Local Policy Maker Group (LPMG) Meeting

Due to COVID-19, this meeting will be conducted via teleconference only (no physical location) pursuant to the Governor's Executive Orders N-25-20 and N-29-20.

Directors, staff and the public may participate remotely via Zoom at **https://zoom.us/j/94954726853?pwd=TkR1WFg2SEorZVh5U2xLWnhHSUNNdz09** for audio/visual capability or by calling **1-669-900-6833**, Webinar ID: # **9495 4726 853** for audio only.

Public Comments: The Board Chair shall have the discretion to manage the Public Comment process in a manner that achieves the purpose of public communication and assures the orderly conduct of the meeting. **Members of the public are encouraged to provide** public comments in the following ways:

- **Email:** Comments may be submitted by emailing video@caltrain.com before each agenda item is presented. Please indicate in your email the agenda item to which your comment applies.
- **Auditory**: Oral comments will also be accepted during the meeting. Web users may use the 'Raise Hand' feature to request to speak. Callers may dial *9 to request to speak. Each commenter will be notified when they are unmuted to speak.

Thursday, November 19, 2020
5:30 p.m. – 7:30 p.m.

Agenda

1. Call to Order
2. Staff Report
3. Caltrain Business Plan
4. Caltrain Electrification Project
5. California High-Speed Rail: Update (Presented by California High-Speed Rail Authority Staff)
6. Public Comments on Items not on the Agenda
7. LPMG Member Comments/Requests
8. Next Meeting
    a. Thursday December 17, 2020 at 5:30pm
9. Adjourn

All items on this agenda are subject to action

Memorandum

Date: November 19, 2020

To: CalMod Local Policy Maker Group (LPMG)

From: Sebastian Petty, Deputy Chief, Caltrain Planning

Re: Caltrain Business Plan

PROJECT UPDATE

At the June 2020 Board Meeting, Peninsula Corridor Joint Powers Board (JPB) staff announced that activity on the Caltrain Business Plan would pause and pivot toward COVID Recovery Planning efforts. At the September 2020 Board Meeting the Board adopted the Equity, Connectivity, Recovery & Growth Framework (the Framework) – a significant policy document that outlines Caltrain's approach to recovering from the COVID-19 Pandemic and growing the system in a manner consistent with the larger Business Plan process. The framework includes specific policies and actions that describe how Caltrain can recover in a way that emphasizes improving equity outcomes on the system and enhancing connectivity to the region's transit network.

Following the adoption of the Framework, Caltrain staff has continued work on recovery planning. The update presentation this month focuses a proposed service change in December of this year.

Background

In 2017, the JPB secured full funding for the Peninsula Corridor Electrification Project and issued notices to proceed to its contractors for corridor electrification and purchase of Electric Multiple Unit railcars.

Now that construction on this long-awaited project is underway, the agency has the opportunity to articulate a long-term business strategy for the future of the system. The initial concept for a Caltrain "Business Plan" was brought to the Board in April of 2017. The Board reviewed a draft scope of work for the Business Plan in December of 2017 and adopted a final Business Strategy and Scope of Work in February of 2018. Technical work on the Plan commenced in the summer of 2018. The Business Plan has been scoped to include long-range

demand modeling, and service and infrastructure planning, as well as organizational analysis and an assessment of Caltrain's interface with the communities it traverses. In October of 2019, the JPB marked a major milestone in the Business Plan process with its adoption of a "2040 Service Vision" for the Caltrain system. This action set long-range policy guidance for the future of the Caltrain service and allowed staff to advance toward the completion of the overall plan by summer of 2020.

Starting in March of 2020, however, the emergence of the COVID-19 Pandemic resulted in a rapid and severe crisis for the railroad, with ridership plummeting by as much as 98% and the implementation of significant service cuts. Based on this unprecedented circumstance, staff informed the Board of their decision to temporarily pivot Business Plan efforts toward recovery planning in June of 2020.

Caltrain Business Plan

COVID RECOVERY PLANNING

UPDATE ON NEAR TERM SERVICE PLANNING

November 19, 2020

Ongoing Recovery Planning Efforts

Caltrain has pivoted its Business Plan effort to focus on COVID-19 Recovery planning. This work is spread across multiple streams as shown on the right

Caltrain staff will engage regularly with the Board, stakeholders and the public as recovery planning proceeds over the next several months

Equity, Connectivity, Recovery, & Growth Framework

Near Term Service Planning

Financial Analysis

Scenario Planning

Ongoing Recovery Planning Efforts

Caltrain has pivoted its Business Plan effort to focus on COVID-19 Recovery planning. This work is spread across multiple streams as shown on the right

Caltrain staff will engage regularly with the Board, stakeholders and the public as recovery planning proceeds over the next several months

Equity, Connectivity, Recovery, & Growth Framework

Near Term Service Planning

Financial Analysis

Scenario Planning

Context & Background

Multiple Phases of Crisis & Response

Initial Triage

March 2020 – May 2020

Initial crisis and immediate triage response by Caltrain

Surviving the Pandemic

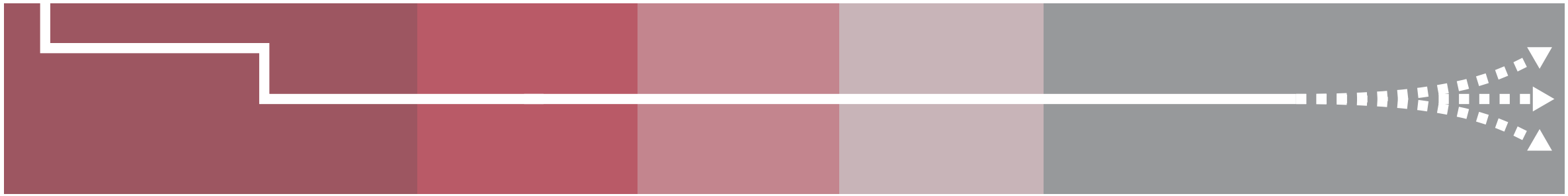
May 2020 – 2021 (?)

Extended period where Pandemic is ongoing and Caltrain ridership and operations remain deeply impacted and in a state of dynamic flux. Railroad's financial position is precarious

Preparing for the Next Reality

2021 and Beyond

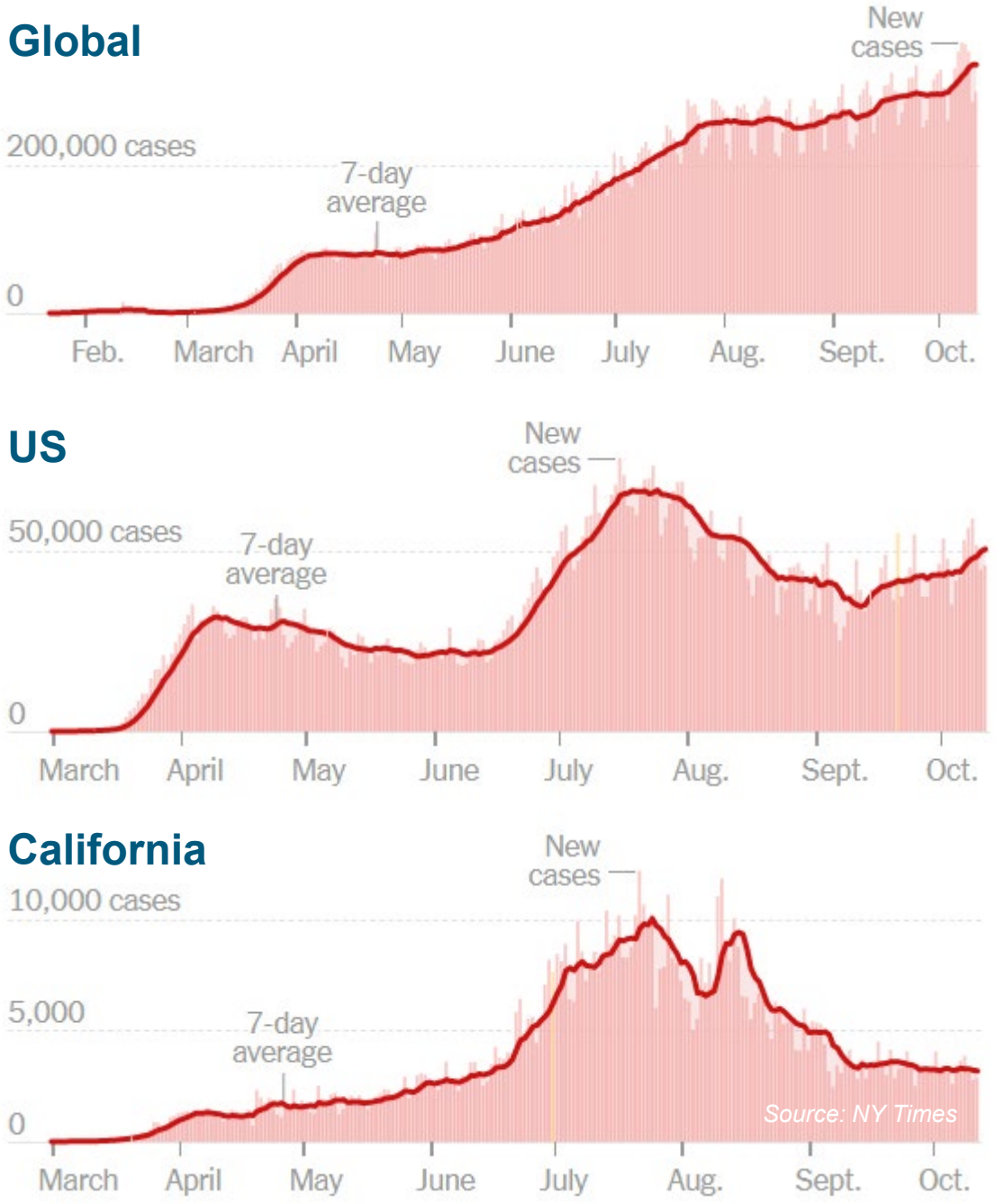
Long-term resolution of pandemic through vaccine or other permanent public health approaches. Caltrain adjusts to new Business Environment



The Pandemic

The U.S. and the world continue to experience waves of the COVID-19 pandemic.

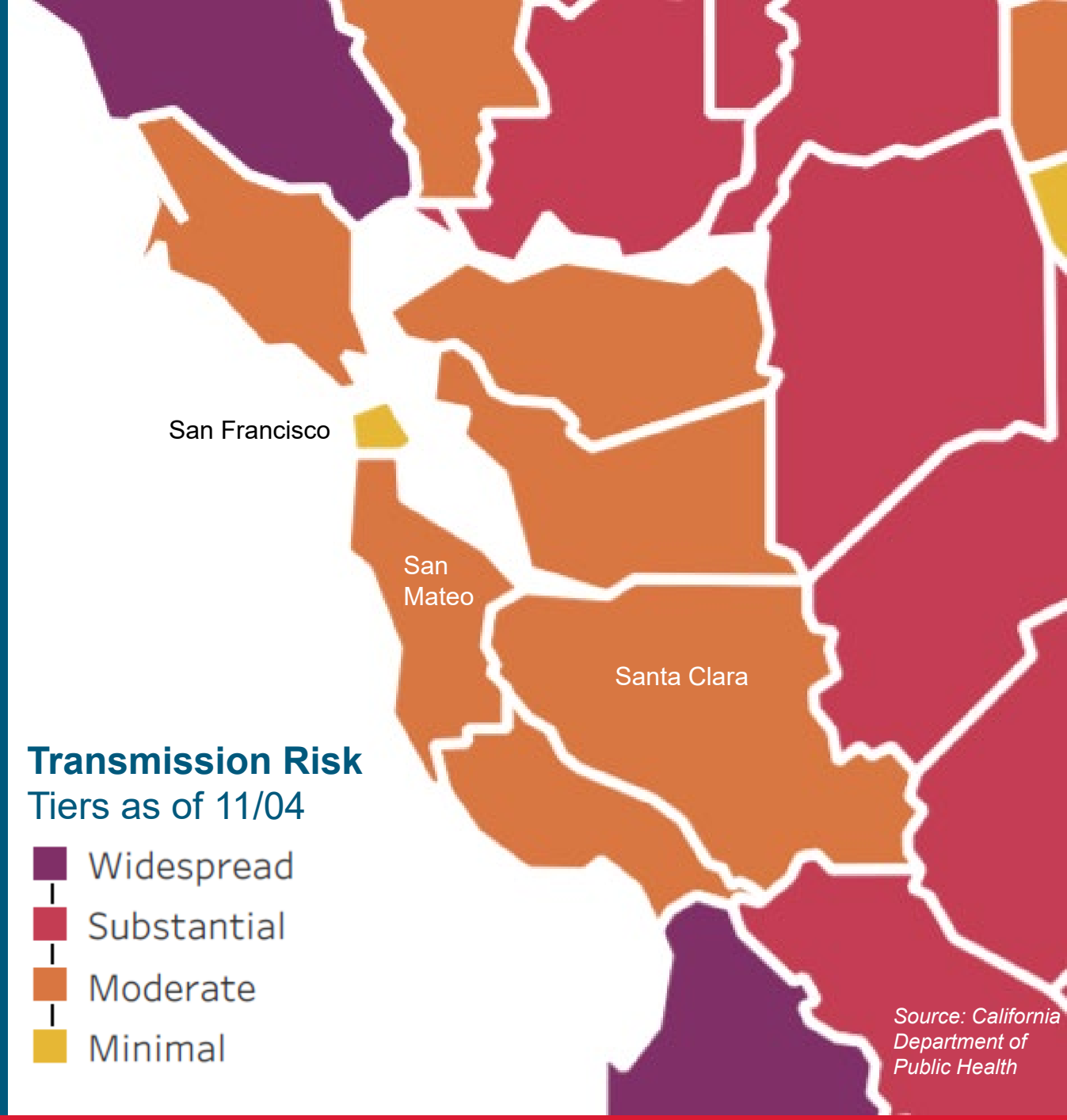
Public health experts, like Dr. Fauci, have indicated that they expect a vaccine could be available for mass distribution around Q2 2021, while social distancing guidelines are likely to remain in effect through at least Q3 2021.



The Pandemic & Bay Area

The Bay Area has been under a shelter-in-place order since March. Cases loads have generally remained lower than other regions in the country.

Many large companies have announced plans to continue remote work through at least July 2021. Some have announced permanent shifts toward remote work and hybrid work options.



Source: California Department of Public Health

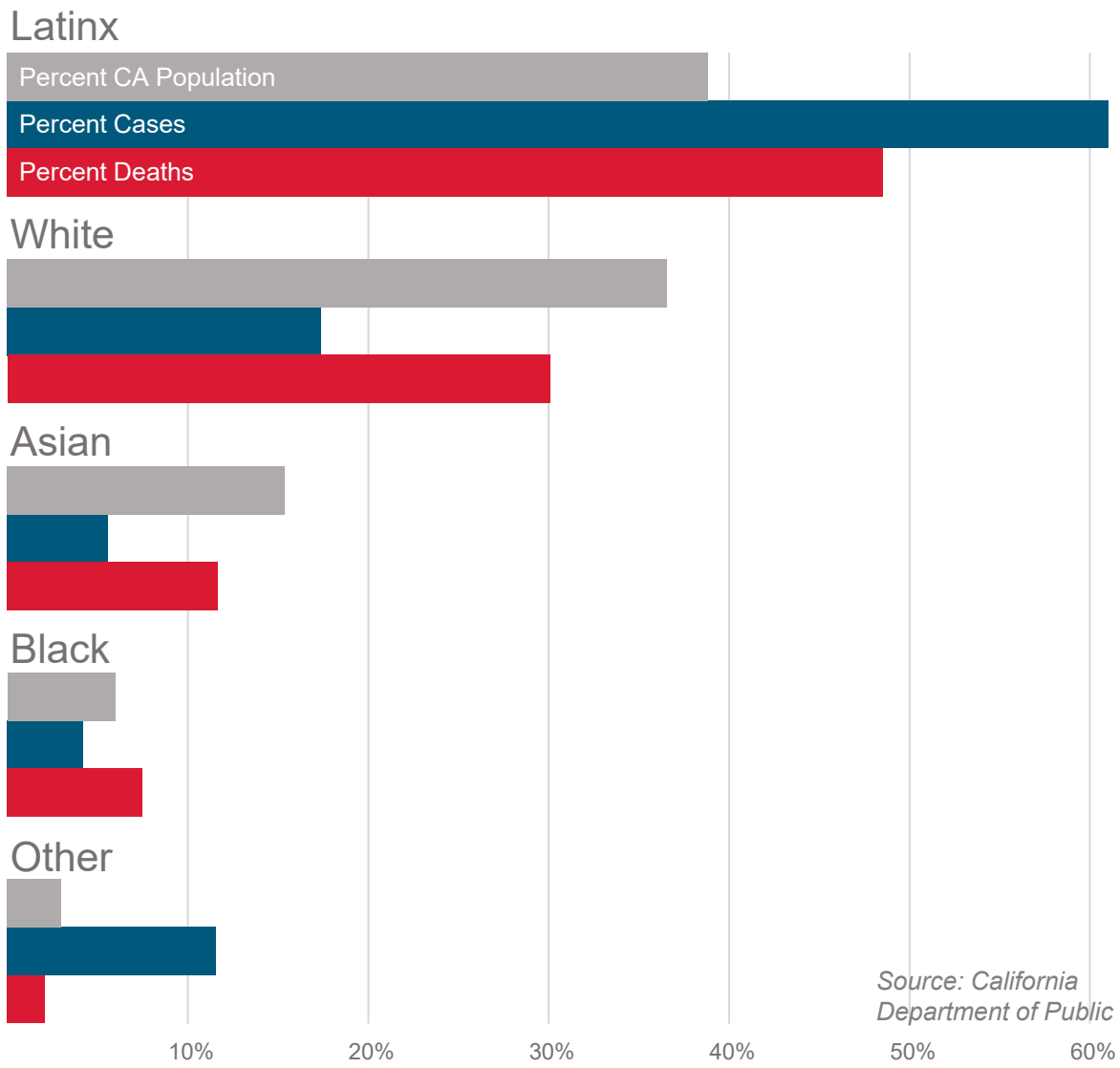
The Pandemic & Equity

The COVID-19 pandemic and economic effects have disproportionately affected low income communities and communities of color.

