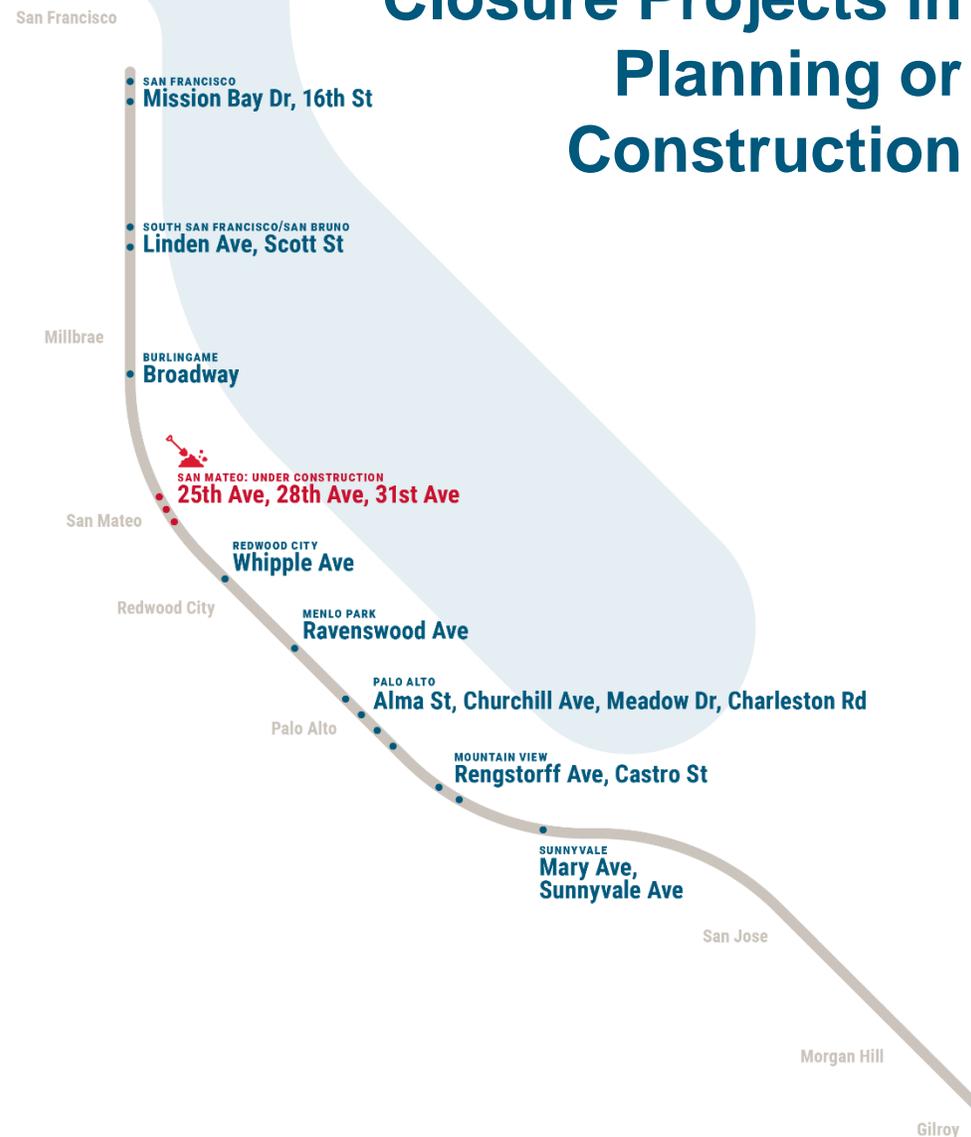
The Plan Will:

- Document how the rail/ community interface could change as the railroad and its surrounding communities grow
- Examine approaches used by national and international peer rail corridors to address at-grade crossings and grade separations
- Include a range of cost estimates for grade separations and treatments in the Business Case for both the Planned and Programed and Higher Growth Scenarios

Outcomes

- Work with the communities to identify next steps for how the corridor, not just individual projects, could be better managed to achieve both community and railroad goals. This includes considering both the appetite and need for a corridor-wide approach to address at-grade crossings.

Grade Separation or Closure Projects in Planning or Construction



SHARING SESSION

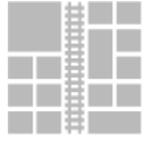
Do you particularly like any of the service approaches and concepts shown? Do any of them concern you? Why?

What kinds of analysis or data would help you further understand and evaluate different service concepts?

Next Steps

Process

- Refine and explore service concepts further
- Evaluate and select service concept to represent higher growth scenario within Business Plan
- Terminal analysis (San Francisco and San Jose)
- South San Jose and Gilroy Service
- All day service plans and weekend service
- Continue grade separation / grade crossing discussion through Community Interface Assessment



Appendix:

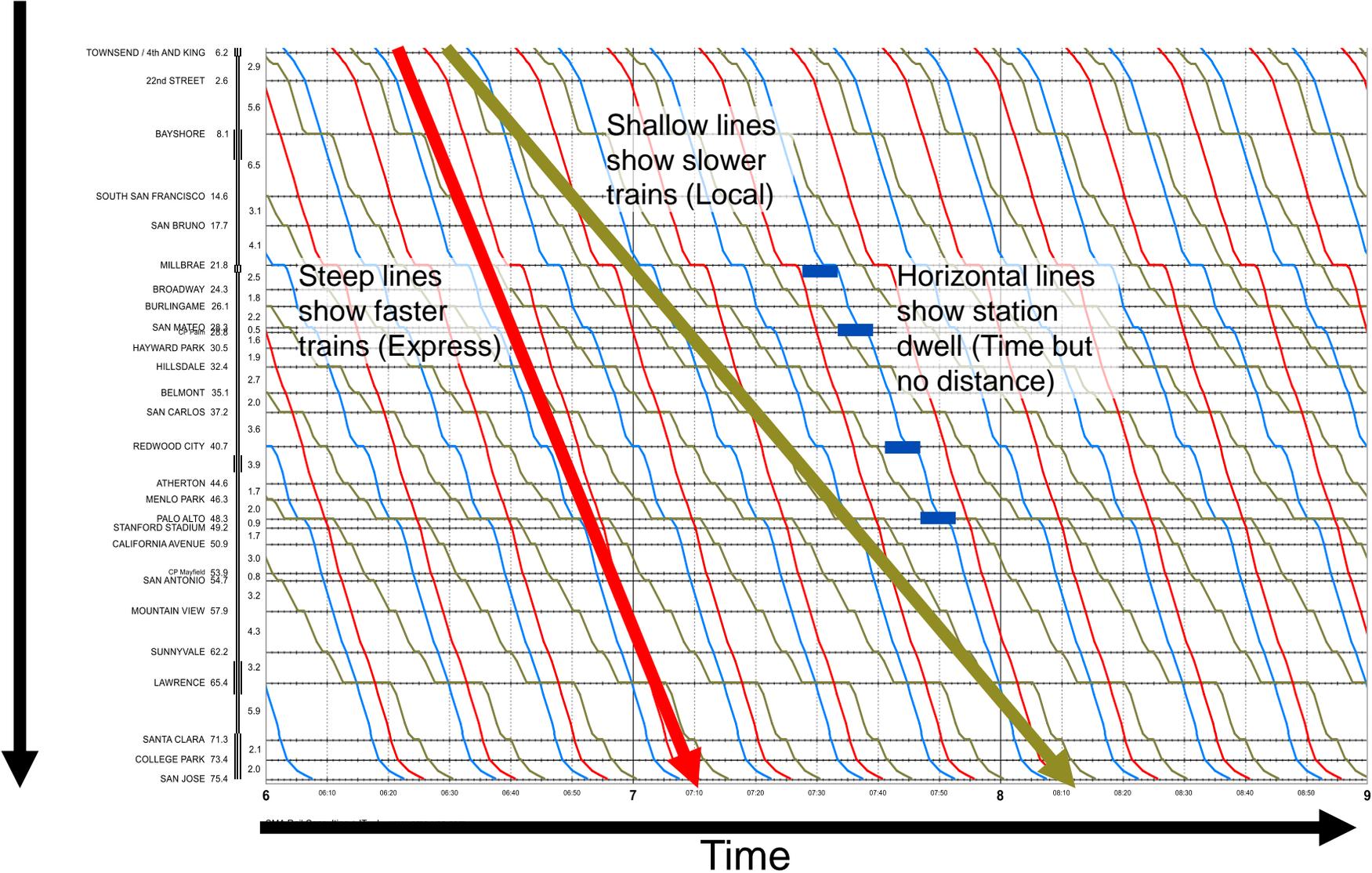
Land Use Details & Service Concept Stringlines