These populations have been more likely to face exposure as essential workers or be adversely affected by the shelter-in-place order.

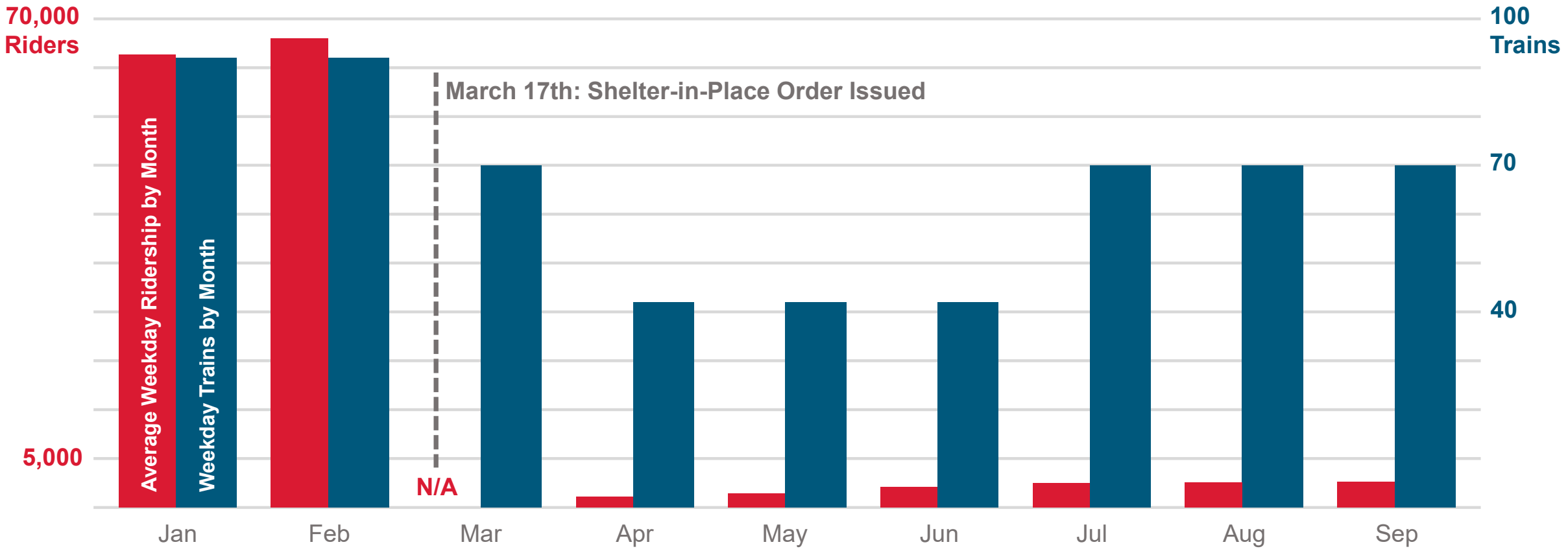
Caltrain's **Equity, Connectivity Recovery & Growth Framework** (adopted at the September JPB meeting) provides guidance to Caltrain regarding ways it can make its services more useful and accessible to these communities

California's COVID-19 Cases and Deaths by Race and Ethnicity



Source: California Department of Public Health

Changes in Caltrain Service and Ridership

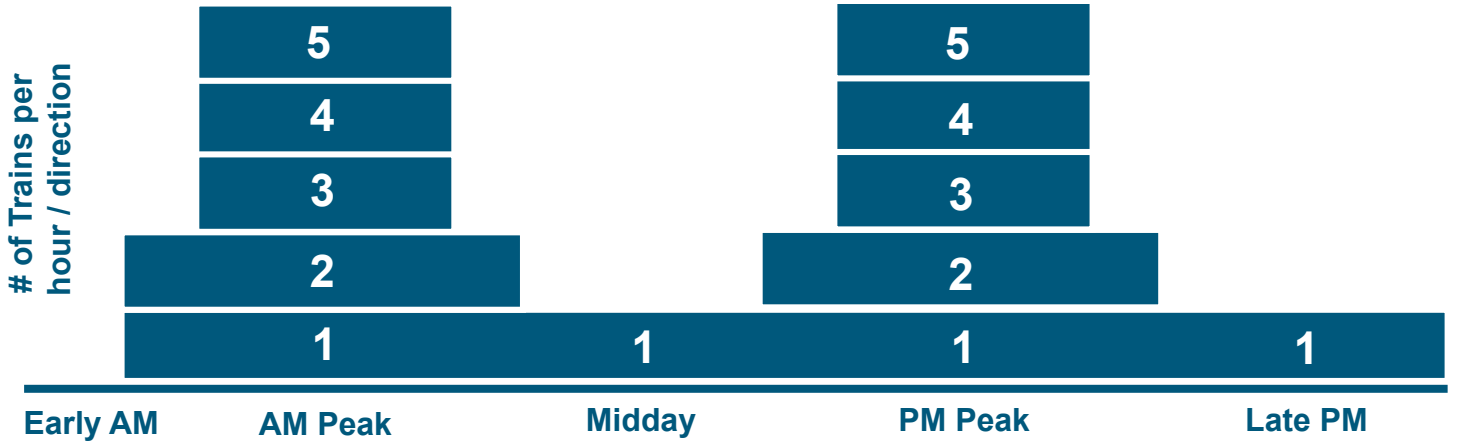


Change in Weekday Service Levels

Pre-COVID Service Plan

92 Trains/Day

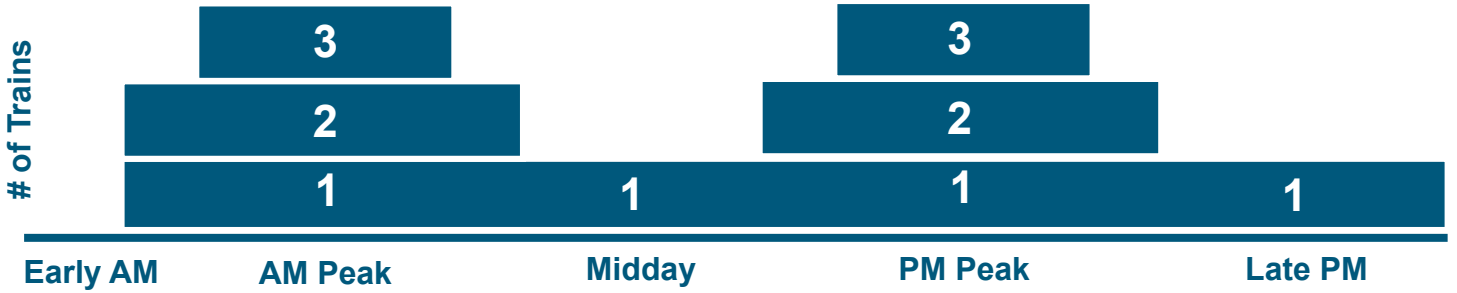
65,000 Daily Riders



Current Service Plan

70 Trains/Day

~3,500 Daily Riders



Health & Safety

Enhanced Cleaning

Face Coverings

Physical Distancing

Since the start of the pandemic, Caltrain has aggressively implemented enhanced safety protocols with an emphasis on frequent cleaning, mask requirements for all employees and passengers, and physical distancing onboard trains. Caltrain has partnered with other Bay Area transit agencies to develop common commitments and expectations for employees and passengers – and the JPB adopted the **Riding Together—Bay Area Healthy Transit Plan** at its September meeting

Caltrain Finances

Lacking a dedicated source of funding, Caltrain is highly dependent on fare revenue. With ridership devastated by the pandemic, Caltrain has had to rely heavily on CARES Act federal relief funding. The railroad has avoided devastating service cuts and has refrained from furloughs while using these funds.

CARES funding will be exhausted soon, and Caltrain must consider how to balance service costs, customer needs and available financial resources as it looks toward the coming year.

A Challenging Fiscal Outlook

Fiscal Year 2021 Budget

- The JPB has incrementally approved balanced quarterly operating budgets for Q1 and Q2
- A deficit of at least $18.5 million is projected for the remainder of the fiscal year
- Deficit could be higher if ridership recovery is slow or GoPass participation drops further
- Fiscal year 2022 will present additional financial challenges

Analyzing Options

- Caltrain is exploring a variety of deficit closure options related to both revenue generation and cost reduction
- Service plans shown here are being analyzed for cost implications

Winter Service Change: Context and Goals

Caltrain continues to navigate a period of extreme uncertainty relative to both the financial health of the system as well the trajectory of the pandemic and its impact on ridership recovery

Context

- The COVID-19 Pandemic is ongoing and the path to recovery and resolution is uncertain. Reopening of the region has been slow and uneven
- CARES Act funding will be exhausted in December timeframe. Overall financial state of railroad is highly uncertain
- Hillsdale reopening, potential Atherton closure and ongoing major construction on corridor

Goals

- Develop a consistent service framework that can be scaled up (and down) based on demand and funding availability while minimizing disruption and confusion for riders and connecting transit
- Focus on serving the riders who need Caltrain most, with an emphasis on implementing key elements of the ECRG policy
- Balance travel time and coverage goals while also maintaining capacity for social distancing

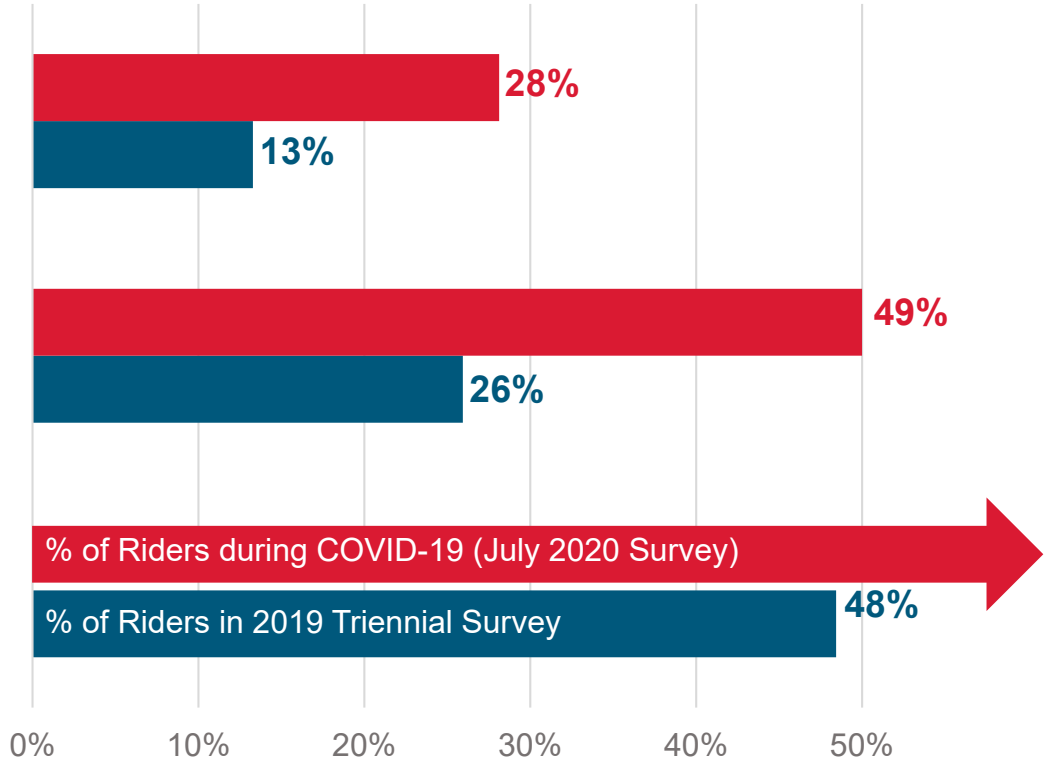
Overall Service Approach

Who's riding Caltrain during COVID-19?

Share of riders that qualify for **low income housing assistance**

Share of riders that live in households earning **less than $100k** per year

Share of riders that **did not have to a car**



Based on the July 2020 online survey, 2019 Triennial Survey

Ridership has skewed toward essential workers, many of whom live in low- or middle-income households.

Where Are Riders Traveling?

Caltrain ridership patterns have shifted during COVID-19, with ridership comprised of essential workers in healthcare, life sciences, government, and related fields.

Rider Trip Purposes

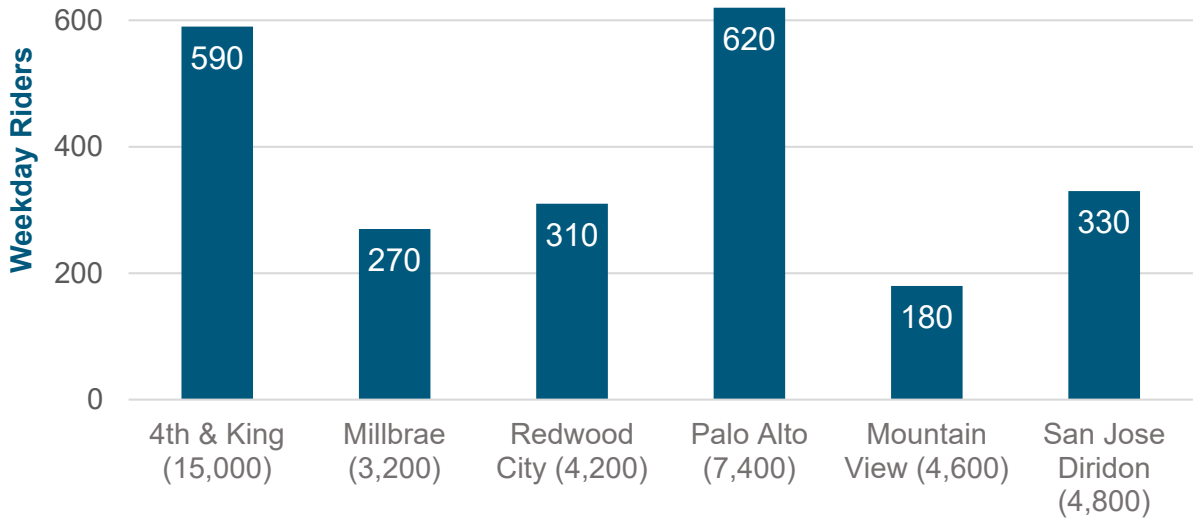
70% of riders commuting to work

50% of riders work in healthcare, life sciences, or government

10% of riders traveling to medical appointments

September 2020 Weekday Ridership at Top Ridership Stations

(2019 Ridership for Comparison)



Ridership Concentration

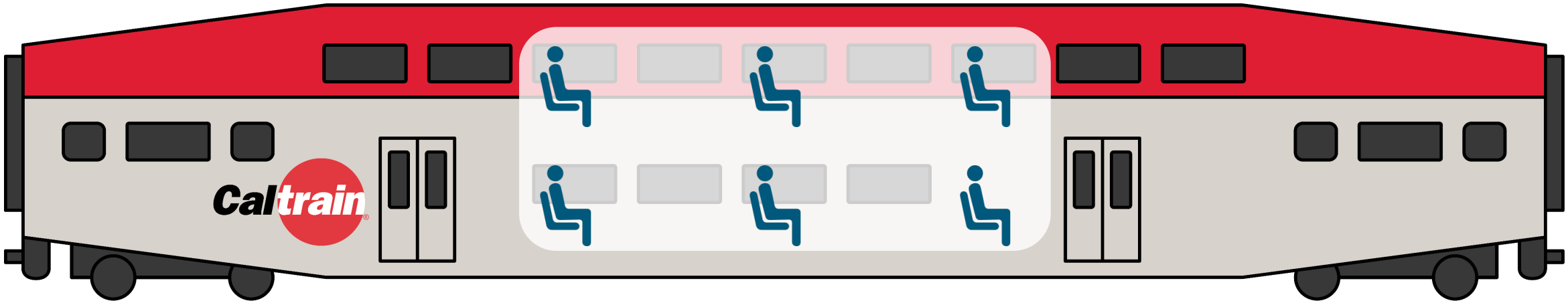
Ridership during COVID-19 has been more concentrated around stations with major medical centers like Palo Alto and Redwood City, with fewer riders commuting to offices due to COVID restrictions.

Gilroy Extension

Ridership on the Gilroy extension (50 riders per day) mirrors systemwide decline.

Caltrain

Social Distancing



Social Distancing

Trains can handle about 33% of seated capacity (roughly 250 passengers) in order to maintain 6 feet of distance between passengers, or about 500 passengers to maintain 3 feet of distance.

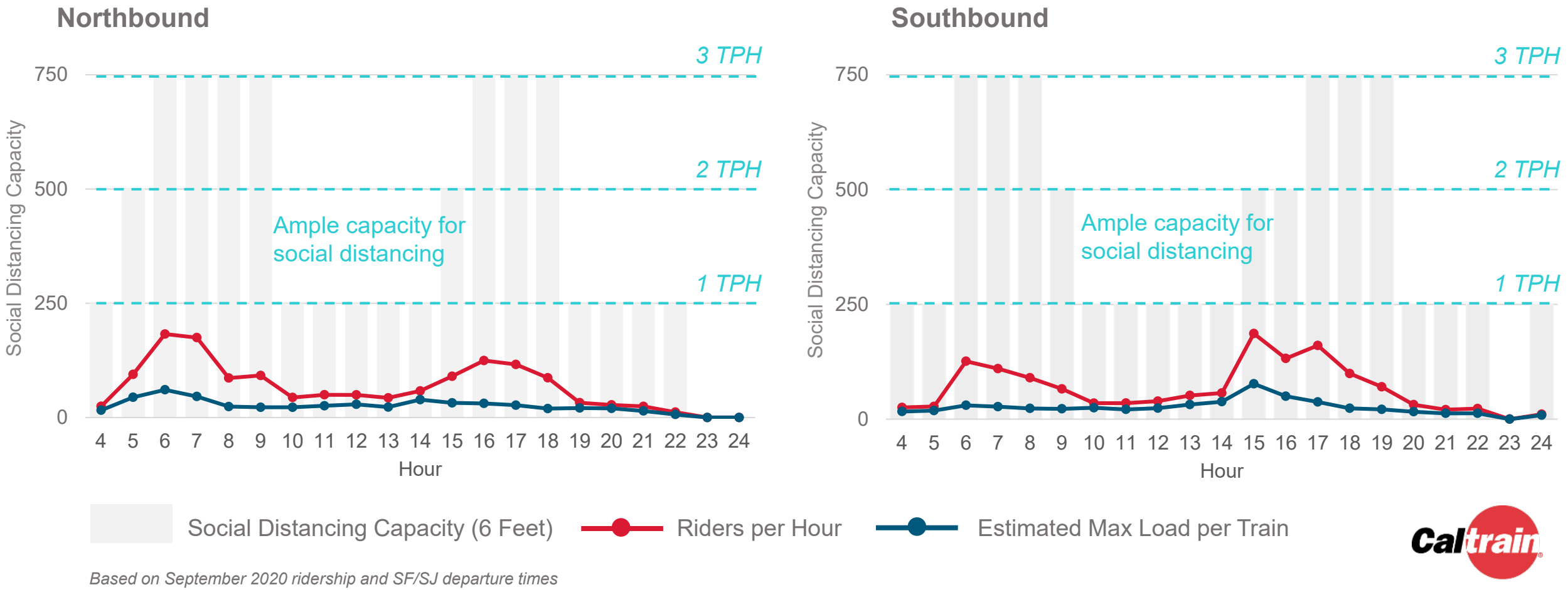
Ample Space is Available

On a typical day, Caltrain served a max load of around 8% of seated capacity in September (about 60 passengers).

When are Riders Traveling on Weekdays?

Weekday ridership has experienced earlier peaks due to a higher proportion healthcare workers

Average Weekday Ridership vs. Social Distancing Capacity



Based on September 2020 ridership and SF/SJ departure times

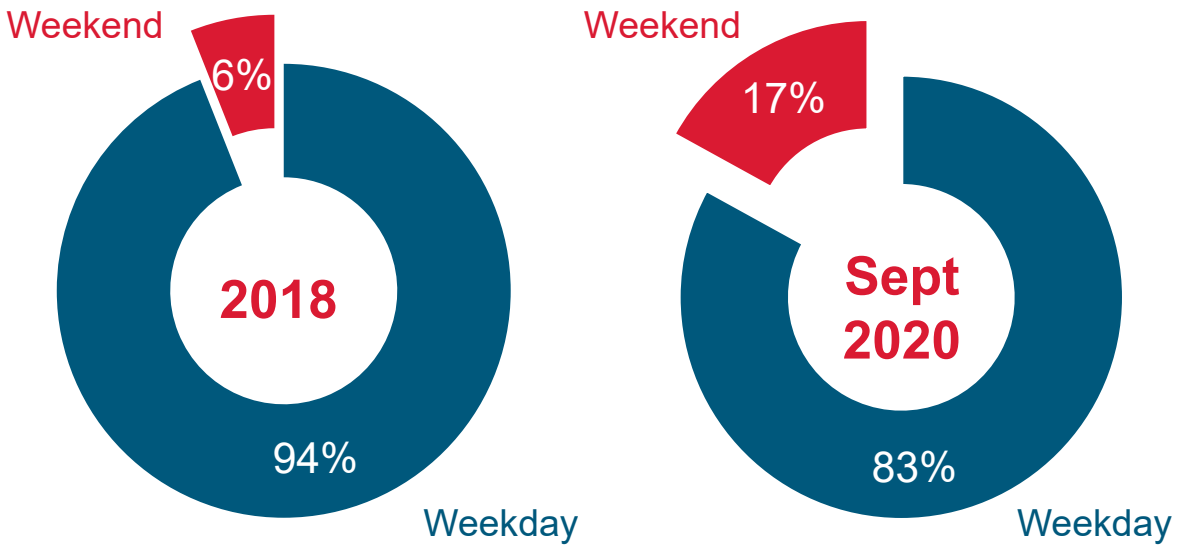
Weekend Ridership Patterns

The share of weekend ridership (1,900 per day, 17% of all riders) is three times greater than pre-COVID-19. The resiliency of weekend ridership is likely due to continued use by essential workers and low-income riders.

Ridership on Local trains is about 20% higher than on Bullet trains as the market for leisure trips has declined.

Based on September 2020 ridership, 2019 ridership counts, and 2019 Triennial Survey

Weekly Ridership, Pre-COVID and During COVID



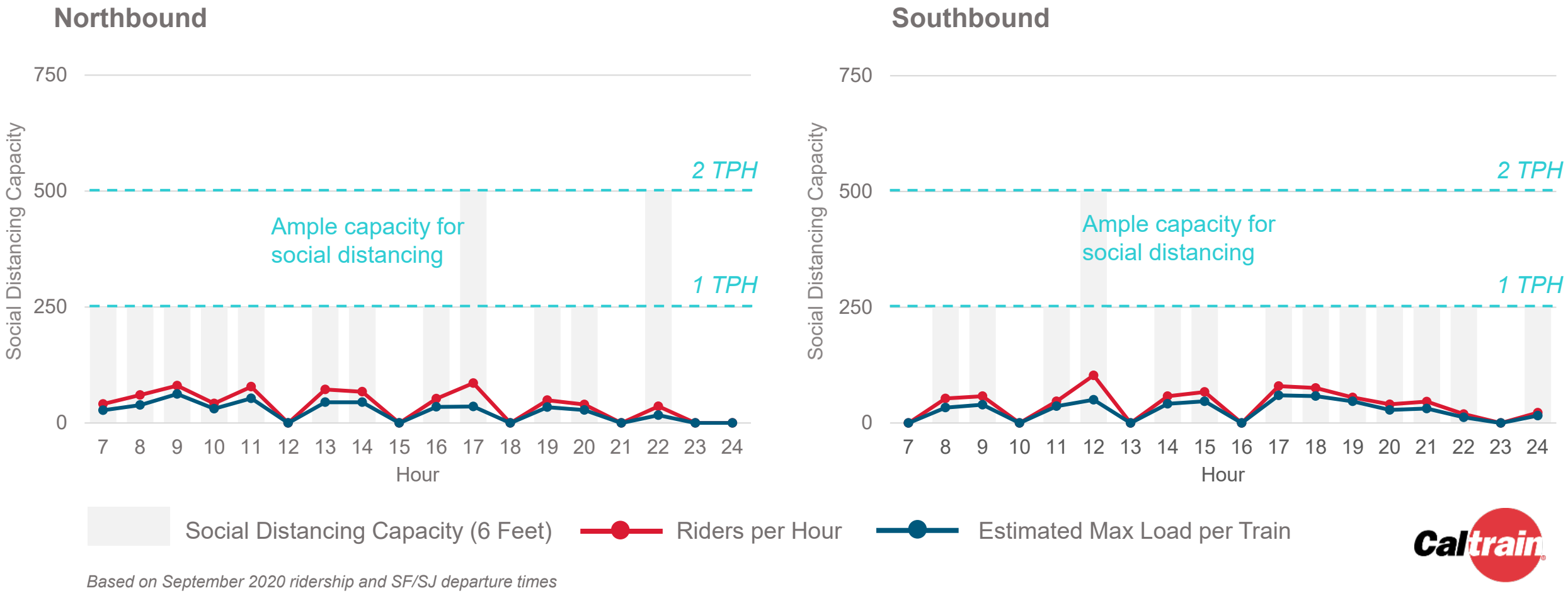
Ridership by Train Type

Service Type	2018 Riders per Train	Sept 2020 Riders per Train
Weekend Local	575	95
Weekend Bullet	542	79

Based on 2018 counts and September 2020 counts. Local comparison for service 8am-8pm.

When are Riders Traveling on Weekends?

Average Weekday Ridership vs. Social Distancing Capacity

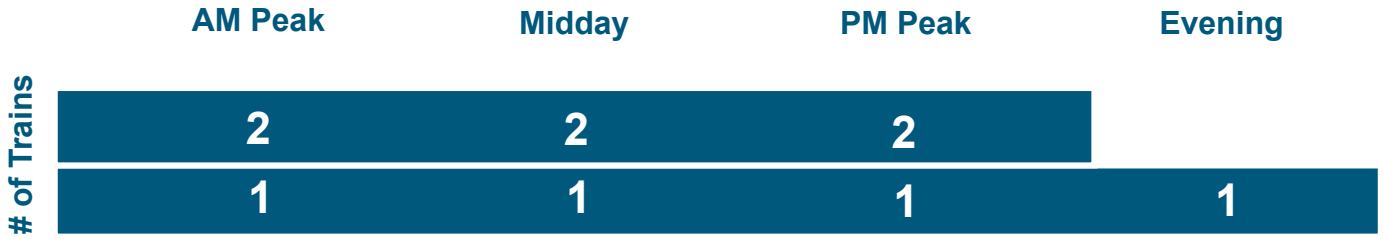


Based on September 2020 ridership and SF/SJ departure times

Base Service Plan

Recommended Base Service Plan

68 Trains/Weekday



Weekend

Hourly Service All Day (28-32 Trains/Day)

2 Trains per Hour, Per Direction – All Day

Caltrain would provide 2 trains per hour per direction in the peak- sufficient to meet demand. By expanding service to 2 trains through the midday period, Caltrain can better serve unmet needs of essential workers and lower income riders.

Hourly All-Day Weekend Service

Caltrain would increase weekend service to hourly frequencies to better serve weekend riders, especially essential workers and low-income riders.

Why Two Trains?

Caltrain has focused on maintaining at least two trains per hour during as many time periods as possible. Running at least two trains per hour, per direction provides several key benefits:

30 min frequency at higher demand stations

Reasonably competitive travel times

Coverage to all stations

Timed connections to every BART train at Millbrae

A Framework For Service

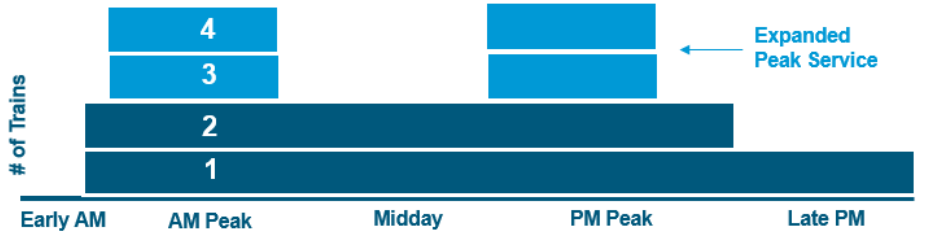
Ridership is not expected to fully recover in 2021. Depending on public health conditions and the railroad's finances, Caltrain may need to make further service adjustments including scaling service levels up or down to meet changing needs.

An Expanded Service Plan could restore service back to 92 trains per day.

An Austerity Service Plan could reduce service to as little as 44 trains per day and suspend weekend service.

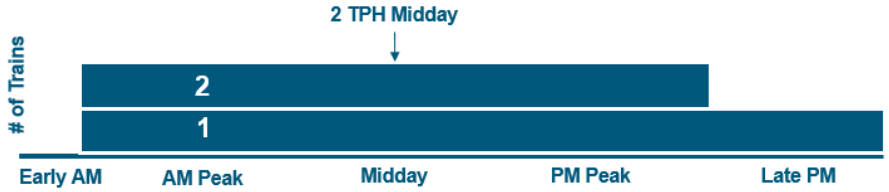
Expanded Service Plan

92 Weekday Trains
28-32 Weekend Trains



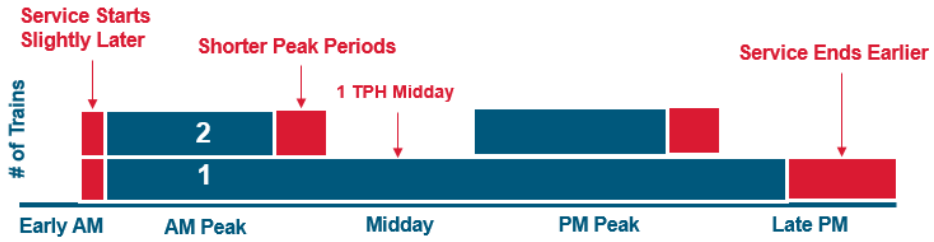
Base Service Plan

68 Weekday Trains
28-32 Weekend Trains



Austerity Service Plan

44 Weekday Trains
No Weekend Trains



Framework for Equity, Connectivity, Recovery, and Growth

Purpose

- Policy document that builds on work completed in the Business Plan
- Provides guidance to help the railroad navigate implement needed changes and guide near- and mid-range planning
- Addresses pressing equity and connectivity concerns

Equity in the Caltrain Context

- Caltrain defines equity in terms of equal access to both benefits of the system as well as the fair distribution of impacts.
- Rail corridor has been active for over 150 years, and both historically and currently, race and class have played an outsized role in defining where harmful disparities in access and impacts are most concentrated - in poor, minority communities.
- Age, gender, disability, and English proficiency can also expand or constrain access opportunities.
- Framework builds on existing policies and efforts and outlines key steps toward reversing these disparities by focusing railroad resources and attention toward those most harmed by a lingering legacy of racism and discrimination
- Equity is consciously paired with policies related to connectivity, recovery and growth because equity principles need to be foundational and integrated into how the railroad evolves and achieves its Vision

Framework for Equity, Connectivity, Recovery, and Growth

Guiding Principle:

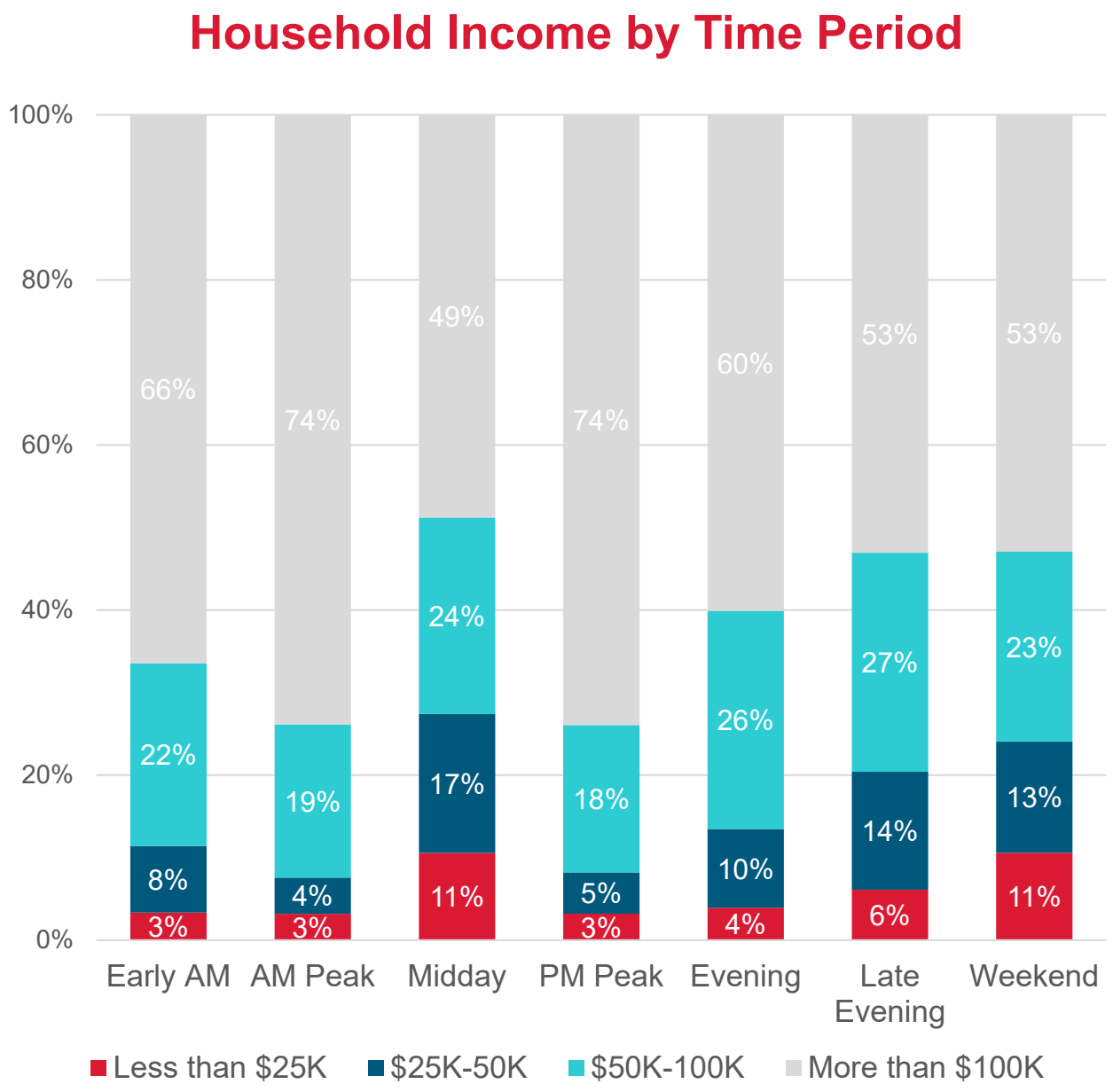
Caltrain shall make a priority of enhancing equity in its system, focusing on the diverse constituency of riders who depend on transit for essential travel and addressing the historical inequities that have caused the rail service to be disproportionately underutilized by lower income riders and people of color.