Land Use Planning Along Caltrain Corridor

Station	Major Projects Included in Forecasts (Approved or consistent with Plan Bay Area projections)	Major Projects Noted but Not Quantified in Forecasts (Not yet approved and potentially inconsistent with Plan Bay Area)
4th & King	Central SoMa Plan, Mission Bay & Mission Rock	The Hub Plan
22nd St	Pier 70, Potrero Power Plant, India Basin	
Bayshore	Hunters Point, Candlestick Point, Schlage Lock, Sierra Point buildout, Brisbane Baylands	
South SF	6 MSF of approved East of 101 developments and the Downtown Station Area Specific Plan	Other employment projects in pipeline such as Genentech Master Plan
San Bruno	Transit Corridors Plan	Bayhill Specific Plan (Youtube)
Millbrae	Station Plan	
Burlingame	Burlingame Point (Facebook)	
San Mateo	Downtown Area Plan	General Plan/Downtown Plan Update
Hayward Park	Nearby TOD projects under construction	
Hillsdale	Bay Meadows, Hillsdale Station Plan	
Belmont	General Plan Update, Belmont Village Specific Plan	
San Carlos	Meridian 25, Downtown TOD projects	
Redwood City	Downtown Precise Plan, Stanford Redwood City Campus	Facebook campus expansion in Menlo Park (Caltrain connection via Dumbarton Rail)
Menlo Park	El Camino Real Downtown Specific Plan	
Palo Alto	Stanford Hospital Expansion	Stanford General Use Permit
California Ave	Stanford Research Park redevelopment	
San Antonio	San Antonio Precise Plan	
Mountain View	El Camino Real Precise Plan, North Bayshore Precise Plan, Moffett Field redevelopment	East Whistman Specific Plan, additional Moffett Field redevelopment
Lawrence	Lawrence Station Plan, City Place	
San Jose Diridon		Google Campus, Downtown Strategy 2040
Morgan Hill	Downtown Specific Plan	
Gilroy		Station Plan

How to Read a Stringline

Distance

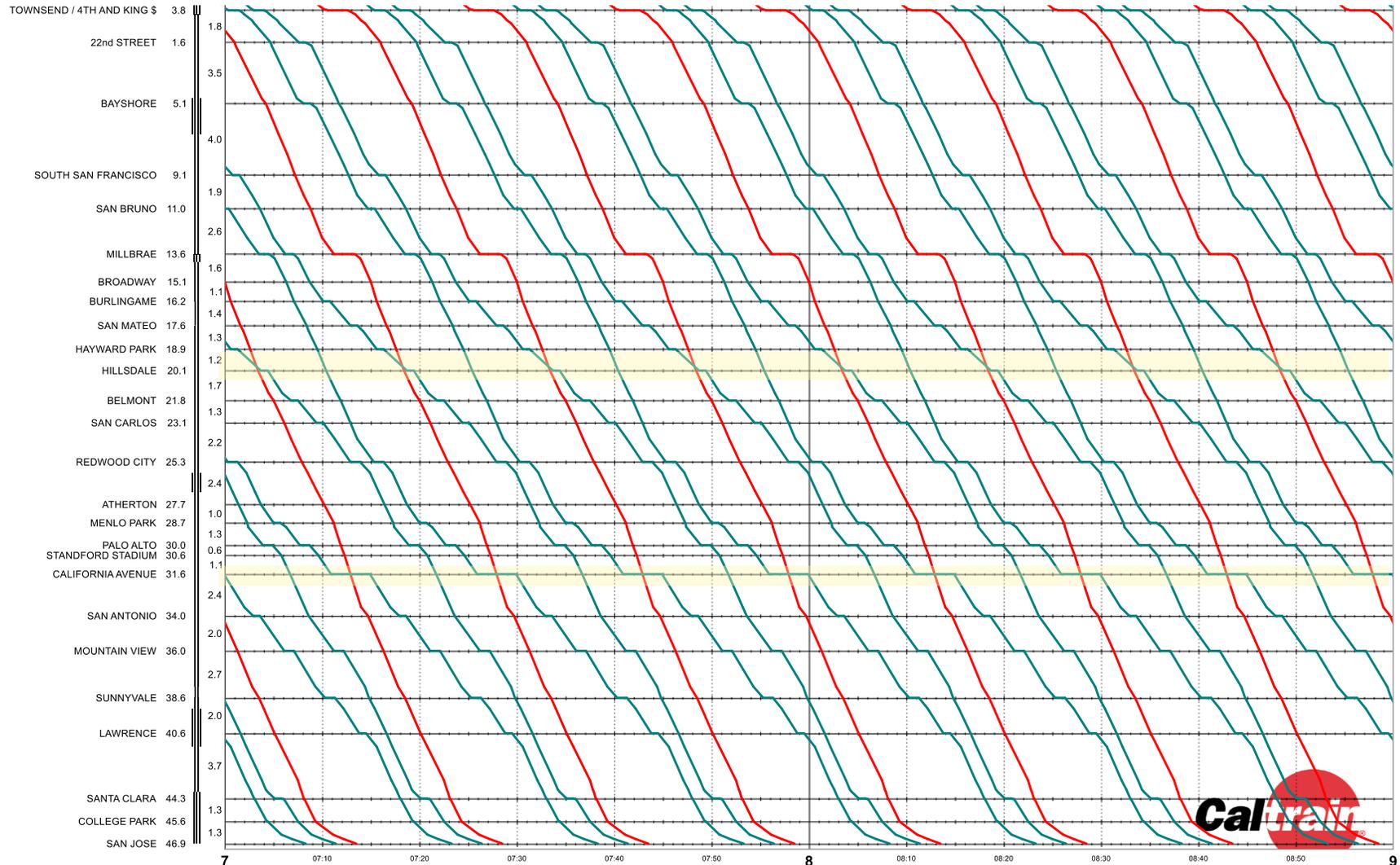
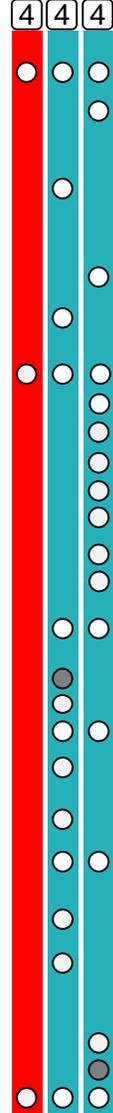


Time

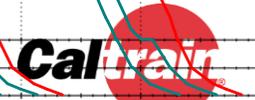


Zone Express: 12 Trains per hour

Frequency per Hour

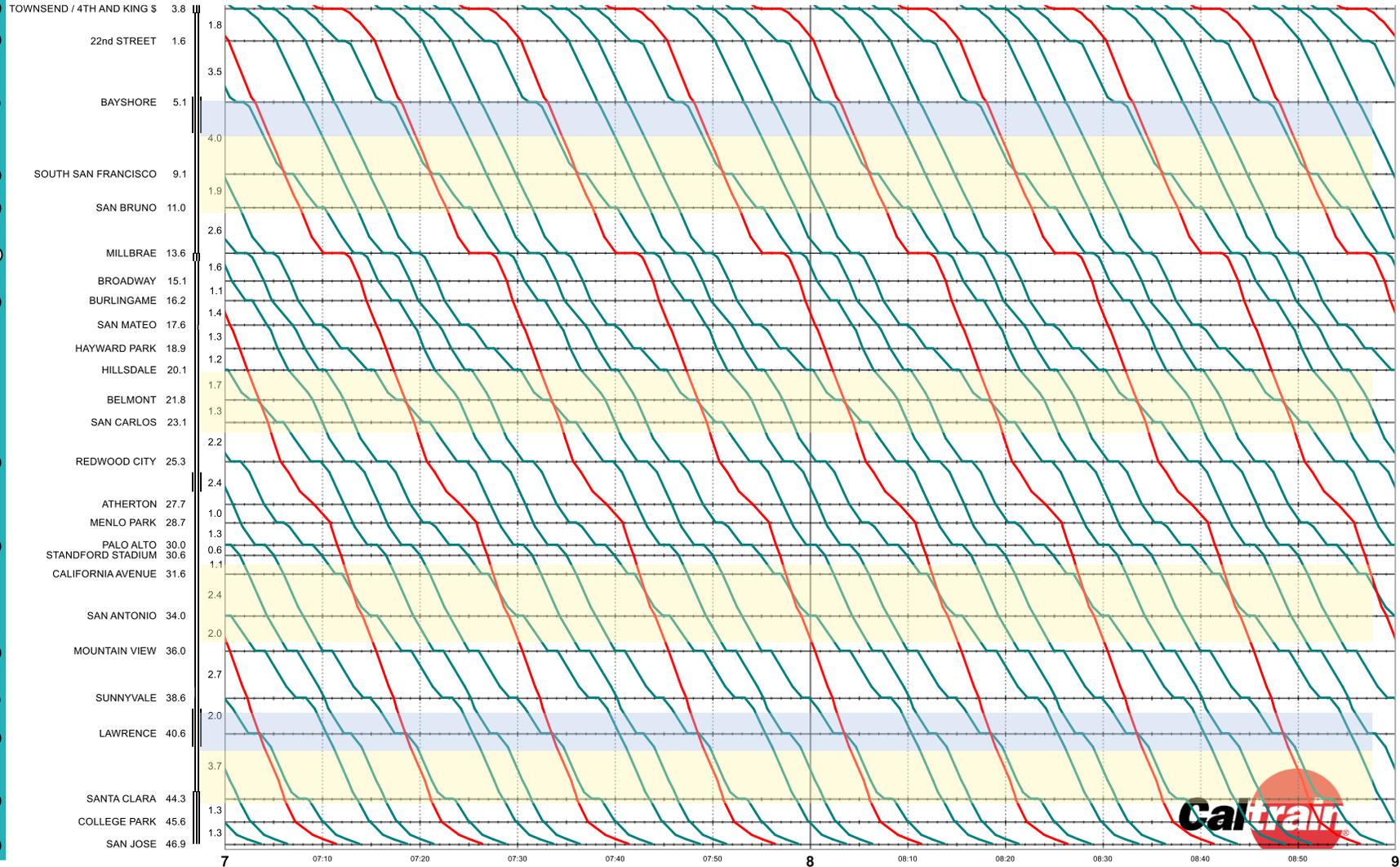
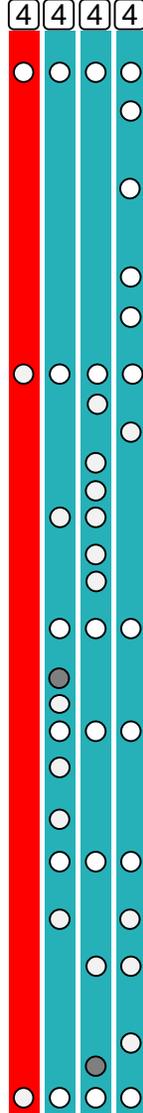


Stringlines shown in terminal areas of San Francisco and San Jose are placeholder values only and have not been conformed to terminal constraints – service levels and operations within terminal areas subject to further analysis.



Zone Express: 16 Trains per hour

Frequency per Hour

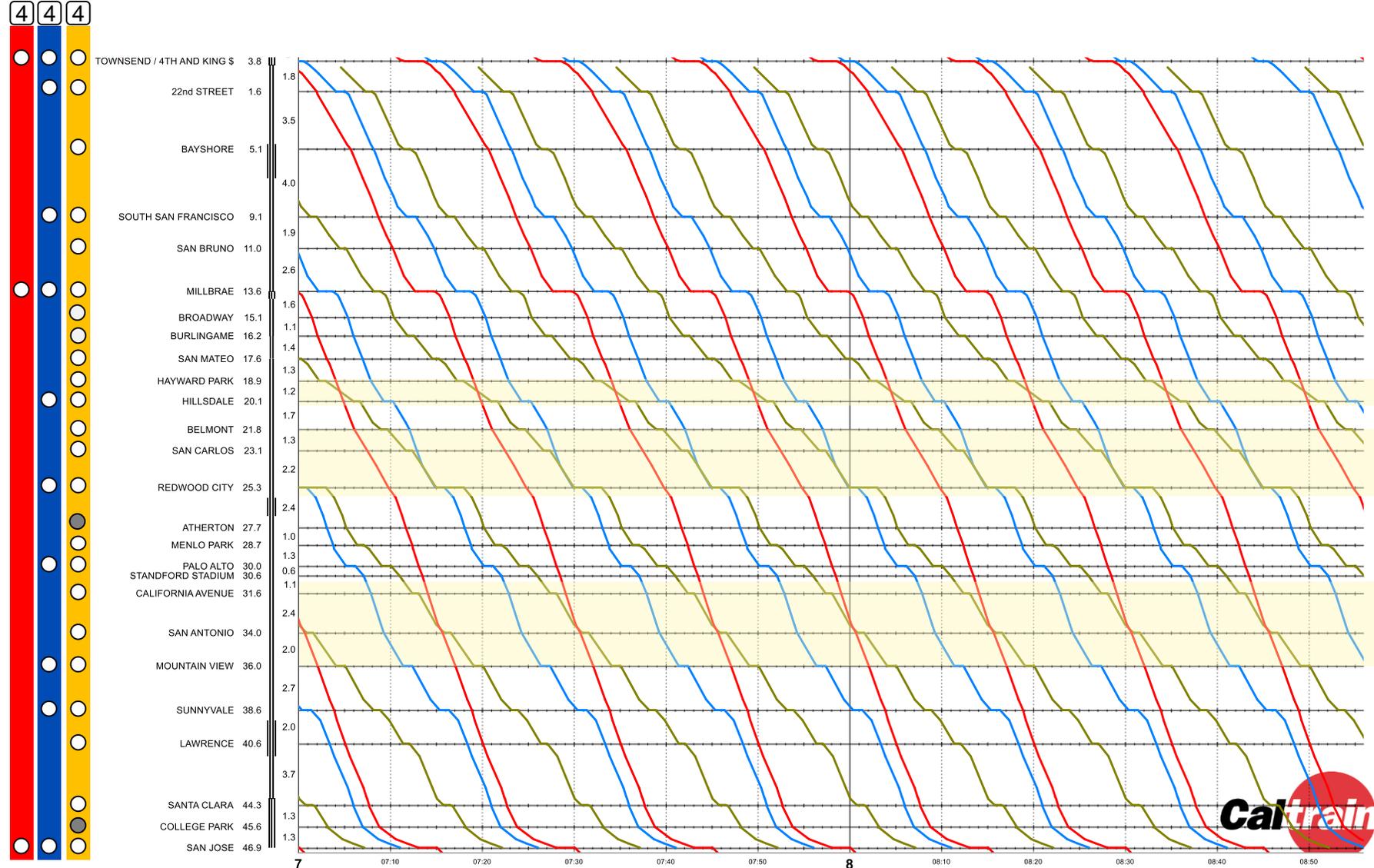


Stringlines shown in terminal areas of San Francisco and San Jose are placeholder values only and have not been conformed to terminal constraints – service levels and operations within terminal areas subject to further analysis.



Local/Express: 12 Trains

Frequency per Hour



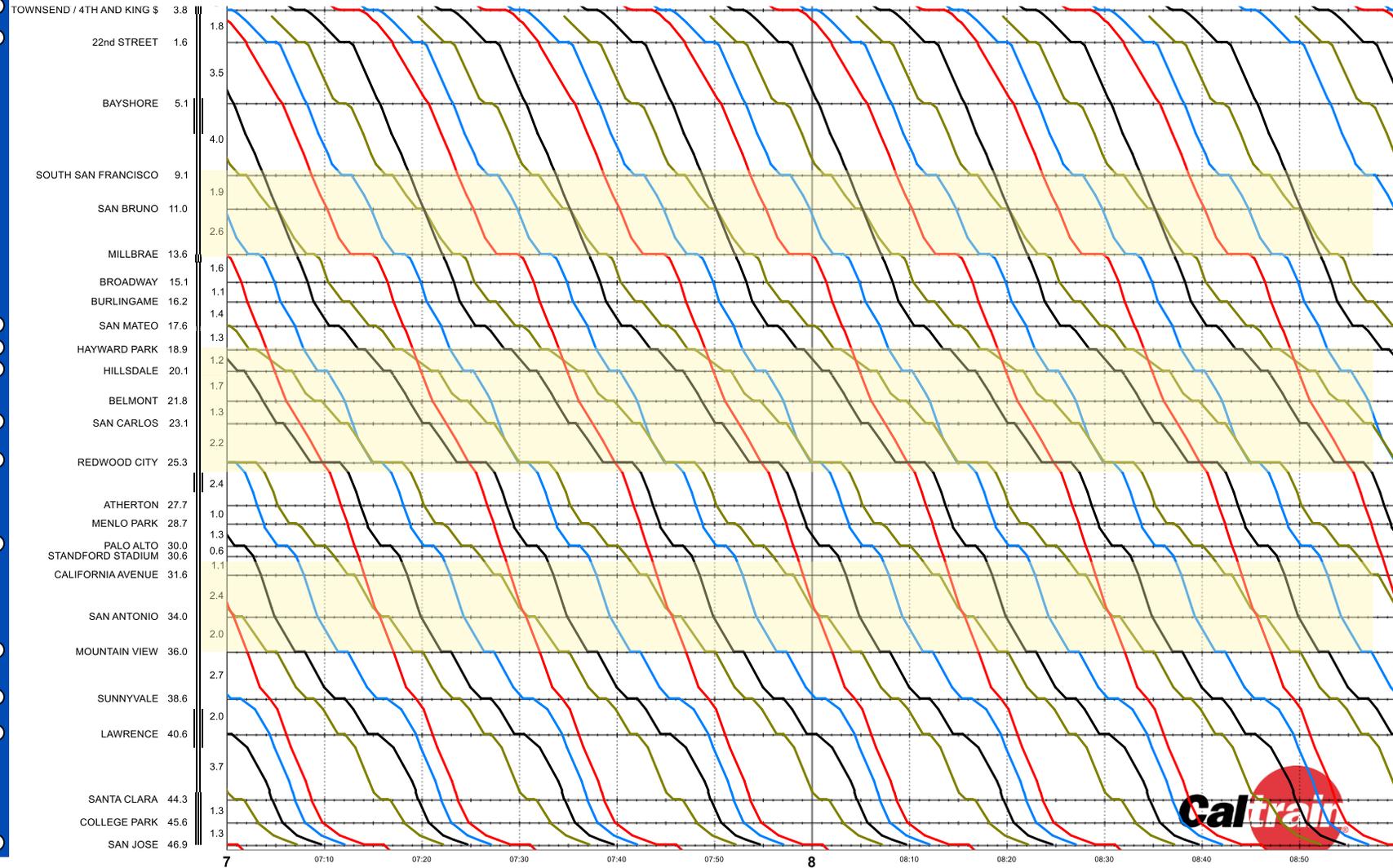
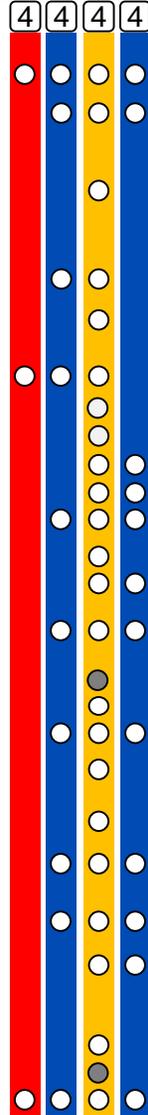
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Local/Express: 16 Trains