Equity in Context of Caltrain Service

A) Caltrain Shall undertake service changes and system improvements in a manner that enhances equity and access for historically disadvantaged and underserved groups and communities. This includes:

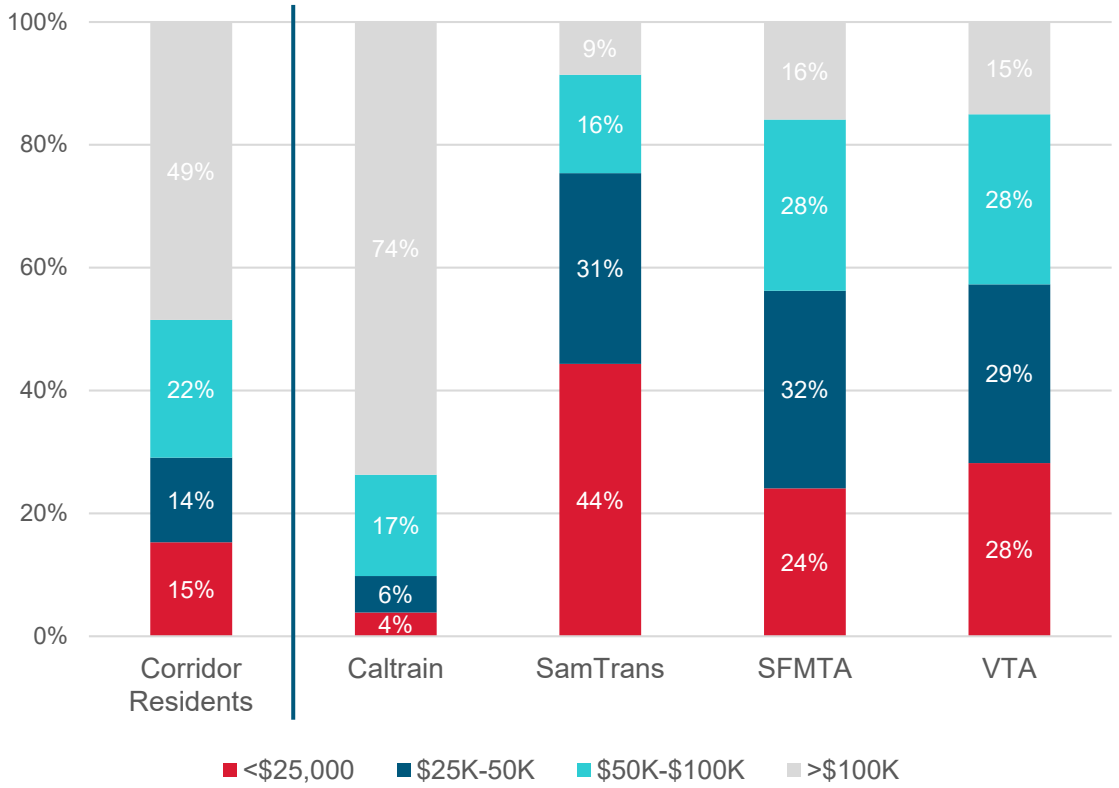
- **Improving midday and off-peak service levels to serve and attract customers who need the system for non-work trips or whose work schedules do not conform to traditional peak commute hours.**
- **Considering social, racial and geographic equity as a significant factor in determining the restoration and expansion of service frequencies at individual stations.**
- Engaging in research, community dialog and planning to understand how best to provide meaningful access and connections between the Caltrain system and historically underserved low-income and minority communities along the corridor.
- Prioritizing the planning and implementation of station projects and system enhancements that will expand and facilitate access for riders with disabilities.
- Undertaking planning to improve Caltrain station access facilities most heavily used by low-income riders, including bus stops, bicycle parking, pick-up/drop-off areas, and walkways.

Midday, Late Evening, and Weekend Service Serve a Higher Share of Low-Income Riders

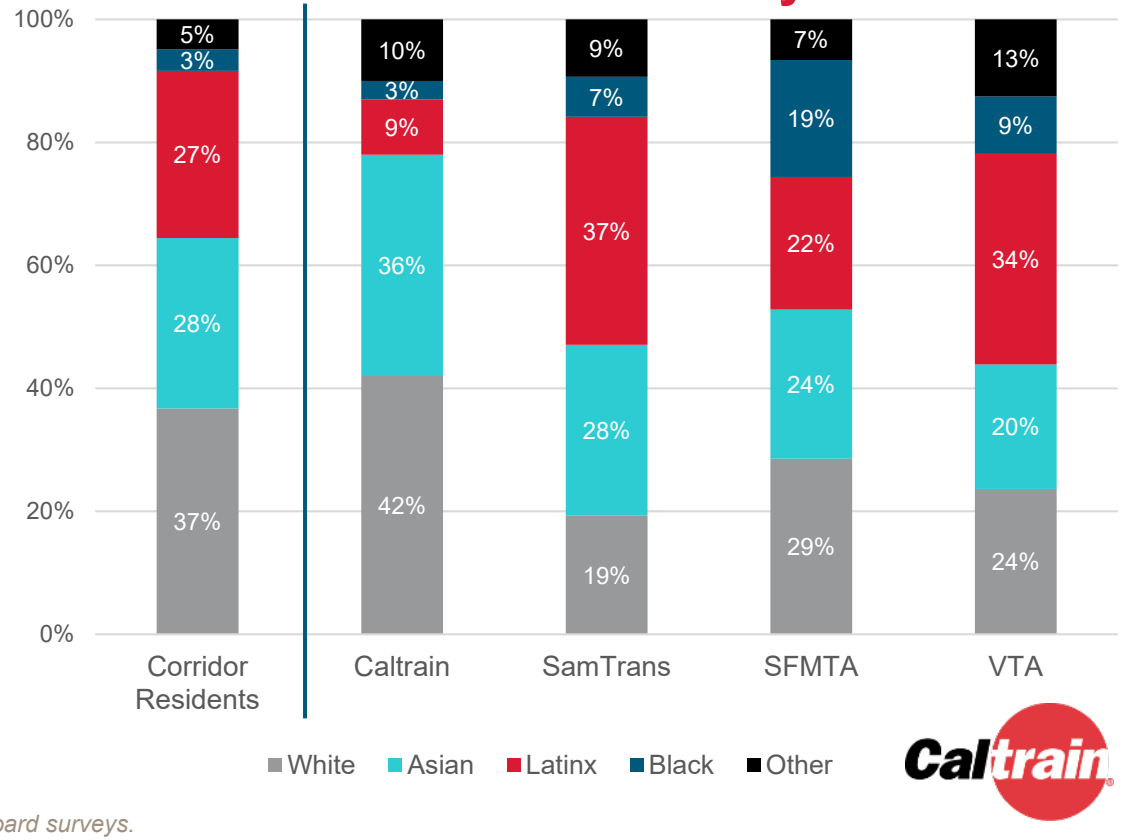


Parallel Routes Proportionally Serve More Low-Income Riders and People of Color than Caltrain

Household Income

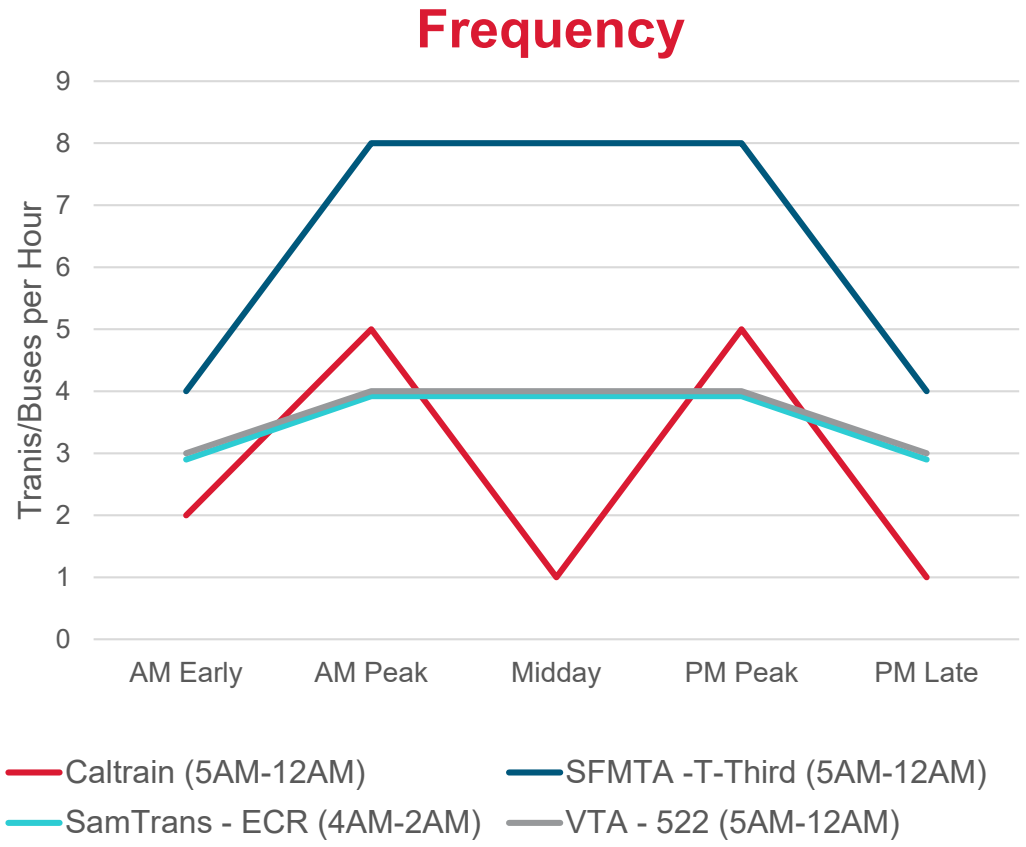


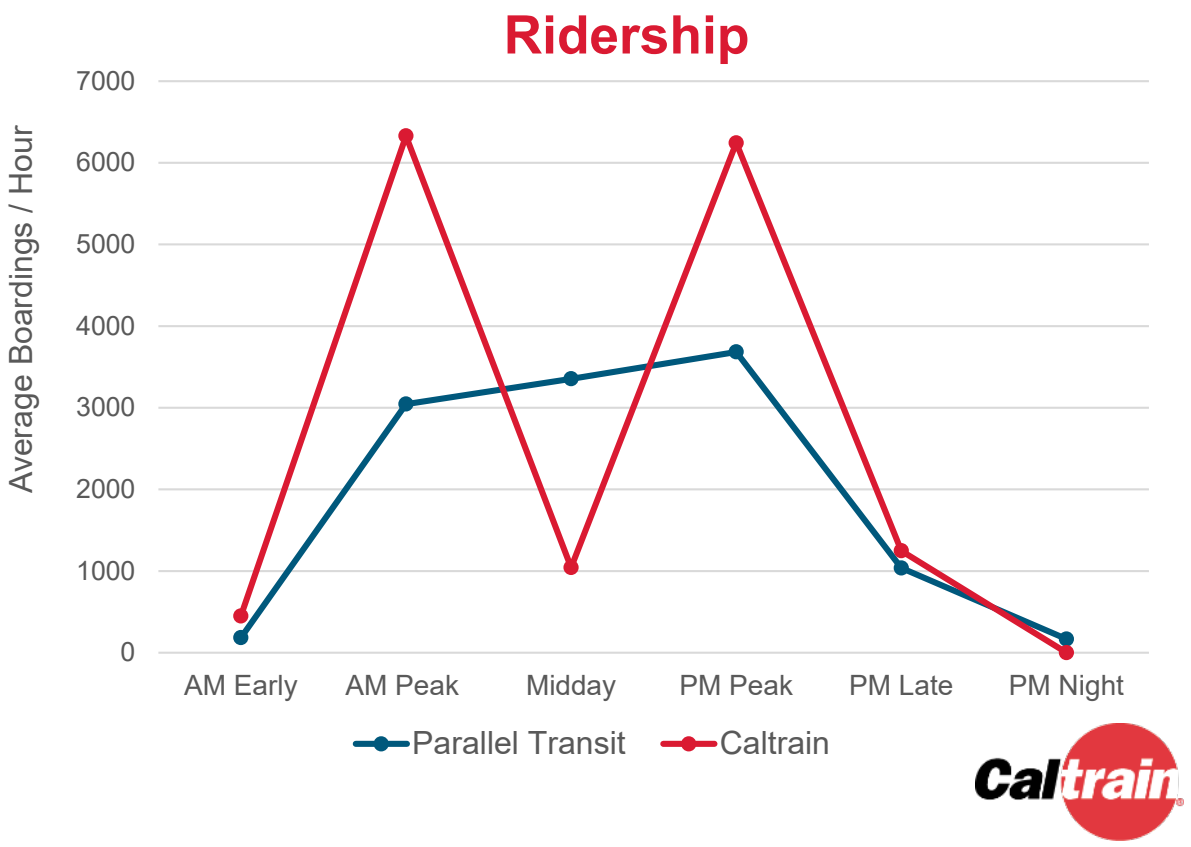
Race/Ethnicity



Source: U.S. Census, American Community Survey 2017, Caltrain 2019 Triennial Survey, SamTrans, SFMTA, and VTA on-board surveys.

Parallel Transit Has More Frequent All-Day Service & Serves More Midday Riders



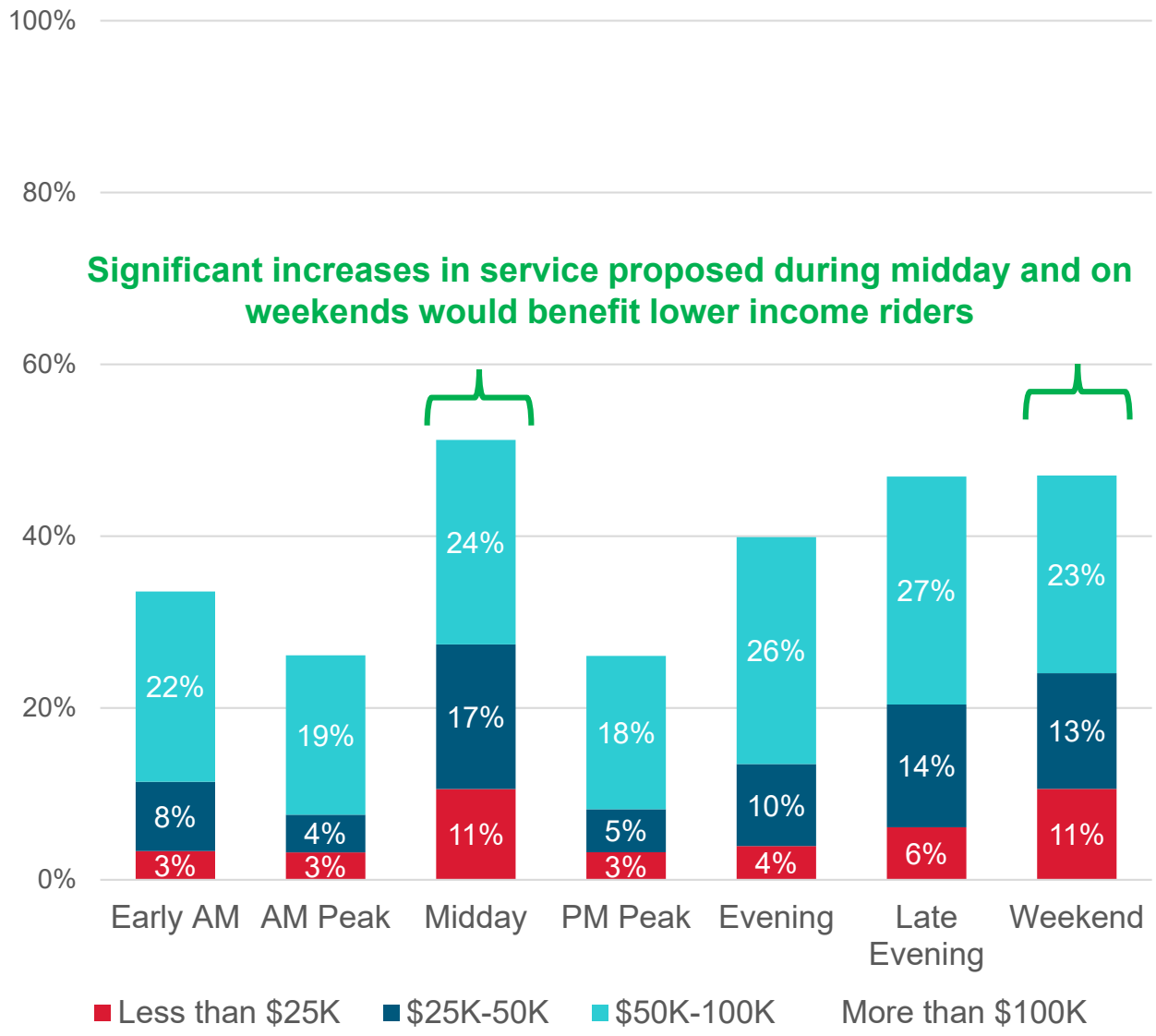


Equity Implications

The Base (and Expanded) service plans expands service in a manner that supports the observed travel patterns of low-income riders who rely on Caltrain and enacts key service components of the Equity, Connectivity Recovery & Growth framework.