Local + Dual
Express

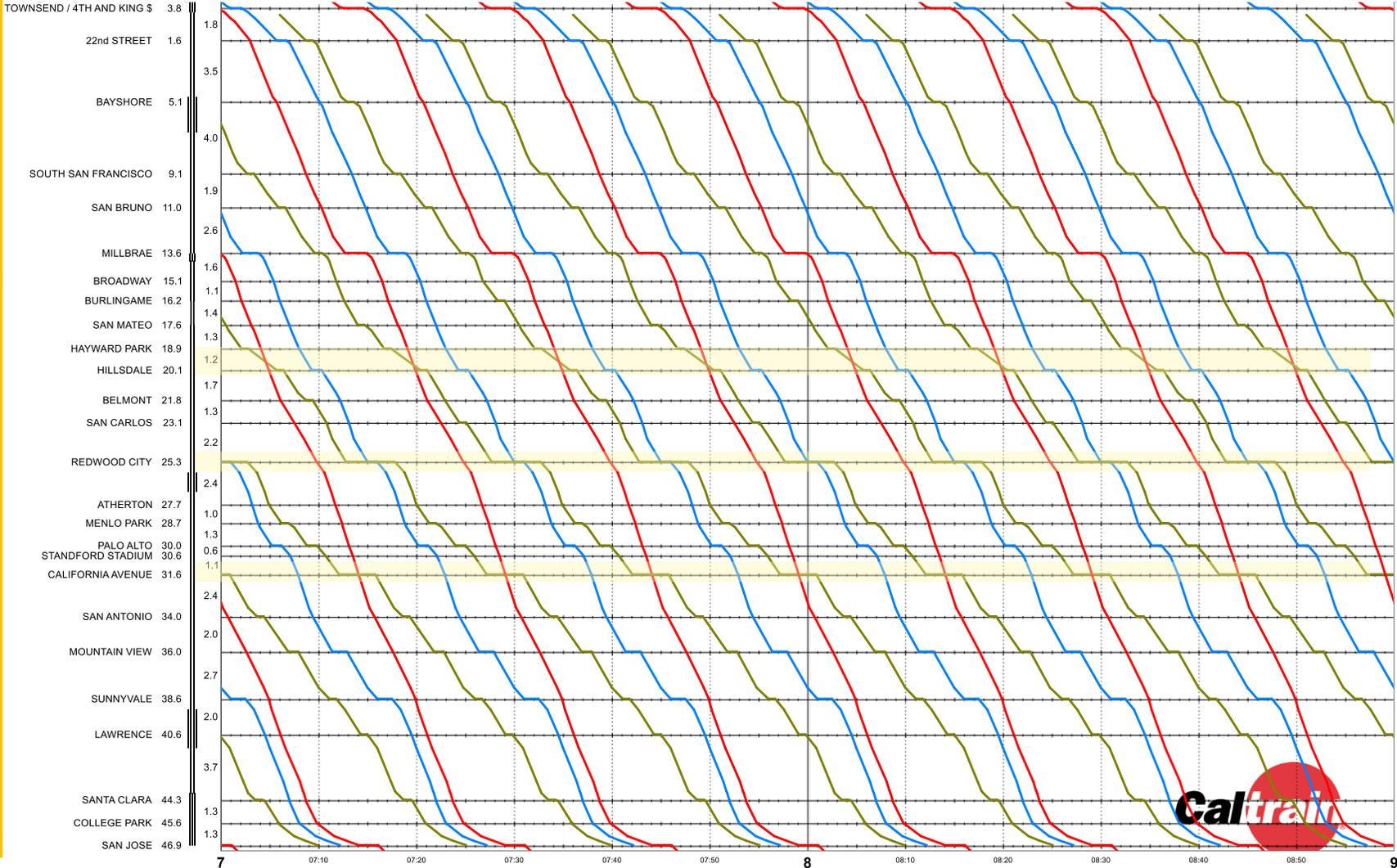
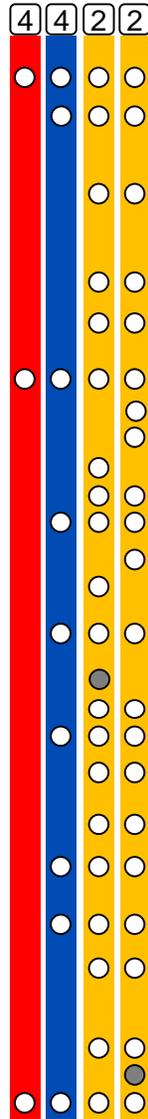
Frequency per Hour



Stringlines shown in terminal areas of San Francisco and San Jose are placeholder values only and have not been conformed to terminal constraints – service levels and operations within terminal areas subject to further analysis.

Local/Express: 12 Trains Reduced Passing Tracks

Frequency per Hour

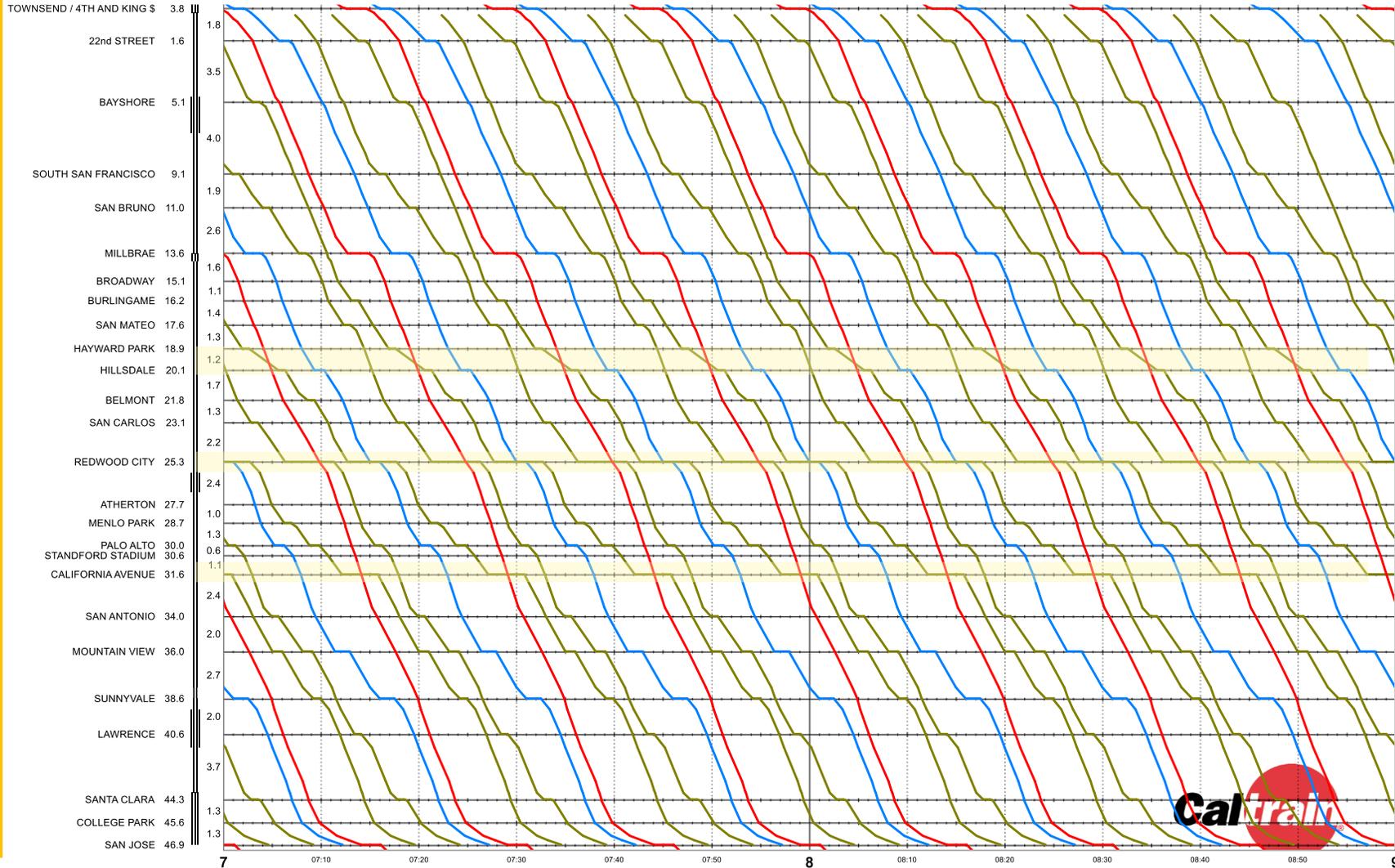
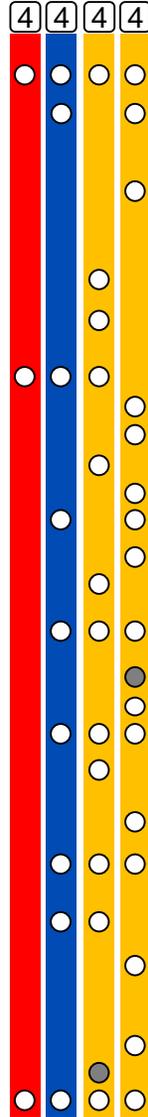


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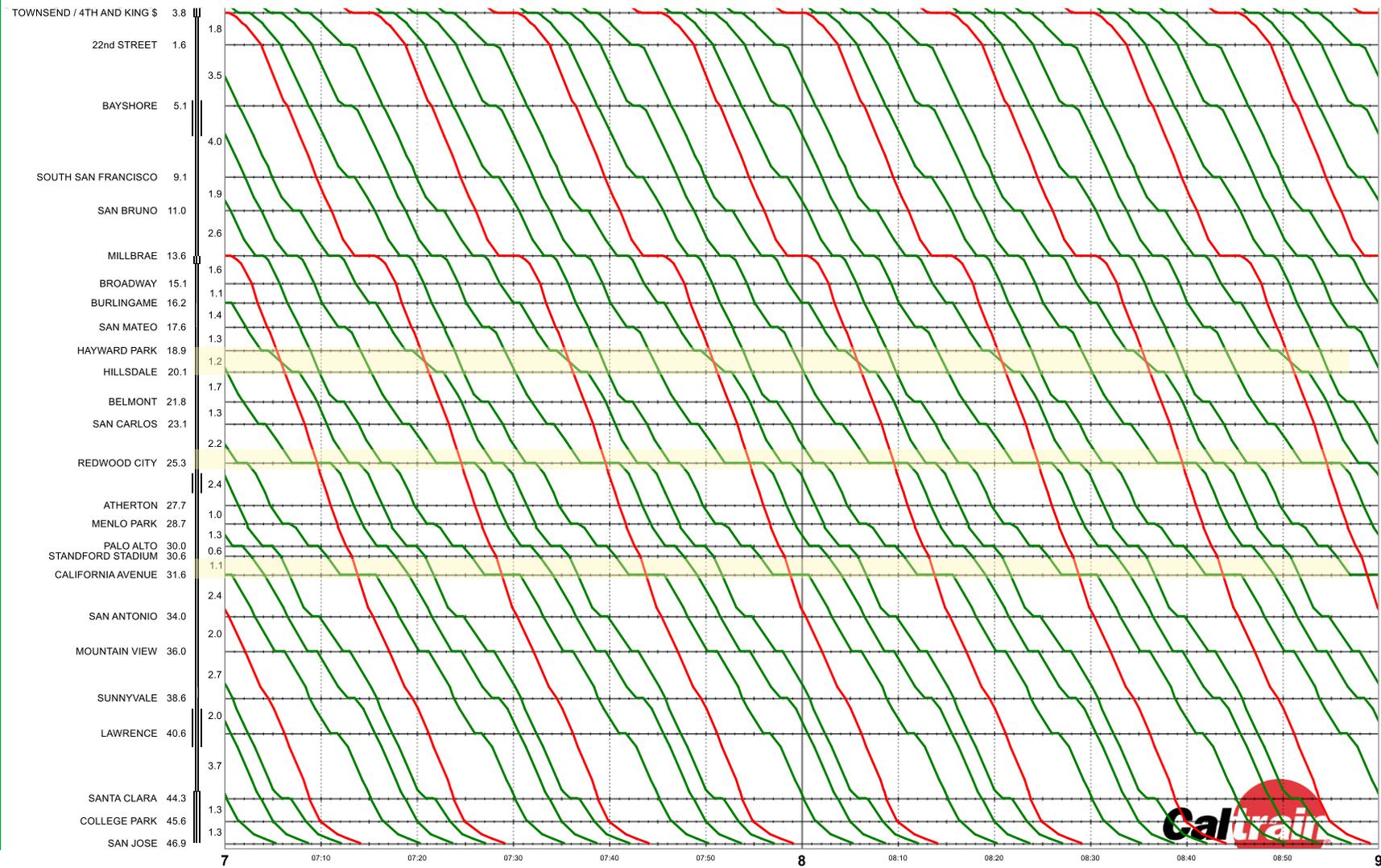
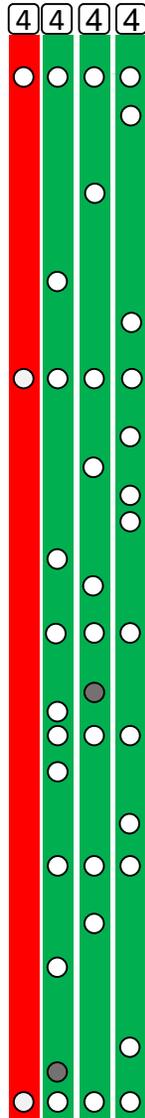
Local/Express: 16 Trains Reduced Passing Tracks

Frequency per Hour



Stringlines shown in terminal areas of San Francisco and San Jose are placeholder values only and have not been conformed to terminal constraints – service levels and operations within terminal areas subject to further analysis.

Skip Stop: 16 Trains per hour



Stringlines shown in terminal areas of San Francisco and San Jose are placeholder values only and have not been conformed to terminal constraints – service levels and operations within terminal areas subject to further analysis.





Memorandum

Date: November 29, 2018

To: CalMod Local Policy Maker Group (LPMG)

From: John Funghi, CalMod Chief Officer; Casey Fromson, Gov. Affairs Director

Re: Caltrain Electrification Project Update

THANK YOU RIDERS

In November, we launched a campaign to highlight and thank our riders for their continued support while we work on the Caltrain Electrification Project. Weekend construction closures can be frustrating, but it means that change is coming, and we hope you'll agree that the future is worth it.

Check out what Caltrain riders have to say about the CalMod program at CalMod.org/Riders-Benefits.



ELECTRIC VEHICLE UPDATE

Thank you to the Stadler US manufacturing team in Salt Lake City, Utah for making Caltrain's high-performance electric trains. Their hard work will bring riders a more efficient and sustainable ride. We have a new video showcasing the work taking place in Salt Lake City here: <https://www.youtube.com/watch?v=VJIGNMt710c&feature=youtu.be>



ELECTRIFICATION INFRASTRUCTURE UPDATE

Crews continue notching and grouting work in the San Francisco Tunnels for Caltrain Electrification, and from South San Francisco to Burlingame foundations and poles are being installed. Pre-construction activities are now underway along the entire corridor.



Inside one of the SF Tunnels

To sign up for weekly construction updates or for more construction information, visit CalMod.org/Construction.

Public Meetings Re: Construction Activities

Occurred

- Burlingame, August 1
- San Francisco, August 21
- Palo Alto, August 28
- Brisbane Council, September 6
- San Francisco, September 10
- Mountain View, September 12
- San Francisco, September 13
- Sunnyvale, September 17
- San Francisco, September 25
- San Mateo, October 9
- Belmont, November 8

Upcoming

- Redwood City and North Fair Oaks, November 28
- Menlo Park Community Meeting, December 5

For more details, and a full list of upcoming meetings, please visit CalMod.org/events

DETAILED PROGRESS REPORT

To view the detailed Monthly Progress Report, please visit:

http://www.caltrain.com/projectsplans/CaltrainModernization/CalMod_Document_Library.html



Memorandum

Date: November 29, 2018
To: Local Policy Maker Group (LPMG)
From: Boris Lipkin, Northern California Regional Director
Re: California High-Speed Rail Program Update

STATEWIDE PROGRAM

November Authority Board Meeting

At the November 13, 2018 California High-Speed Rail Authority (Authority) Board of Directors meeting in Burbank, the Board concurred with staff's recommended Preferred Alternatives (PA) for the Palmdale to Burbank Project Section, Burbank to Los Angeles Project Section, and Los Angeles to Anaheim Project Section. This concurrence allows the Authority to identify a PA in the development of each project section's Environmental Impact Report/Statement.

Information on all items discussed at the November Board meeting can be found, [here](#). The next Authority Board meeting will be on Thursday, December 13, 2018.

SAN FRANCISCO TO SAN JOSE PROJECT SECTION

October Community Working Groups

The San Francisco to San Jose Project Section Community Working Groups (CWG) met in October 2018:

- October 15, 2018: South Peninsula CWG at Santa Clara Central Park Library
- October 22, 2018: San Mateo County CWG at Millbrae Community Center
- October 24: San Francisco CWG at SPUR

During these meetings, members reviewed program-wide updates, the Authority's Connecting Communities Strategy, and the San Francisco to San Jose Project Section alternatives and common project elements such as station facilities, curve straightening, and safety modifications. The CWG members were also asked to provide feedback on topics to be covered at upcoming CWG meetings between now and the time that staff will take a State's Preferred Alternative to the Board of Directors in December of 2019. Below are key themes of feedback heard and recommendations to the CWG process.

Key themes of this feedback included:

- Interagency coordination and high-speed rail's connection to other projects
- Grade separation plans and other safety modifications along the Peninsula
- Continued neighborhood-specific outreach
- Caltrain coordination and blended service planning
- Intermodal connectivity and mobility including station access
- High-speed rail ridership

Recommendations on the CWG process moving forward:

- Consider ultimate goals of the CWG process
- CWG members thought three additional meetings before the PA was a good frequency and sequence
- Identify a reoccurring meeting date
- Ongoing Caltrain staff coordination and participation
- Bring in guest speakers, host panels

Materials from each CWG meeting can be found on the website [here](#).