- Service frequency would double during midday periods and passengers will no longer need to rely solely on local trains
- On weekends, service would increase to hourly (a 50% increase in frequencies)
- Service span is maintained

Household Income by Time Period



Equity Implications

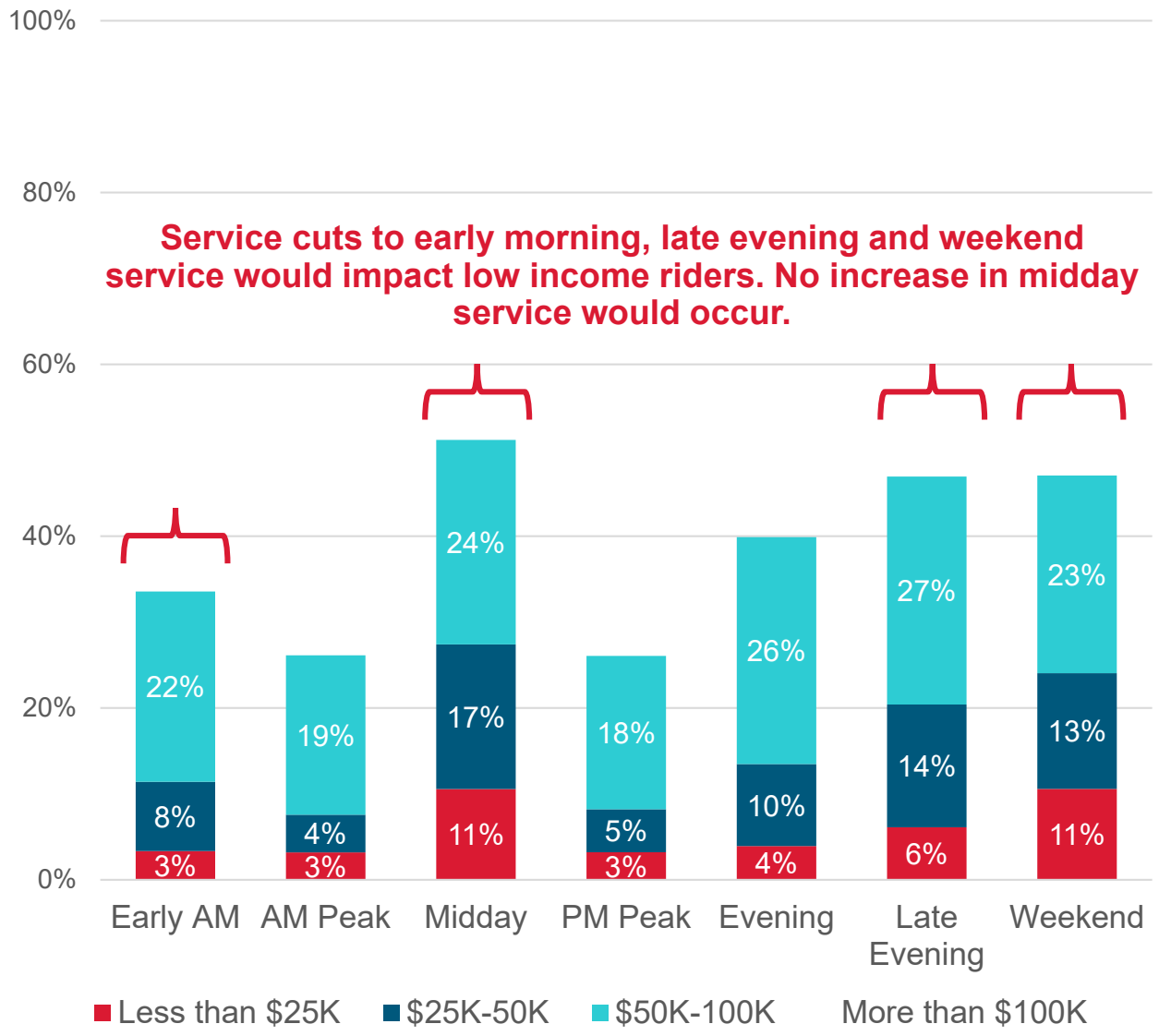
The Austerity Service Plan represents a minimum viable level of service for the railroad.

It would not provide equity benefits and cuts would impact low income riders.

- Suspending early morning, late evening, and weekend services would substantially impact lower income riders
- Midday service would not be improved

The Austerity Plan is not recommended.

A potential intermediate level of service reduction (between the Austerity and Base plan) could look at initially cutting either weekday or weekend service.



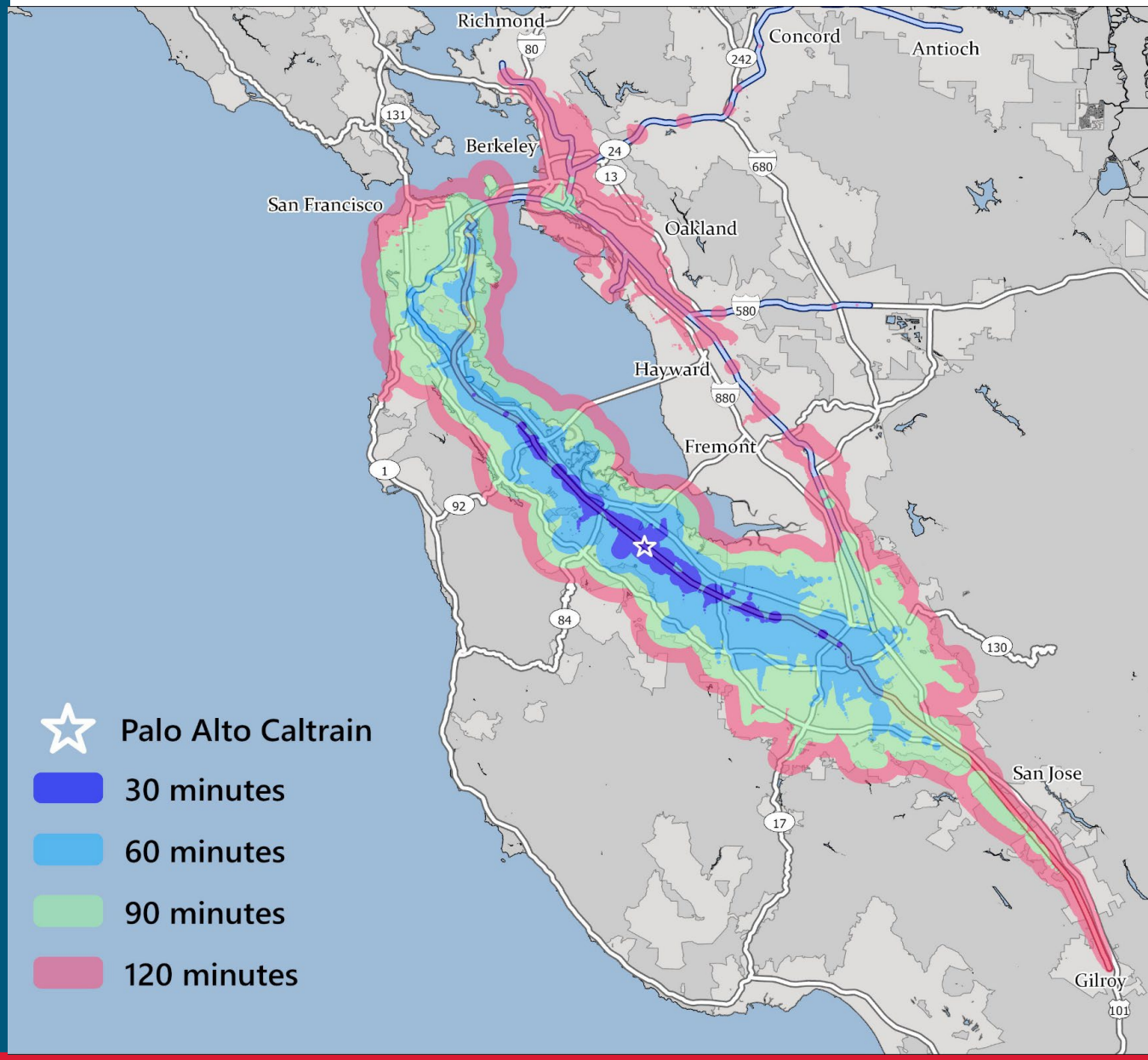
Shutdown Considerations

While the Austerity plan is not recommended and would have significant equity impacts, it remains a strongly preferred option relative to shutting down the railroad

The map at the right shows how far a person could travel by transit during a weekday peak-hour starting at the Palo Alto Caltrain station (currently the busiest station in the system).

This map assumes the 2 train per hour peak service included in both the Base Caltrain plan and austerity plan.

Regional Access by Transit from Palo Alto with Base 2tph Caltrain Service Plan



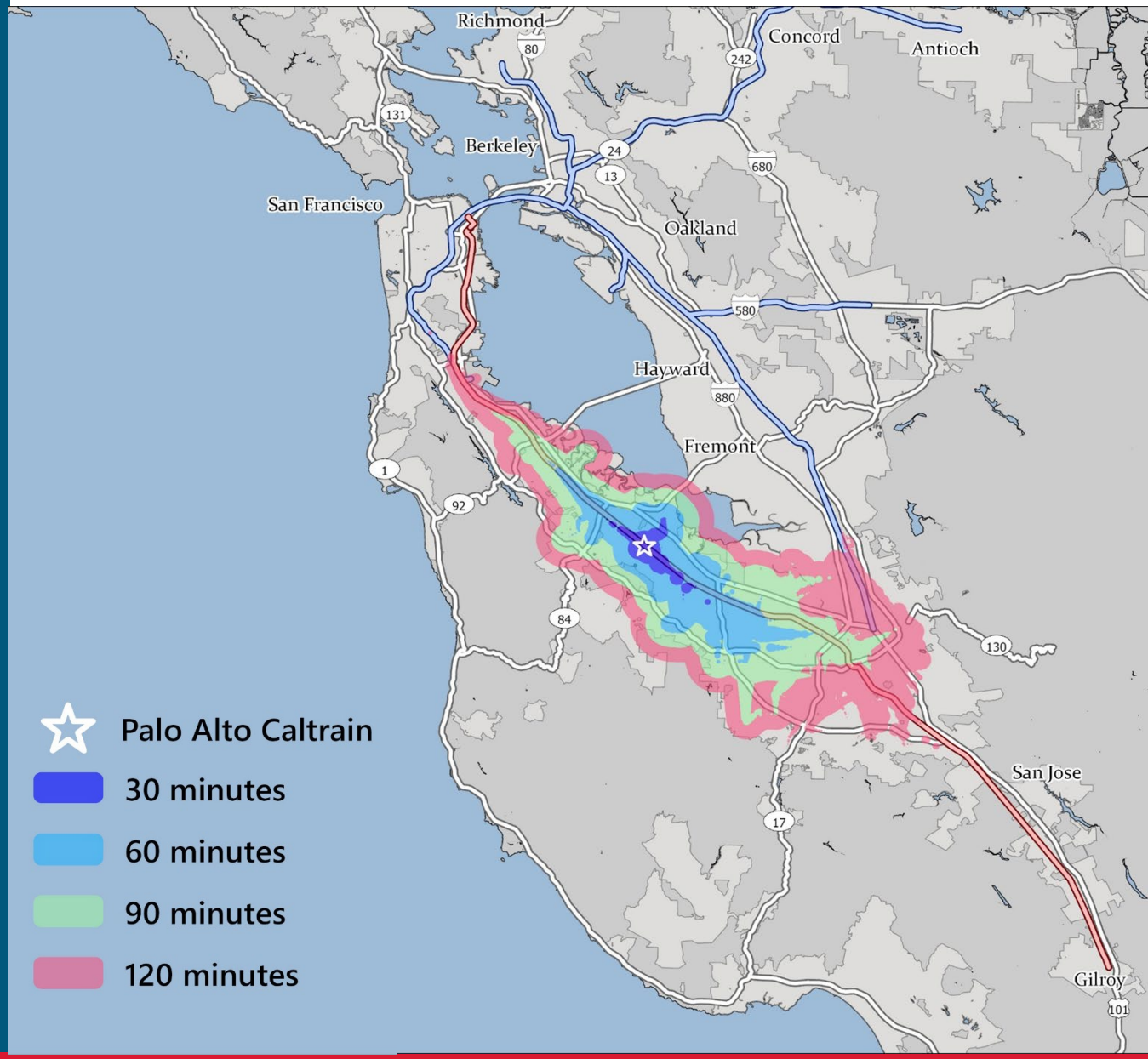
Shutdown Considerations

The map at the right shows how transit access for Palo Alto Station would change if Caltrain were shut down and passengers only had access to bus and connecting services. The table below quantifies the loss of access to bay area residents within a 60-minute travel shed.

	60 Minute Travel Shed		
People Served	**Proposed Base Service Pattern**	**Service Shut Down**	**% Difference**
Population	1,390,000	488,200	-65%
Jobs	955,100	294,000	-69%
Low-Income	280,500	84,400	-70%
Non-White	878,300	282,800	-68%
Car-Free	100,300	31,000	-69%

Demographic data from 2018 American Community Survey

Regional Access by Transit from Palo Alto with Caltrain Service Shut Down



Service Details

Service Options

Operating two trains per hour per direction, Caltrain has two basic service options that fit the corridor:

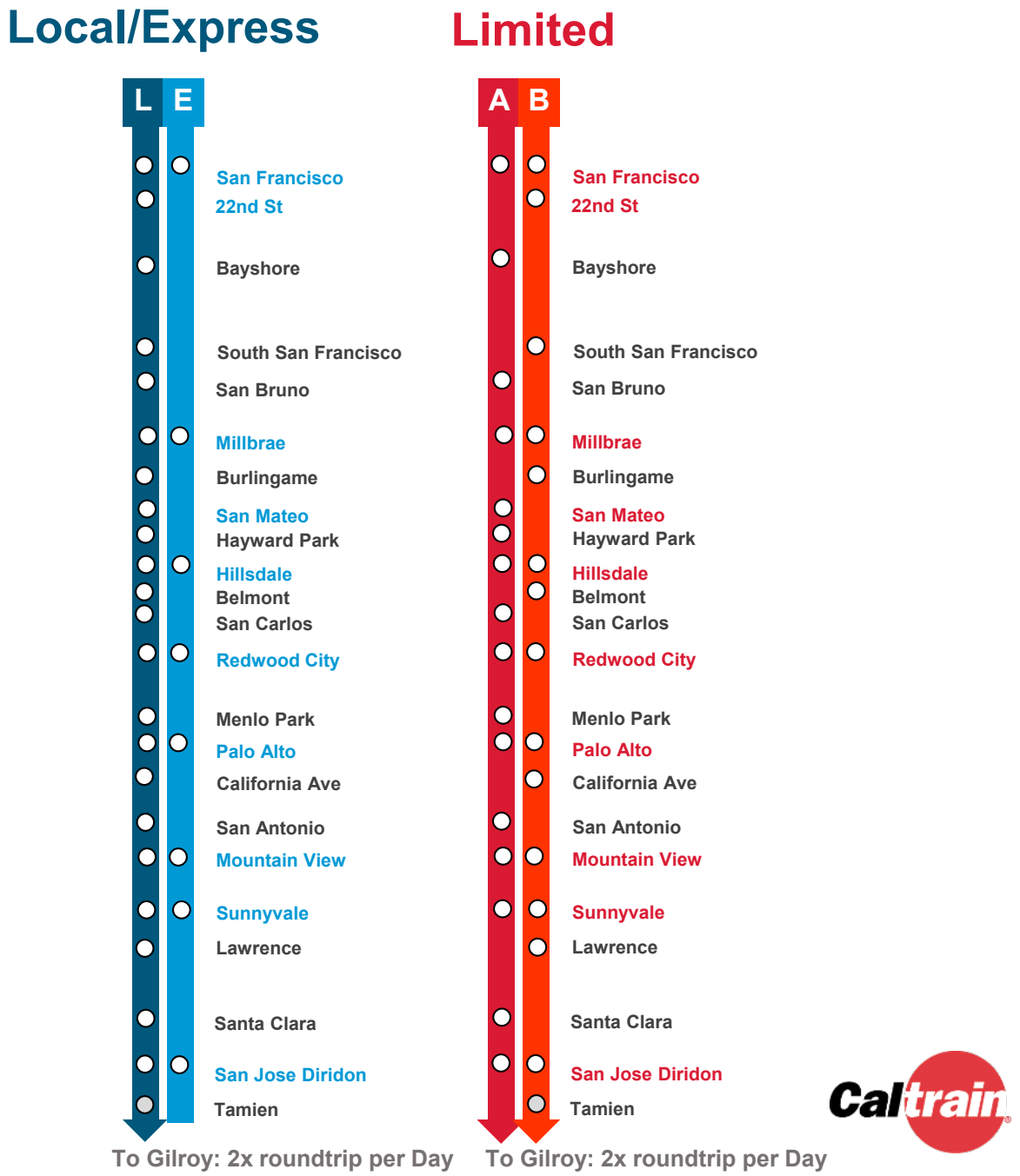
Local/Express Pattern

- One express train and one local train per hour
- 9 stations receive two stops per hour, *but headways vary between 10 and 50 mins*

Limited Pattern

- Two limited stop trains running at similar travel times in a skip-stop manner
- 9 stations receive two stops per hour *at even 30-minute headways*

Stopping patterns shown are preliminary recommendations and subject to change



South County

Ridership south of Tamien is currently at roughly 50 passengers per day. Proportionally, this mirrors the ridership decline for the system as a whole.