SAN JOSE TO MERCED TO SAN JOSE PROJECT SECTION

November Community Working Groups:

The Authority is conducting a round of CWG meetings in the San Jose to Merced Project Section. The San Jose CWG will continue the work they have already built on over the past year, while the Morgan Hill-Gilroy CWG will be convened for the first time since early 2017.

- November 7: Morgan Hill-Gilroy CWG Meeting at Portuguese Lodge of Gilroy
- November 28: San Jose CWG Meeting at the Biblioteca Latinoamericana Branch Library in San Jose

These meetings will give representatives of these communities an opportunity to hear directly from Authority staff about the 2018 Business Plan and the advancement of the design for a new alternative being studied, which will allow for electrified passenger rail services on existing rail from San Jose to Gilroy. Additional topics will also include interfaces and coordination with other projects. This content will also be shared with the San Jose-Morgan Hill and Gilroy-Los Banos TWGs, which convene city and county staff as well as agency and special district staff in this project section.

Materials from the November 7 Morgan Hill – Gilroy CWG can be found [here](#).

ENVIRONMENTAL JUSTICE OUTREACH

During September and October, the Authority's Outreach Team conducted canvassing of communities with concentrations of environmental justice (EJ) populations and service providers along the San Francisco to San Jose Project Section to generate neighborhood-specific, place-based insights. This feedback will be utilized by the Authority as it continues to develop a staff recommended Preferred Alternative for the San Francisco to San Jose Project Section. Key topics heard during these canvassing efforts include:

- Concerns
 - Safety
 - Noise
 - Toxins, pollution and air quality
 - Displacement via gentrification
 - Construction impacts
 - Access to education/services

- Benefits
 - Economic opportunities for residents (e.g., project labor agreements, local hiring)
 - Community benefits for the neighborhood (e.g., parks, lighting, road improvements, safety improvements)

Next steps for EJ outreach include canvassing in the San Jose to Merced Project Section beginning in November 2018 through January 2019. Canvassing will take place in San Jose, Morgan Hill, San Martin, Gilroy, and Los Banos. The Authority will also look to continue furthering community partnerships to engage EJ populations and organize meetings with service provider and small groups of community leaders.

CONNECTING COMMUNITIES STRATEGY

As part of the Connecting Communities Strategy, the Authority has engaged CWG members, city and county staff, and elected officials to solicit local projects that are directly connected to the high-speed rail project, have a nexus to the project, or will occur close to the corridor and may require coordination. For transportation, energy, and/or natural resources projects that do not have a direct connection to the project, Authority planning staff are working with state partners to disseminate grant programs information.

Upcoming grant application deadlines include:

- Caltrans Transportation Planning Grants (*Applications due November 30, 2018*)
 - Sustainable Communities Planning Grants (\$29.5 million)
 - Strategic Partnership Grants (\$4.5 million)
 - Adaption Planning Grants (\$6 million)
- Department of Housing and Community Development Grants (*Applications due February 11, 2019*)
 - Affordable Housing and Sustainable Communities Program (AHSC) (\$395 million)

RECENT AND UPCOMING OUTREACH ACTIVITIES

- November 7: Morgan Hill – Gilroy Community Working Group Meeting
- November 14: San Francisco Chamber of Commerce Briefing
- November 28: San Jose Community Working Group Meeting

NORTHERN CALIFORNIA **PROJECT UPDATE** **Local Policy Maker Group**

November 29, 2018

AGENDA

Statewide Update

**Northern
California Update**

**Environmental Justice
Outreach**

**Connecting
Communities Strategy**

Statewide

NorCal Update

EJ Outreach

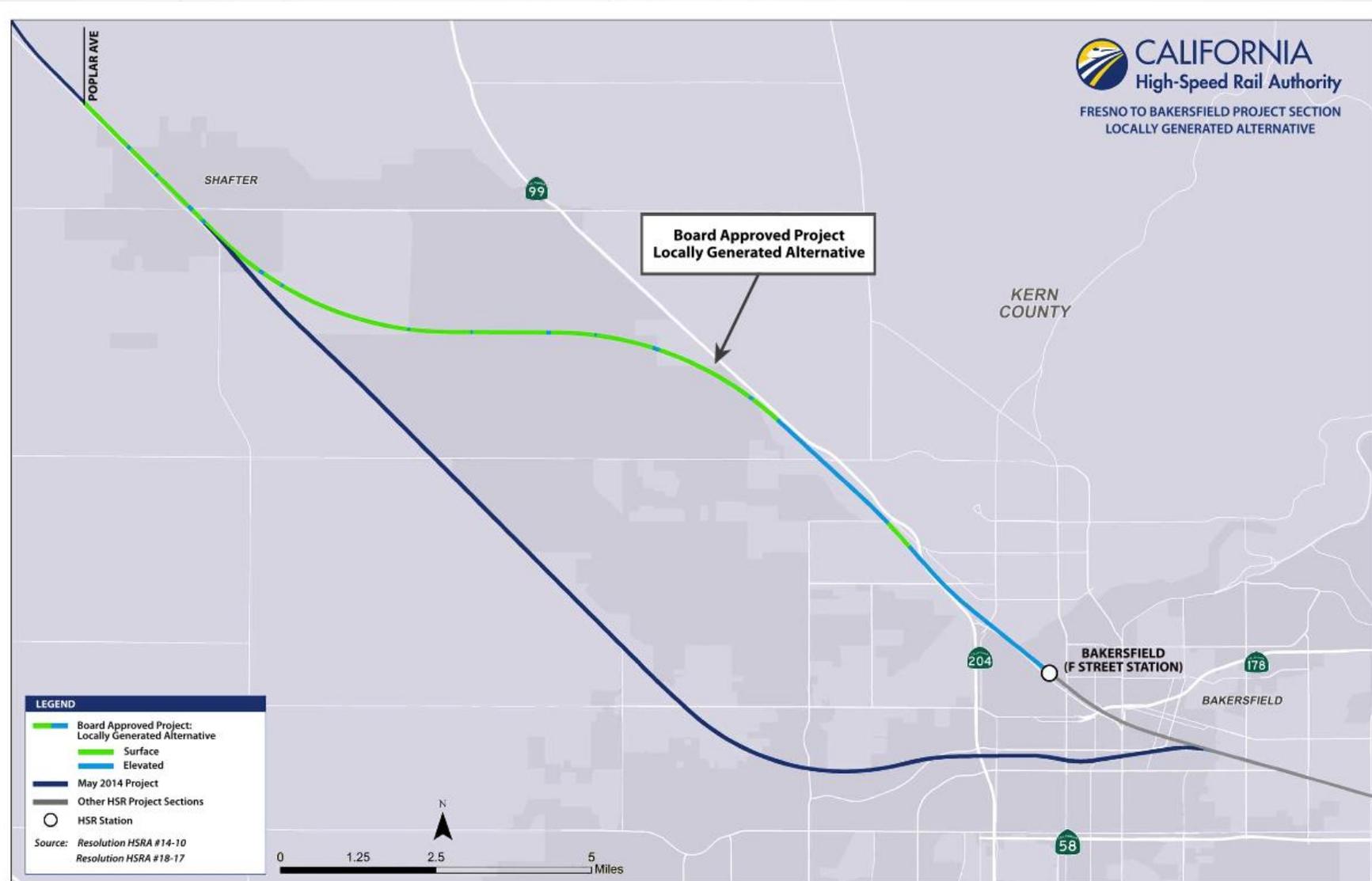
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STATEWIDE UPDATE