Overall recommendation is to provide two roundtrips per day south of Tamien – this maintains the current level of service

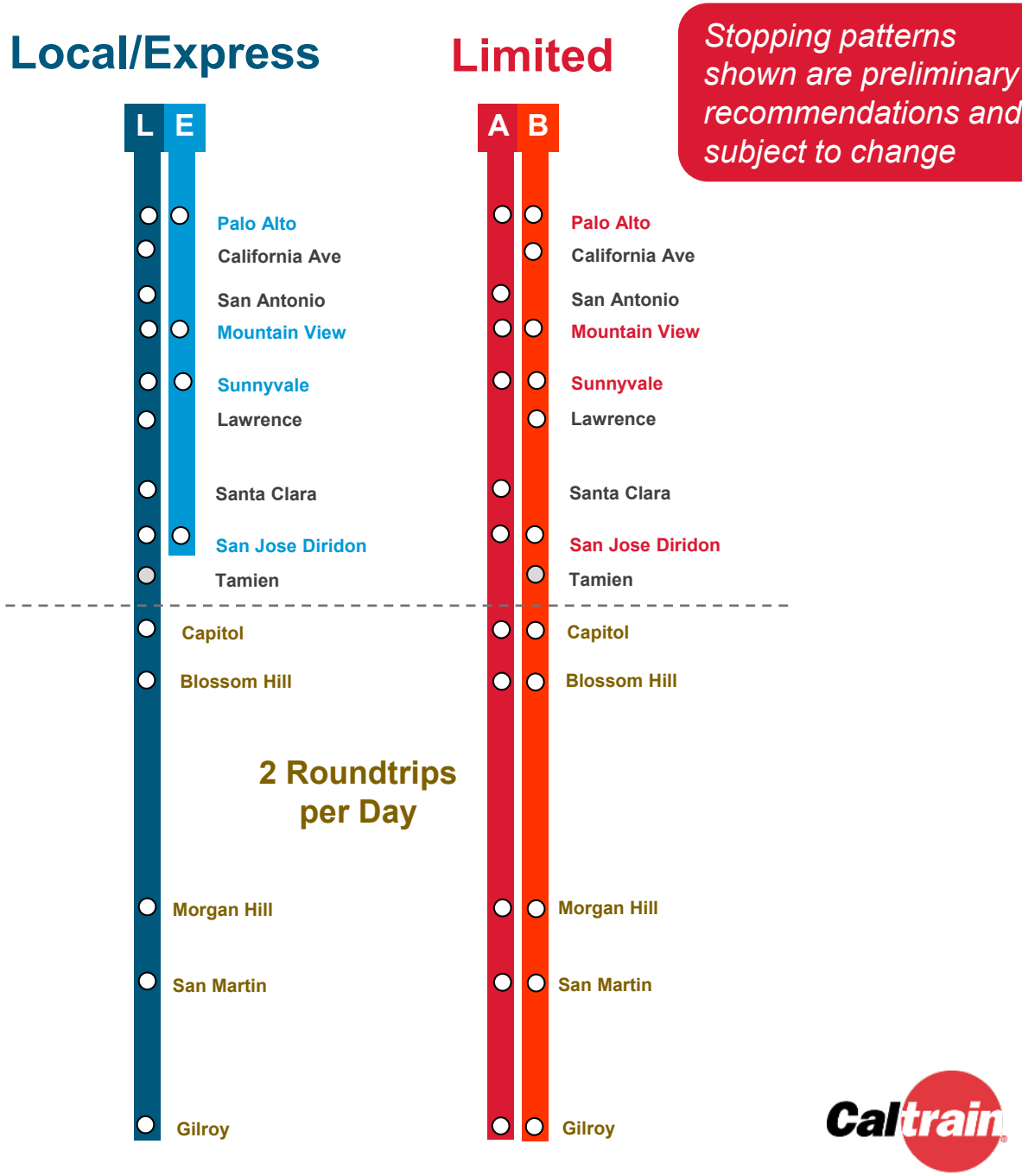
South county service would be increased as ridership recovers - up to an eventual 4 roundtrips per day.

Local/Express Pattern

- 2 roundtrips to Gilroy per day
- Local service (most riders are traveling within Santa Clara County

Limited Pattern

- 2 roundtrips to Gilroy per day (one on each pattern)



Travel Markets & Equity

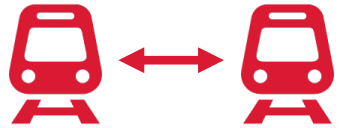
Recommended stopping patterns were developed based on a number of factors including, historic ridership patterns, observed use of the system during the pandemic, and ECRG policy goals related to enhancing equity and connectivity.

COVID-19 Ridership Counts and Surveys

2019 Ridership & Triennial Survey

Equity

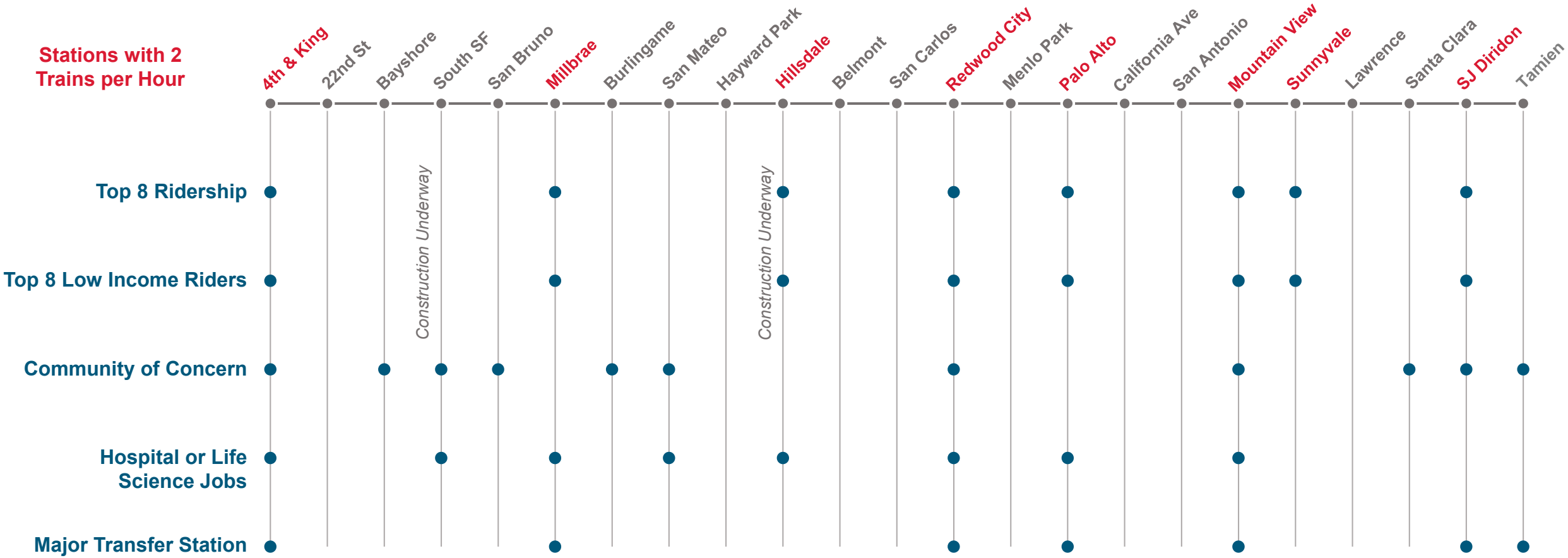
Essential Workers



Connectivity to other transit systems

Travel Markets & Equity

Stopping patterns shown are preliminary recommendations and subject to change



Service Characteristics: Comparison

Similarities

Markets & Equity

Both provide 2 trains per hour throughout the day at stations serving high ridership volumes – especially those serving low income riders and essential workers

Both provide hourly service at all other stations and on weekends

Both provide 2 daily roundtrips to Gilroy

Differences

Intermodal Connectivity

Both provide timed transfers to BART at Millbrae Station

Both provide standardized, repeating schedules

Limited provides even headways and better opportunities for coordinated transfers at more stations

Local/Express connects all station pairs. Limited does not

Balancing Loads

Limited helps avoid crowding and enables social distancing by maintaining consistent 30-minute headways and balanced loads

Local/Express may result in imbalanced loads and bunched headways of up to 50 minutes

Competitive Travel Times

Limited provides moderately competitive travel times between stations

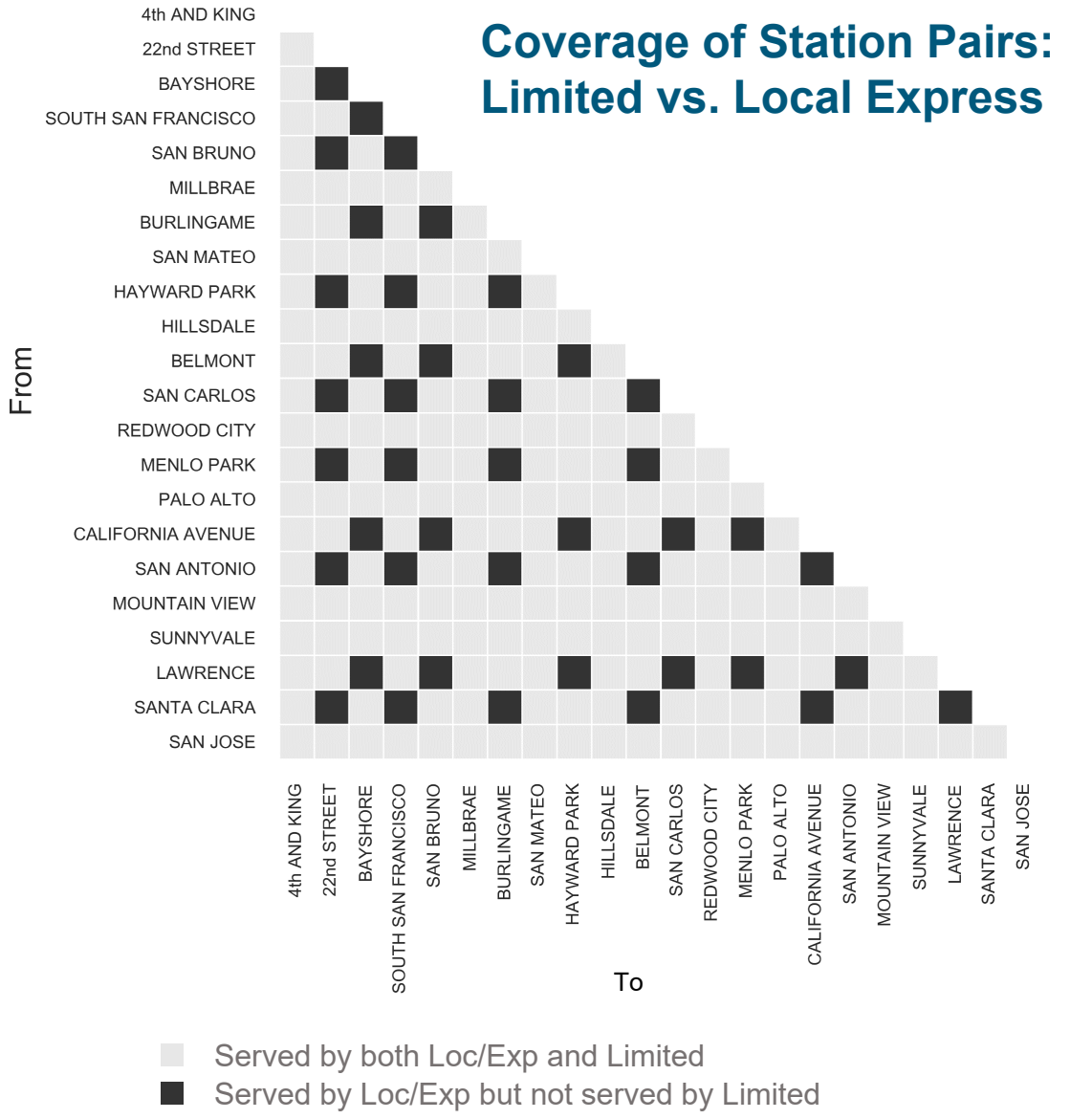
Local/Express provides fast travel times between major stations and slow travel times everywhere else

Coverage Comparison

Prior to COVID-19, Caltrain connected approximately 98% of station pairs, while 3% were not connected.

With the Limited service, 18% of station pairs would not be not connected. However, these station pairs account for less than 3% of pre-pandemic ridership.

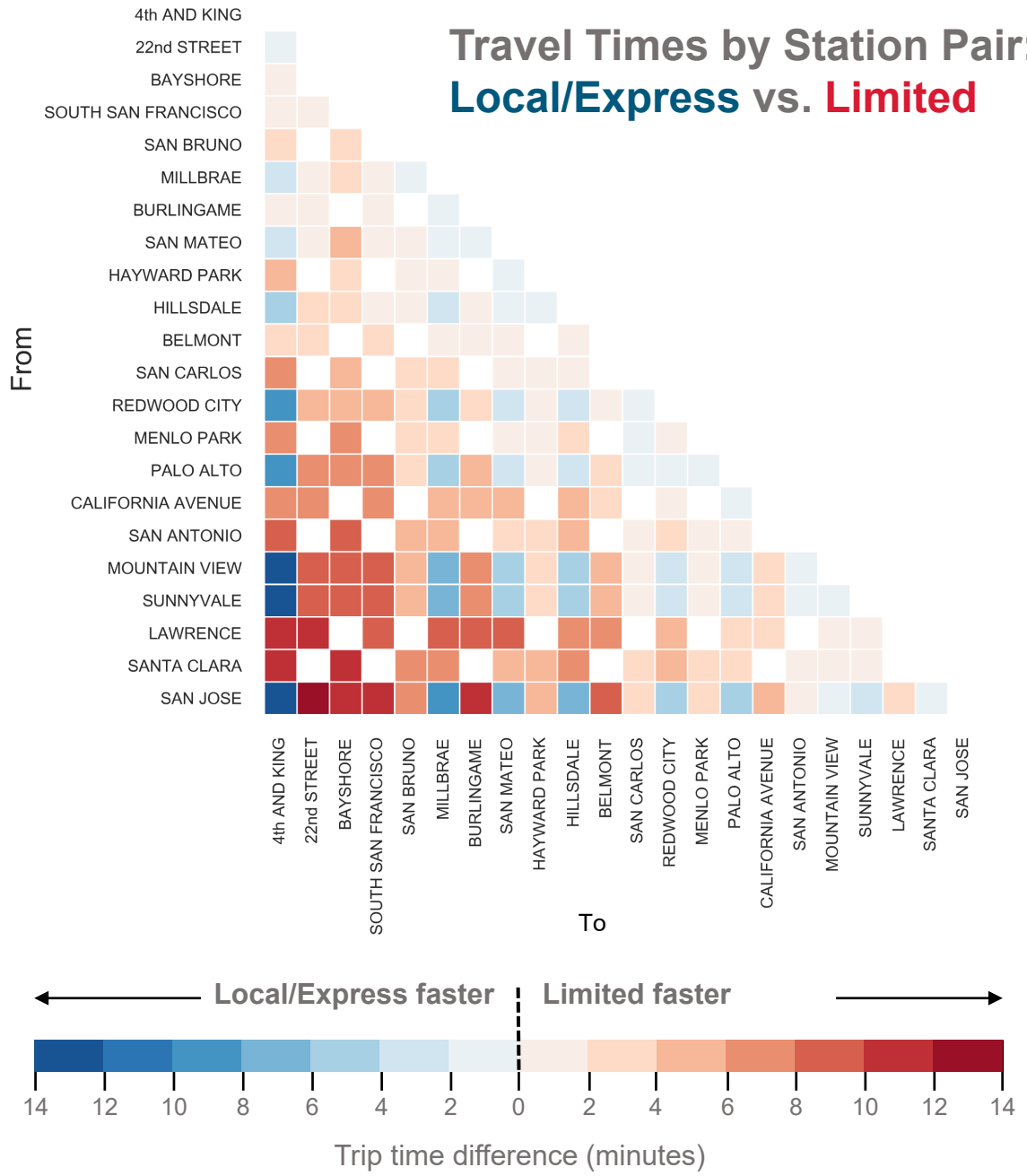
Local/Express would serve 100% of riders and station pairs.



Travel Time Comparison

Local/Express would be faster for trips between major stations, but stations with only local service would have slow travel times.

Limited trains would be faster for all other trips, including trips between minor stations and between minor and major stations.