OCTOBER BOARD MEETING



BOARD CERTIFICATION OF FRESNO TO BAKERSFIELD PROJECT SECTION FINAL SUPPLEMENTAL EIR



BOARD CONCURRED WITH THE STAFF RECOMMENDED STATE PREFERRED ALTERNATIVE FOR THE BAKERSFIELD TO PALMDALE PROJECT SECTION



NOVEMBER BOARD MEETING

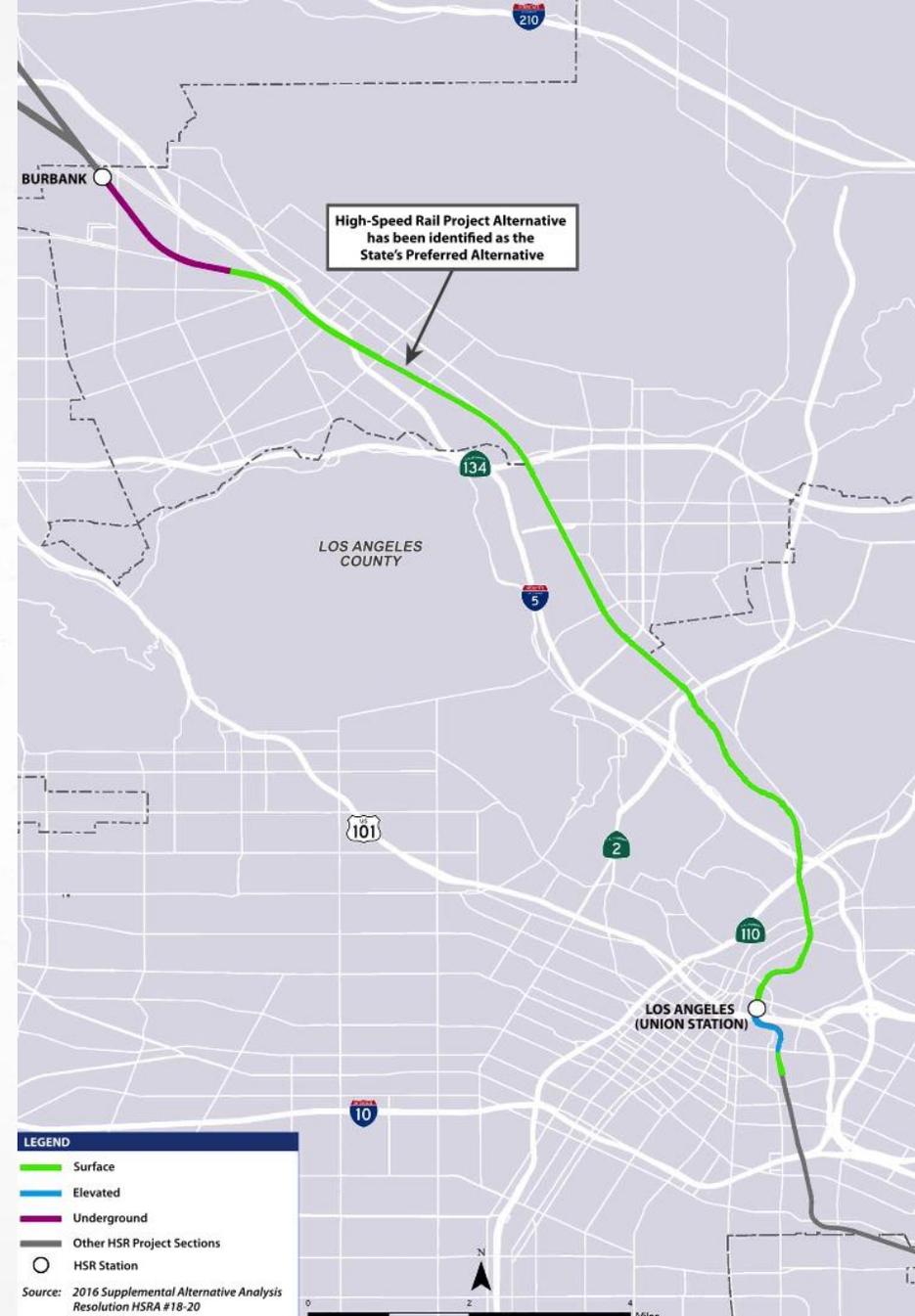
Concurrence of remaining 3 Staff Recommended State Preferred Alternatives



BOARD CONCURRED WITH THE STAFF RECOMMENDED STATE PREFERRED ALTERNATIVE FOR THE PALMDALE TO BURBANK PROJECT SECTION



BOARD CONCURRED WITH THE STAFF RECOMMENDED STATE PREFERRED ALTERNATIVE FOR THE BURBANK TO LOS ANGELES PROJECT SECTION



BOARD CONCURRED WITH THE STAFF RECOMMENDED STATE PREFERRED ALTERNATIVE FOR THE LOS ANGELES TO ANAHEIM PROJECT SECTION



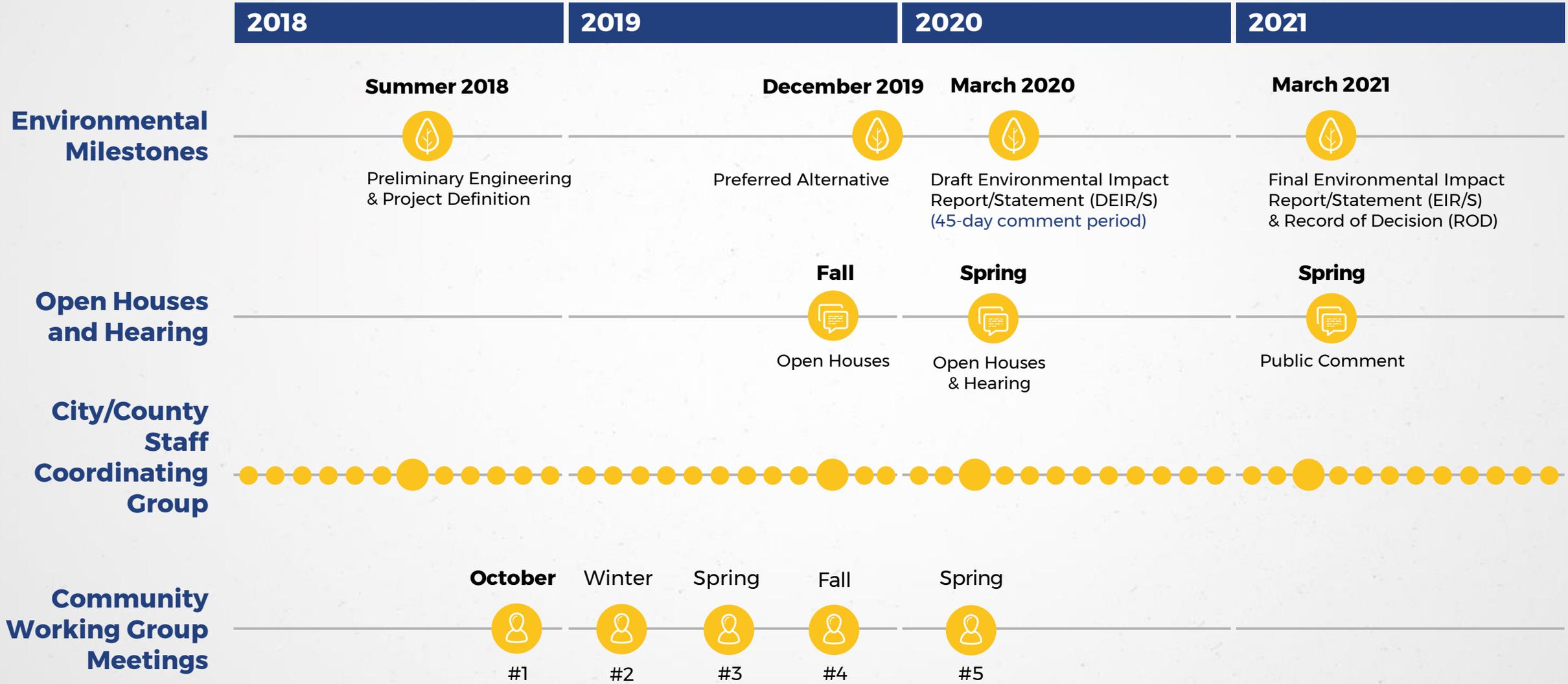
NORTHERN CALIFORNIA **UPDATE**

DRAFT PEPD

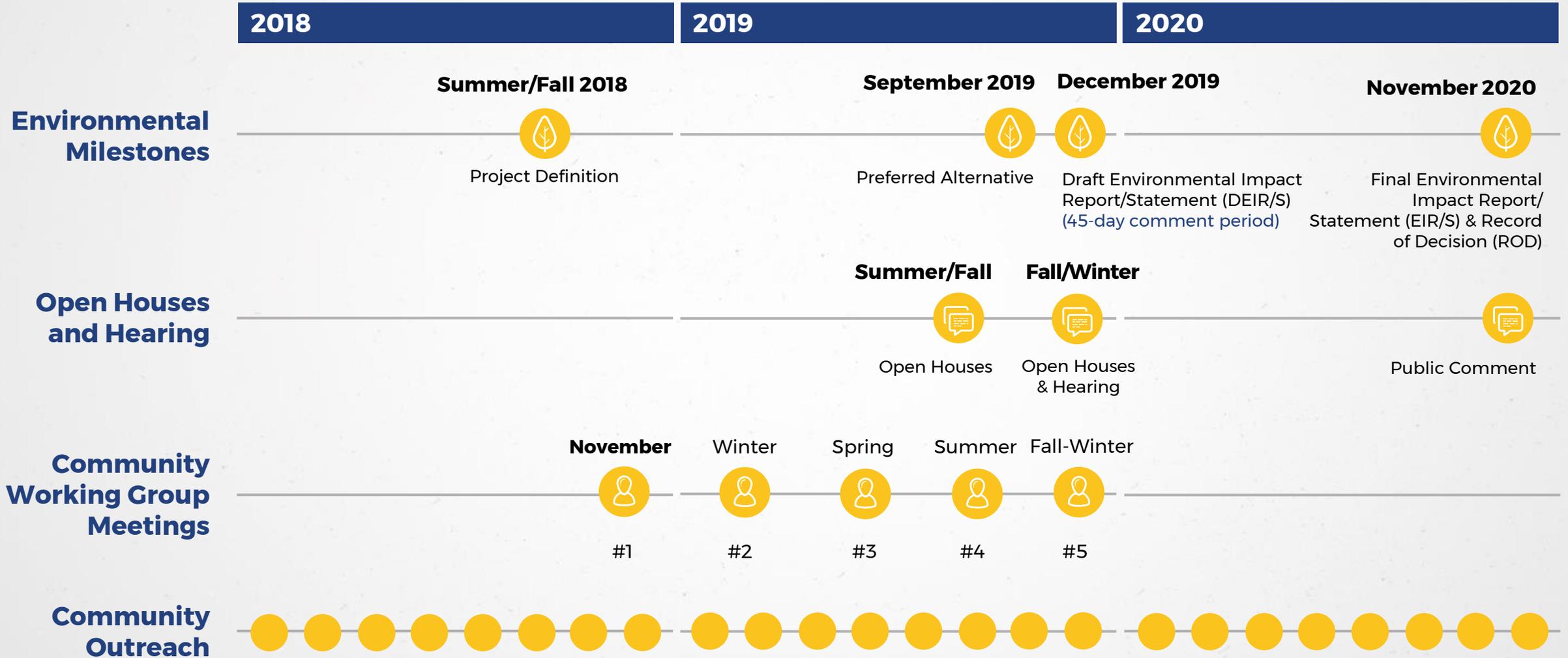
Incorporated Feedback

- Feedback received:
 - General concurrence with design, minor feedback on footprint
 - Staff shared a number of current and future planning projects
- No significant changes to the design based on feedback received
- Minor feedback on footprint addressed in Draft PEPD

SAN FRANCISCO TO SAN JOSE OUTREACH



SAN JOSE TO MERCED OUTREACH



SAN FRANCISCO TO SAN JOSE OCTOBER COMMUNITY WORKING GROUPS

Meetings

South Peninsula

October 15 at 6:00 to 8:00 p.m.

San Mateo County

October 22 at 6:00 to 8:00 p.m.

San Francisco

October 24 at 6:30 to 8:30 p.m.

Morgan Hill-Gilroy

November 7 at 6:00 to 8:00 p.m.

San Jose

November 28 at 6:00 to 8:00 p.m.

Participation to Date

- 31 CWG members
- 11 members of the public

OCTOBER COMMUNITY WORKING GROUPS



Key Themes

- Caltrain coordination
- Interagency coordination and connection to other projects
- Grade separations and other safety modifications
- Continued neighborhood-specific outreach
- Intermodal connectivity and mobility
- Ridership

ENVIRONMENTAL JUSTICE OUTREACH

SAN FRANCISCO TO SAN JOSE PROJECT SECTION

September/October
EJ Outreach Canvassing

● Canvassing



San Francisco City/County

- Displacement of low-income communities
- Construction impacts at 4th & King
- Equitable distribution of project benefits (i.e. local jobs)

San Mateo County

- Future accessibility of Bayshore Station
- Gentrification
- Access to jobs and housing

Northern Santa Clara County

- Air quality
- Safety
- Traffic



EJ OUTREACH CANVASSING



Key Themes

Concerns

- Safety
- Noise
- Toxins, pollution and air quality
- Displacement via gentrification
- Construction impacts
- Access to education/services

Benefits

- Economic opportunities for residents (e.g., project labor agreements, local hiring)
- Community benefits for the neighborhood (e.g., parks, lighting, road improvements, safety improvements)

EJ OUTREACH NEXT STEPS



Next Steps

San Jose to Merced Segment Canvassing (October-January)

- Morgan Hill, Gilroy, San Martin, San Jose, Monterey Corridor, Los Banos

Continued community partners

- AdelanTECH leadership program
- Asian Americans for Community Involvement

San Jose to Merced Segment Canvassing (October-January)

- Service provider meetings and small groups.

CONNECTING COMMUNITIES STRATEGY

SAN FRANCISCO TO SAN JOSE PROJECT SECTION

Connecting Communities Strategy Outreach To Date

Caltrans Transportation Planning Grants

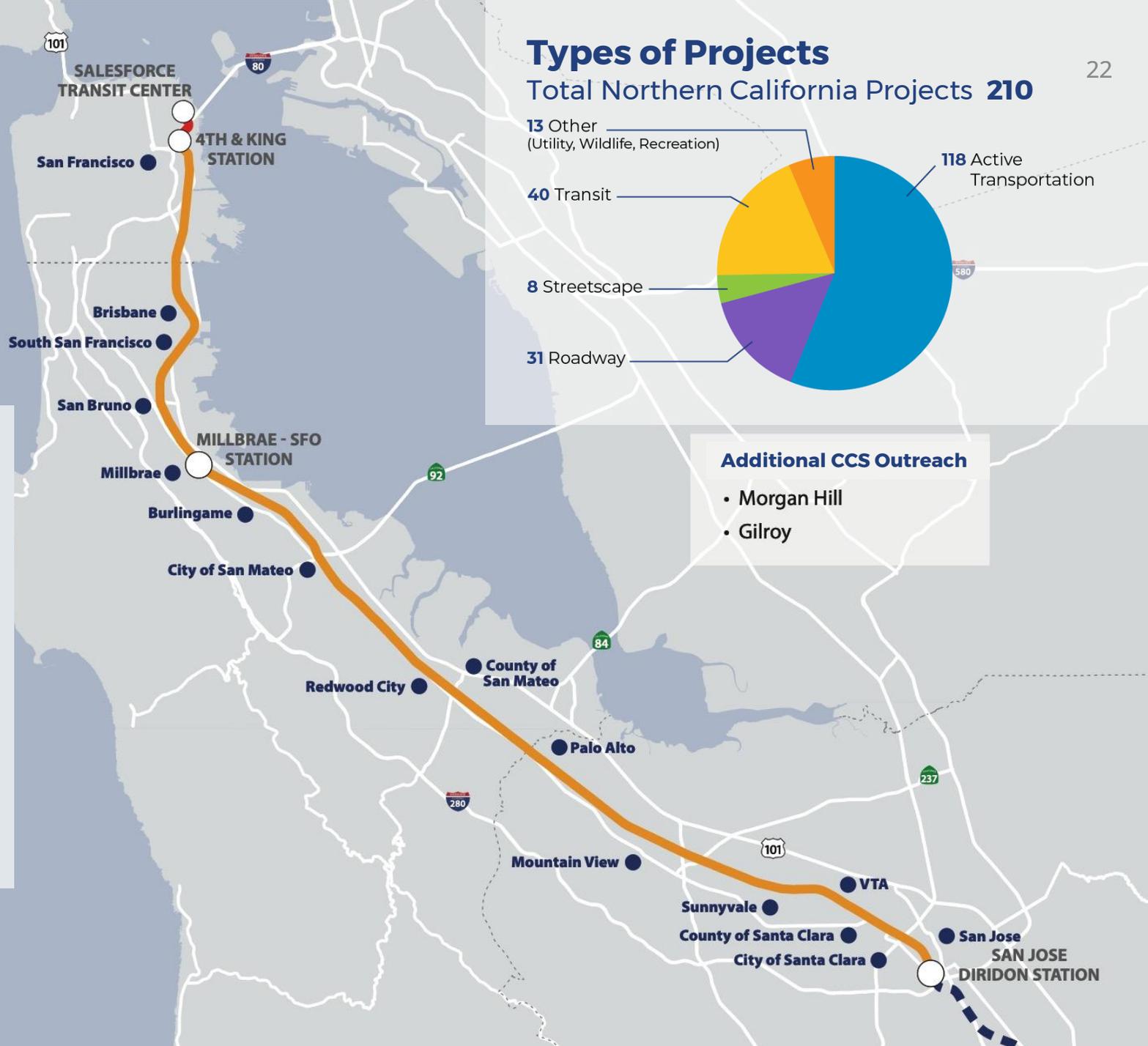
(Applications due November 30, 2018)

- Sustainable Communities Planning Grants (\$29.5 million)
- Strategic Partnership Grants (\$4.5 million)
- Adaption Planning Grants (\$6 million)

Department of Housing and Community Development Grants

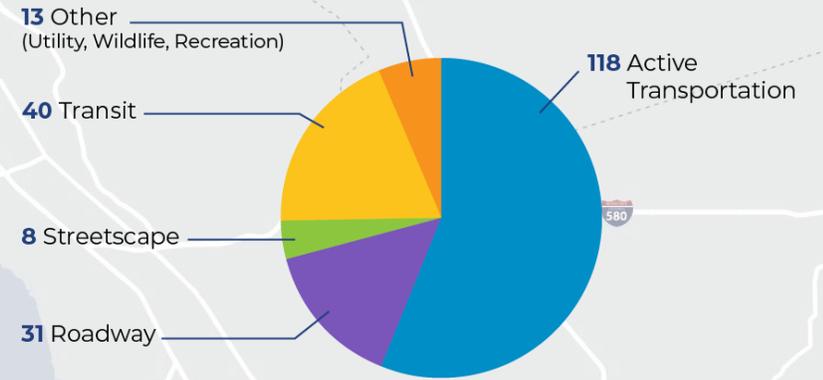
(Applications due February 11, 2019)

- Affordable Housing and Sustainable Communities Program (AHSC) (\$395 million)



Types of Projects

Total Northern California Projects 210



Additional CCS Outreach

- Morgan Hill
- Gilroy



THANK YOU & HOW TO STAY INVOLVED

WEBSITE www.hsr.ca.gov

HELPLINE 1-800-435-8670

EMAIL san.francisco_san.jose@hsr.ca.gov



Northern California Regional Office

California High-Speed Rail Authority
100 Paseo De San Antonio, Suite 206
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