Sample Travel Times

Travel times shown are preliminary and subject to change

Example Station Pair	Local/Express	Limited
Diridon-4th & King	***65*** or 91	79
Palo Alto-San Mateo	***17*** or 25	21
Diridon-Palo Alto	***23*** *or 32*	27
Menlo Park-Millbrae	29	***25***
Lawrence-Millbrae	53	***45***
San Carlos-4th & King	45	***38***
Palo Alto-4th & King	***41*** or 58	50
Lawrence-4th & King	79	***68***

Fastest Travel Time

Caltrain

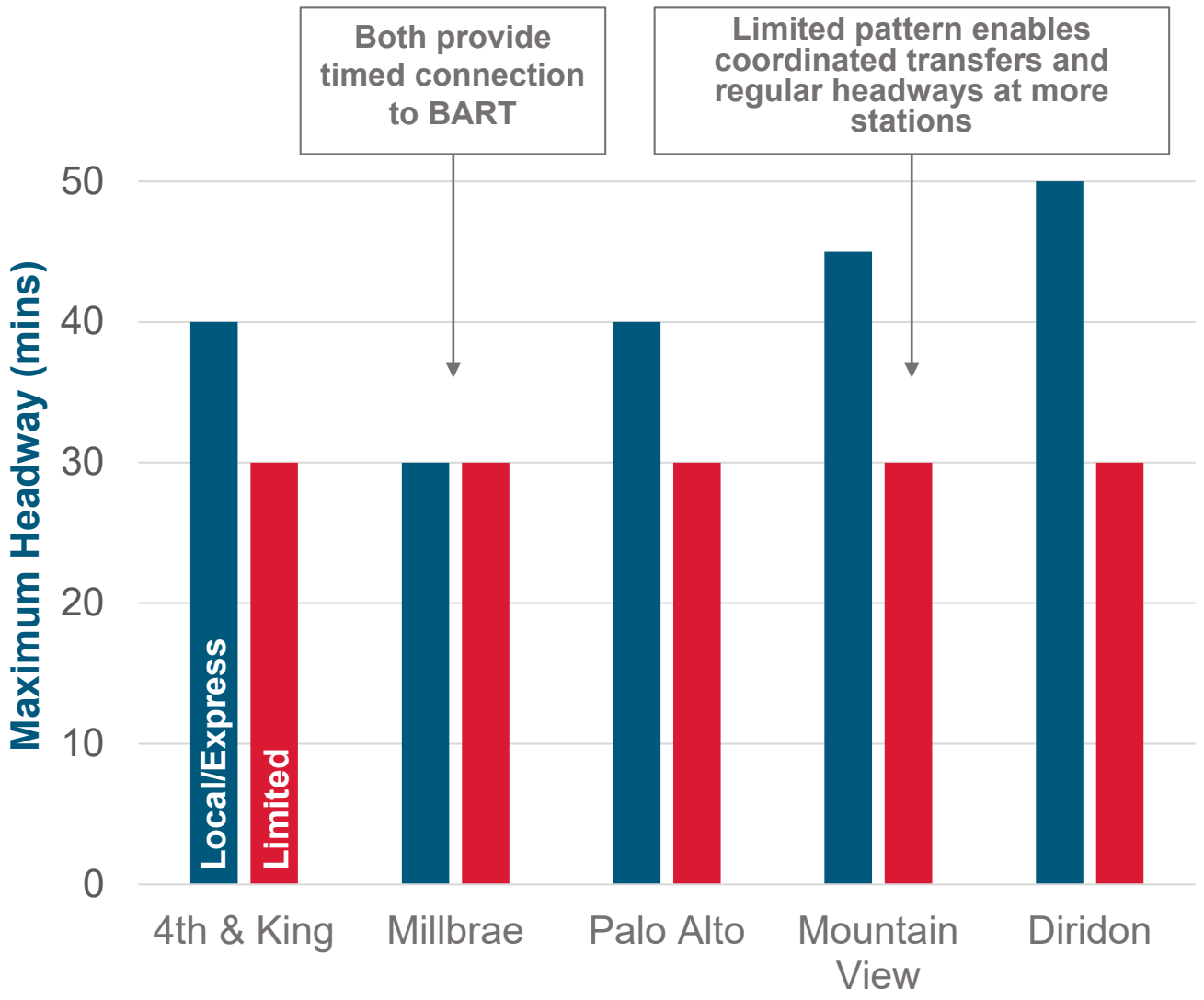
Headways & Connectivity

While both patterns provide two trains per hour, they differ in headways and potential for connectivity.

Both provide timed connections to BART, which will continue to operate every 30 minutes at Millbrae.

The Limited pattern provides 30 minute regular headways at all other stations receiving two trains per hour, enabling more easily coordinated transfers with other frequent transit services.

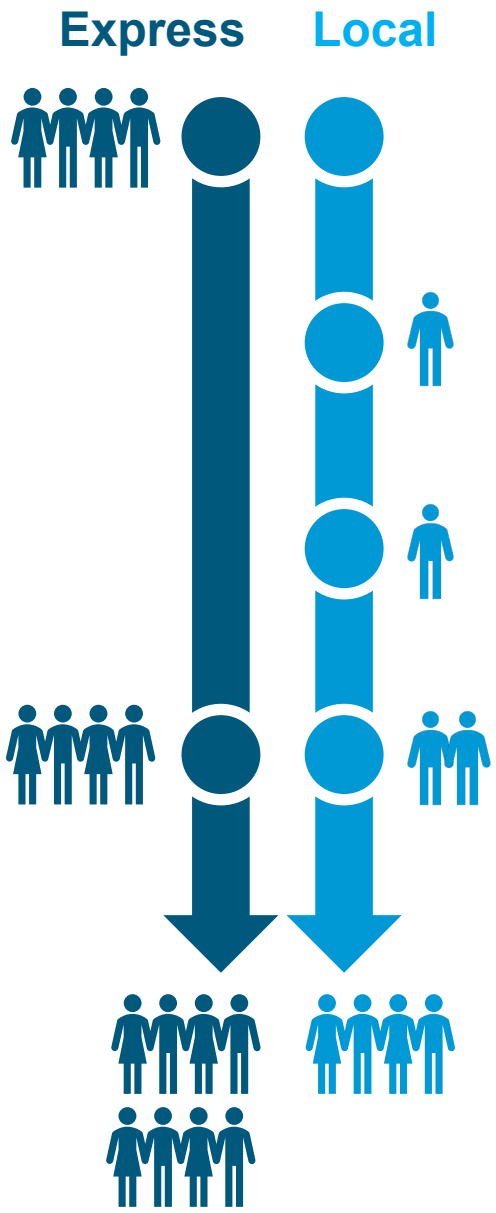
Local/Express provides variable headways of up to 50 minutes, which makes coordinating transfers more challenging.

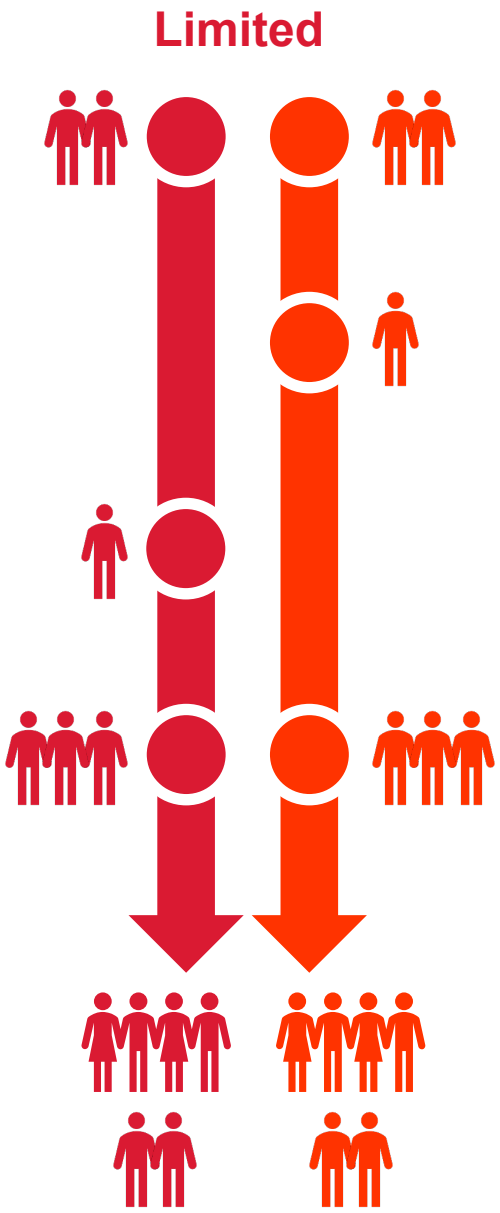


Balancing Passenger Loads & Social Distancing

With Local/Express, bunched headways and differentiated travel times increase the likelihood of imbalanced passenger loads, which could make social distancing more challenging as ridership returns.

Skip Stop balances passenger loads by maintaining even headways and similar travel times.

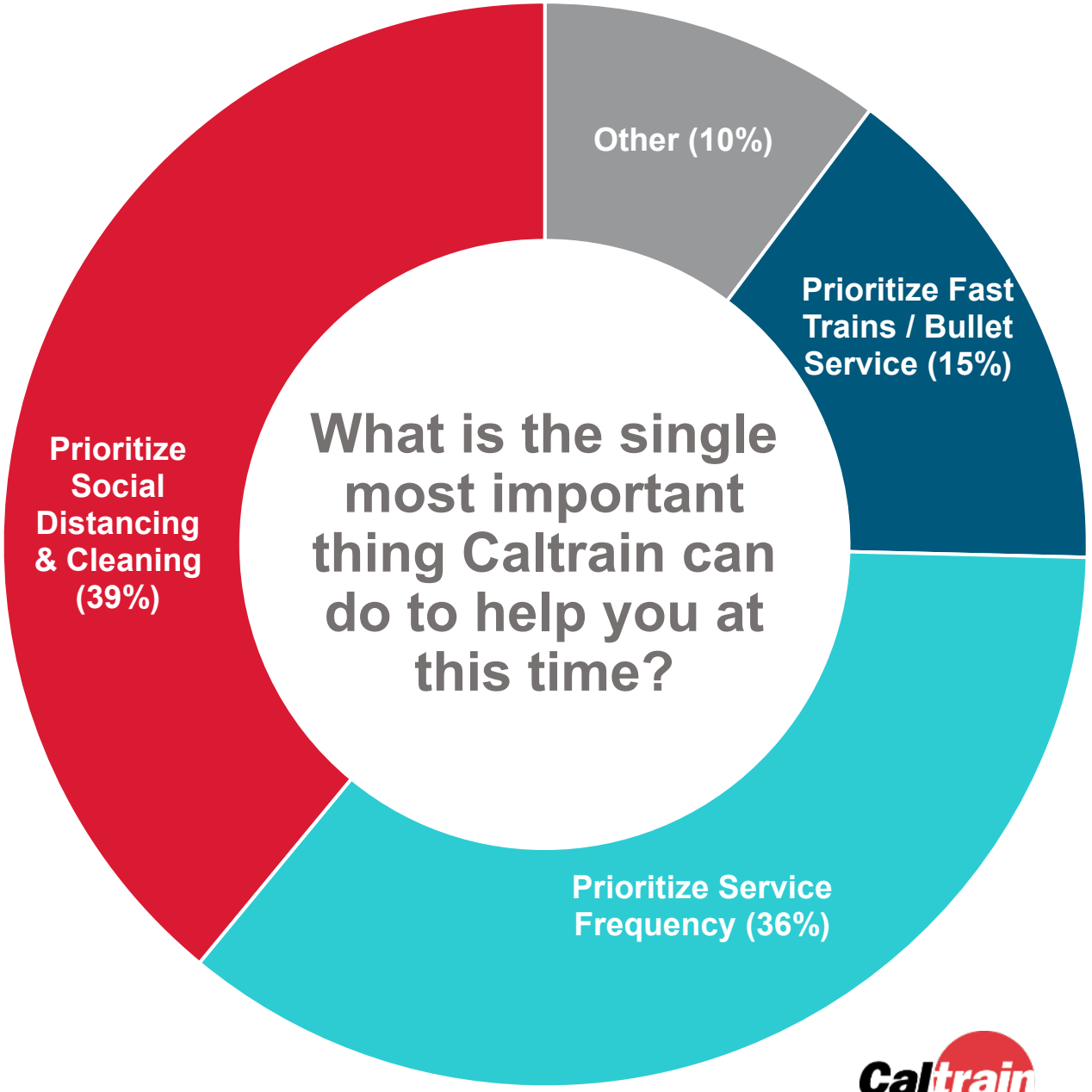




Rider Perspectives

Rider feedback suggest space for social distancing and service frequency are higher priorities than providing faster service at this time.

This feedback suggests a Limited service would better meet the needs of riders.



Source: July 2020 Caltrain Rider Survey

Weekday Recommendation

Operate the Base Service Plan at 68 trains per day with 2 TPH throughout the day

- Serves peak ridership demand
- Responds to midday needs of low-income riders and essential workers by significantly improving midday service
- Provides framework for scaling up or down based on finances and demand

Operate two Limited patterns per hour

- Balances passenger loads to promote social distancing
- Provides regular headways and enables coordinated transfers
- Provides good travel times for all stations
- Provides two daily roundtrips to Gilroy (one trip on each pattern)

Weekend Recommendation

Provide Hourly Local Service to provide 28-32 trains per day (+4 trains over today)

- Better serves ridership demand and promotes social distancing
- Responds to needs of low-income riders and essential workers by increasing service frequency by 50%
- Regular hourly service better enables coordinated transfers with other transit providers
- Maintains construction windows

Suspend Weekend Bullet Service

- Weekend bullet service is scheduled around leisure trips, a market that has been weak during the pandemic. Observed ridership on weekend bullets has been substantially similar to local trains.
- Standardized hourly service benefits weekend riders who are traveling to work or medical appointments

Scaling Down: Austerity Plan

The Austerity service plan would not further equitable outcomes

Cutting service during off-peak periods, shortening peaks and service span, and suspending weekend service would have a disproportionate effect on low-income riders

Rebuilding ridership would be difficult

There is presently not a clear peak period to plan around - Caltrain may need to choose between serving earlier peaks for medical workers or later peaks for office workers

Austerity Plan is not recommended – and remains conceptual only at this time

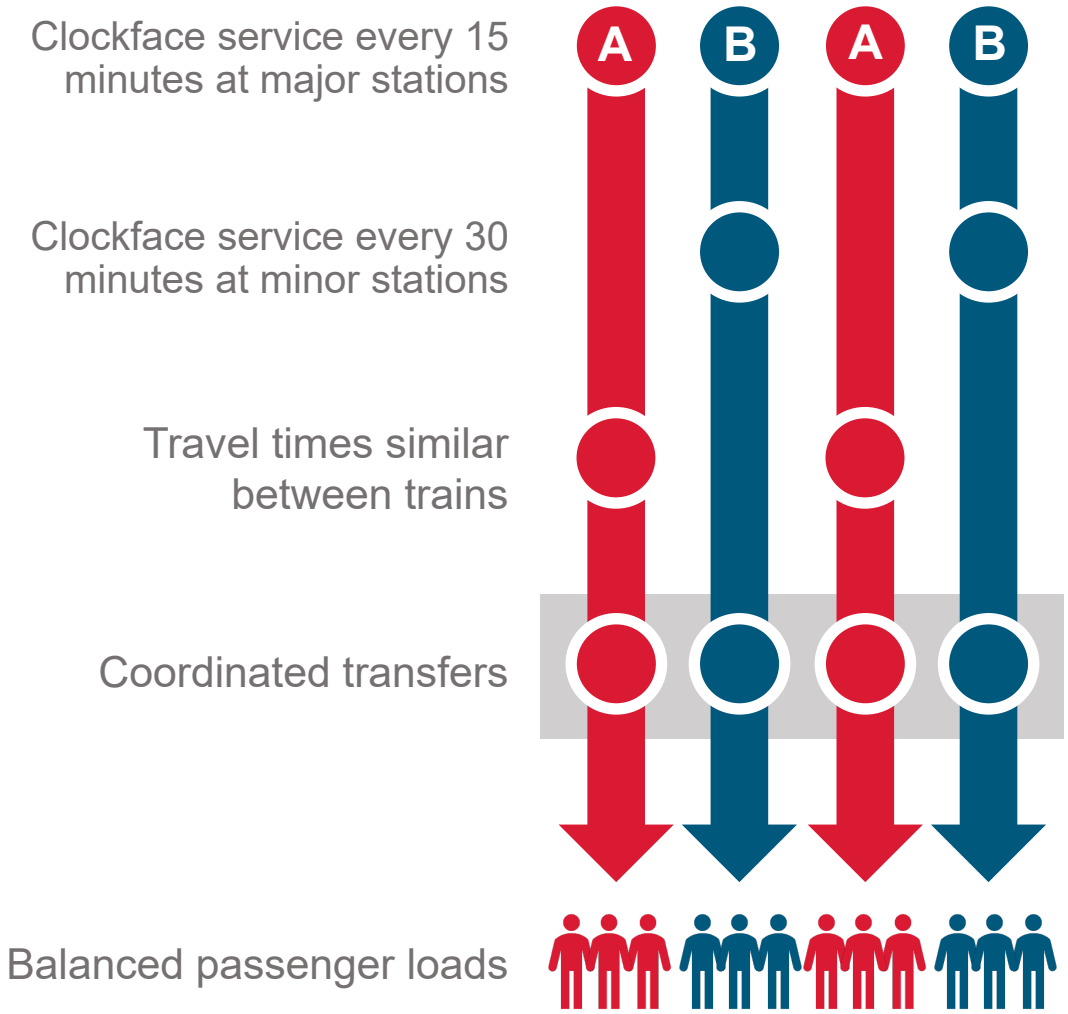
Scaling Up:

There are several options for how Caltrain could scale up service as finances allow and demand returns

Caltrain could double frequency on the two Limited patterns

- All stations would be served at least every 30 minutes during peak periods, with major stations served every 15 minutes
- Travel times would remain similar between patterns
- Maintains coordinated transfers
- Minimal disruption to schedules

Example – Adding service by doubling recommended Base Service Pattern



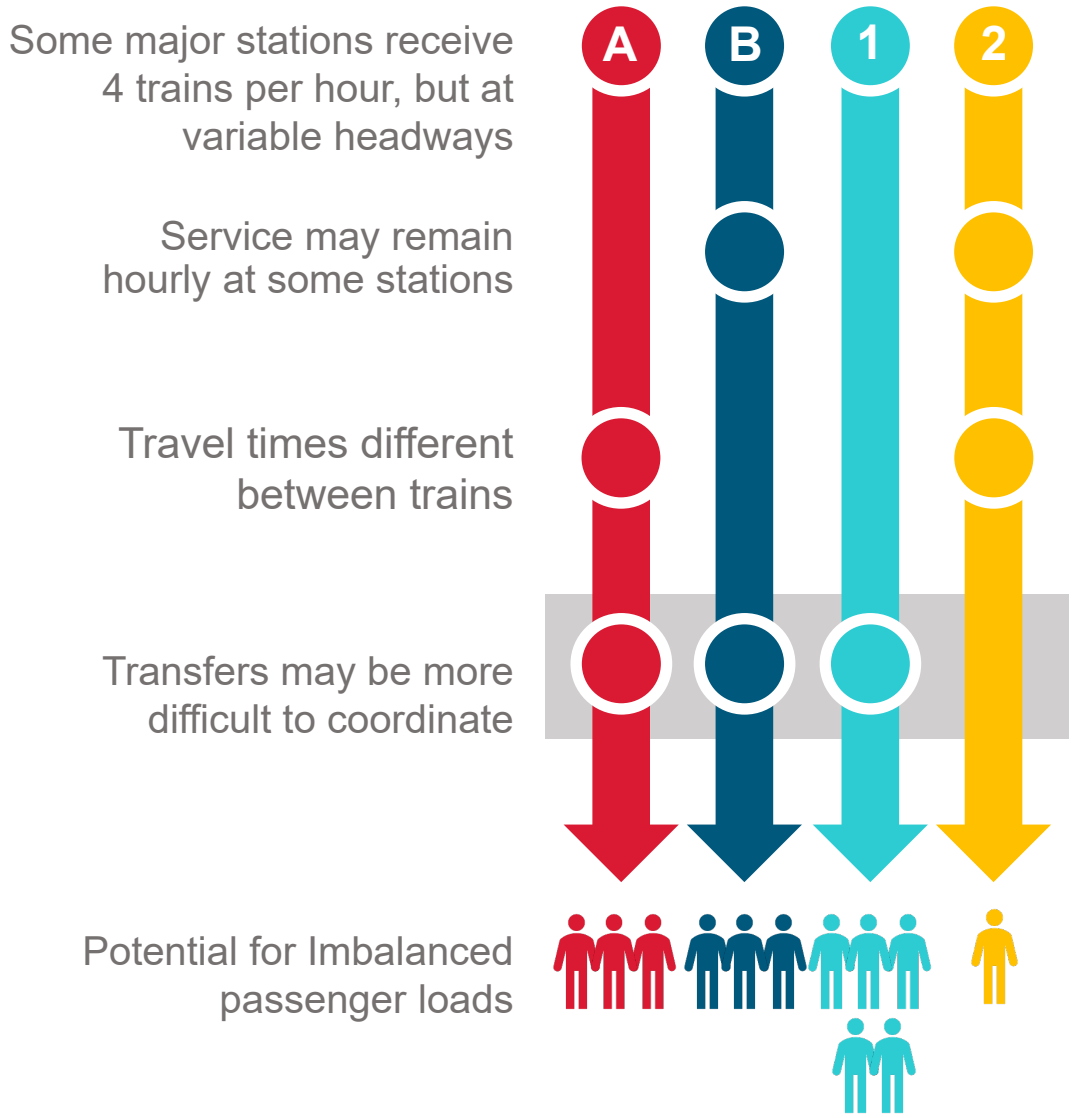
Scaling Up:

There are several options for how Caltrain could scale up service as finances allow and demand returns

Alternatively, Caltrain could reduce travel times by providing fewer stops and more variation in train types – either on added trains or within the service plan as a whole

- Stations could be served by one to four trains per hour at variable headways
- Travel times could decrease, especially between major stations
- Change would involve more significant disruption to schedules and would make aspects of coordination with other service providers more challenging

Example – Adding Service in a more customized pattern



Next Steps

Next Steps: Implementation & Monitoring

The outlined service approach is a staff recommendation based on available data and evidence

The pandemic has created a highly difficult and dynamic business environment for transit – further changes and adjustments will inevitably be needed

Monitoring rider reaction to the new service will be essential to determine what aspects are working well and what may need to change

Implementation

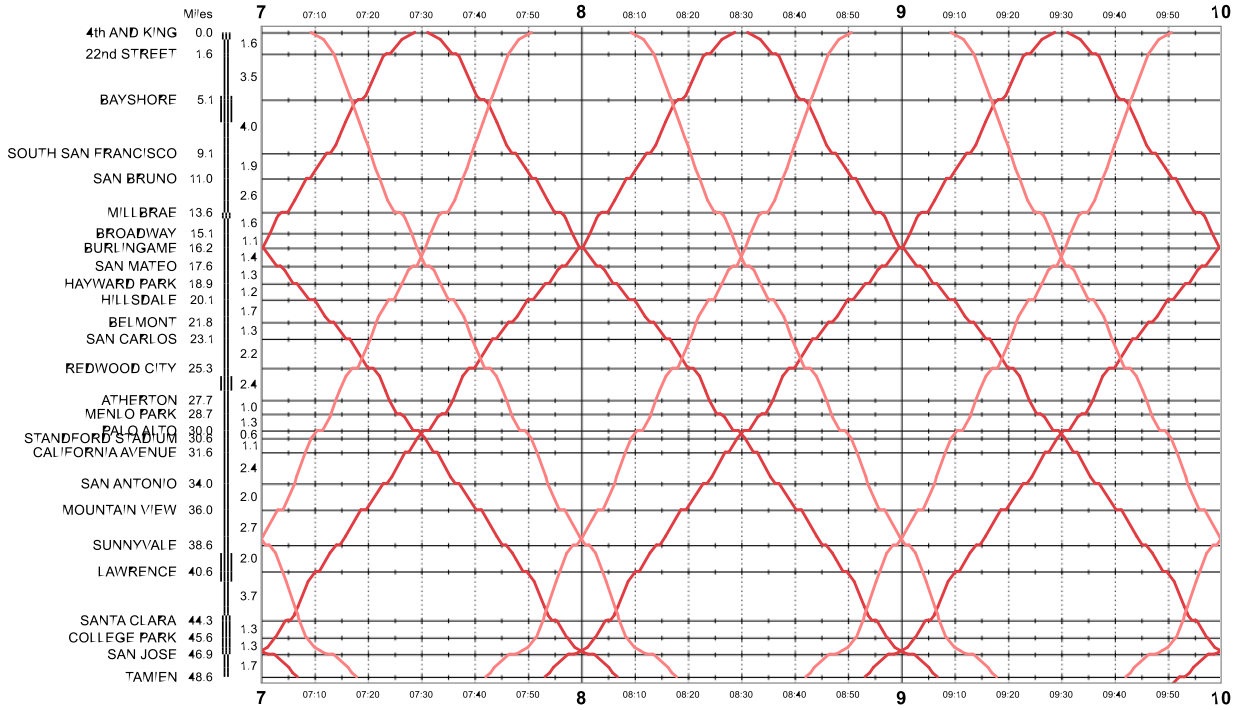
- Continue refinement of schedule and stopping patterns
- Complete financial analysis related to crewing and equipment utilization
- Coordinate with connecting and partner operators (BART, CCJPA, ACE, SFMTA, SamTrans and VTA)
- Solicit feedback from JPB, CAC and other stakeholder groups
- Confirm date for implementation (targeting mid-December)

Monitoring

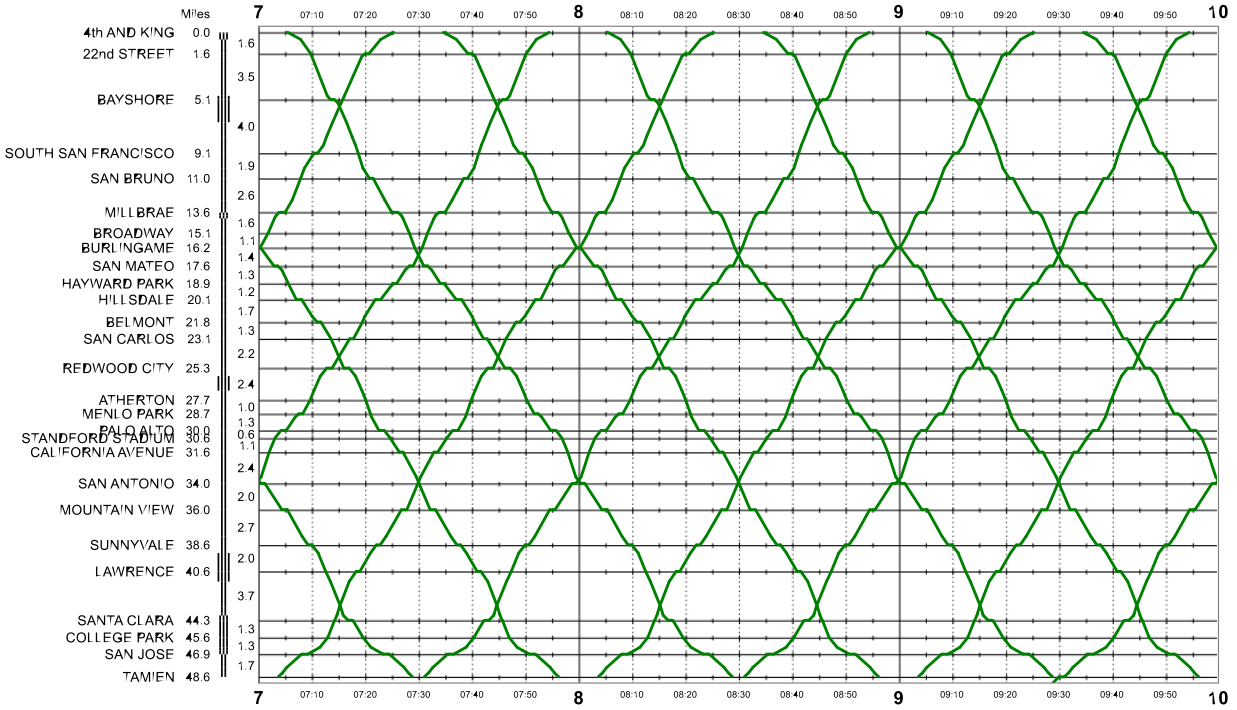
- Develop pre- and post-implementation counts and surveys
- Identify external measures that can be used to calibrate and contextualize ridership outcomes

Appendix: Stringline Charts

Local/Express



Limited



Memorandum

Date: November 19, 2020

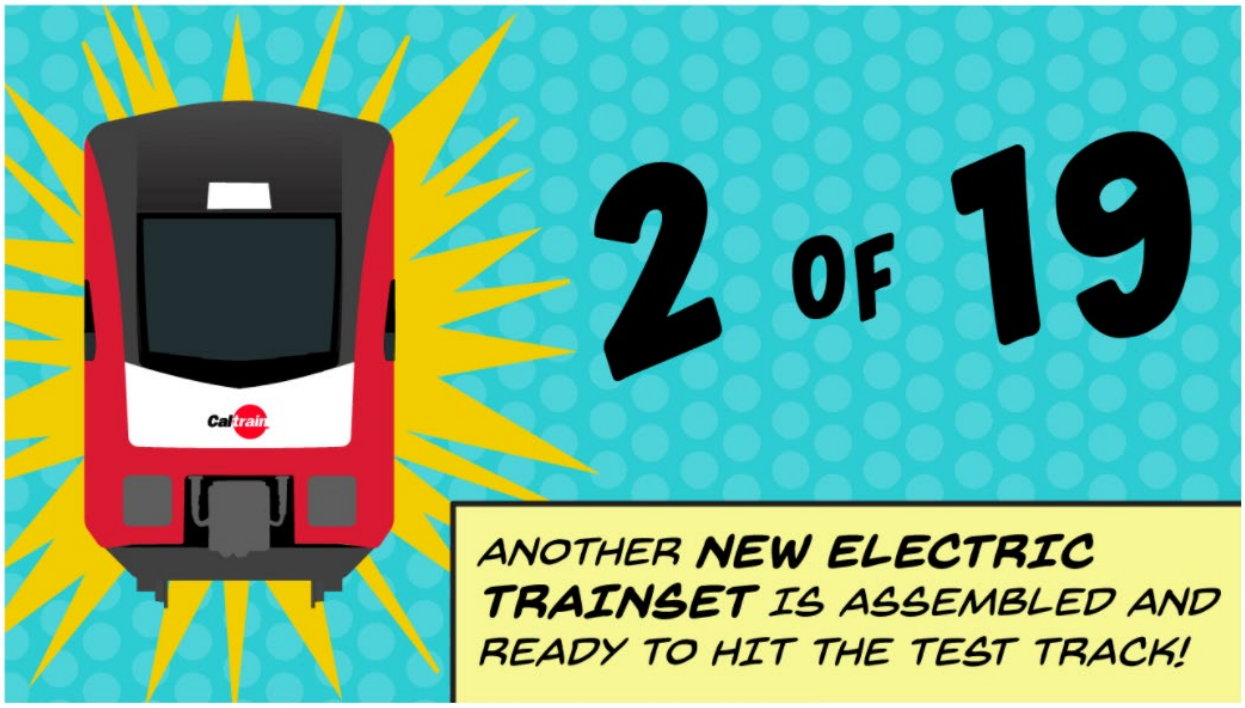
To: CalMod Local Policy Maker Group (LPMG)

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

Re: Caltrain Electrification Project E-Update

ELECTRIC TRAIN UPDATE – TRAIN CARS ASSEMBLE FOR SET #2!

The second electric train set is now assembled, marking a major milestone for the project! Seven cars were coupled together, bringing us one step closer to more environmentally-friendly, fast, and reliable service. This is the second of 19 train sets that will make up Caltrain's new electric fleet.



To see photos of the new electric trains being built, visit CalMod.org/Gallery.

CONSTRUCTION UPDATE:

Construction to make Caltrain a modern, electric commuter rail system continues! This month, crews installed foundations, poles, and wire from South San Francisco to San Jose. Work was also performed on nine traction power facilities in San Francisco, South San Francisco, San Mateo, Redwood City, Palo Alto, Sunnyvale, and San Jose. Here are some construction highlights for the month of October.

- Began installation of pole foundations in Brisbane
- Started construction at Paralleling Station 1 in San Francisco
- Installed steel gantries at Paralleling Station 4 in San Mateo and Paralleling Station 5 in Palo Alto

Installation of steel gantry for traction power station in Palo Alto

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

VIRTUAL TOUR LIVE EVENT – HIGHLIGHTS

In case you missed it, watch highlights from the electric train Virtual Tour Live Event with special guest Congresswoman Jackie Speier. View the train interiors with Caltrain Chief of Rail Michelle Bouchard, then tour the assembly floor in Utah where the actual trains are being built.

Watch the highlights from the event here.

SERVICE & EQUITY CHANGES:

In September, Caltrain adopted its Equity, Connectivity, Recovery & Growth Framework – a significant policy document that outlines Caltrain's approach to recovering from the COVID-19 Pandemic and growing the system in an equitable manner consistent with the larger Business Plan process.

The framework includes specific policies and actions that describe how Caltrain can recover in a way that emphasizes improving equity outcomes on the system and enhancing connectivity to the region's transit network. One of those strategies was to increase off-peak train frequency to better serve riders with nontraditional commute hours and to better synchronize transfers to other transit modes.

To learn more, visit www.Caltrain.com/equity.

PUBLIC MEETINGS:

JPB Board Meeting – December 3 at 9:00 a.m – Please note, this will be remote only

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

DETAILED PROGRESS REPORT:

- September Monthly Progress Report presented to Caltrain Board on November 5, 2020

CalMod

CALTRAIN ELECTRIFICATION

Grade Crossing Activation System Update

Caltrain

OVERVIEW TODAY

- Existing Caltrain grade crossing activation system is Direct Current (DC) based
- FRA requires gates to activate at least 20 seconds prior to the train approaching the crossing
  - JPB requirement is at least 25 seconds
- Grade crossing activation system is a key safety component of the railroad and of an electrified system

OVERVIEW ELECTRIFICATION

- Caltrain Electrification requires Alternating Current (AC) system
  - Cannot have a DC grade crossing system with the overhead contract system which is AC (too much interference)
  - Grade crossings will be modified to AC system
- Balfour Beatty, Inc. (BBI) is responsible for delivering an design-build electrified system with a certified grade crossing activation system
- New Grade Crossing System
  - Design
  - Install
  - Test

TWO SPEED CHECK SOLUTION

- Originated from Association of American Railroads (AAR) typical circuits
- Proposed solution has been developed in coordination with UPRR, FRA, CPUC
- Meets all system safety and regulatory requirements
- Each crossing will need to be individually designed, several already complete

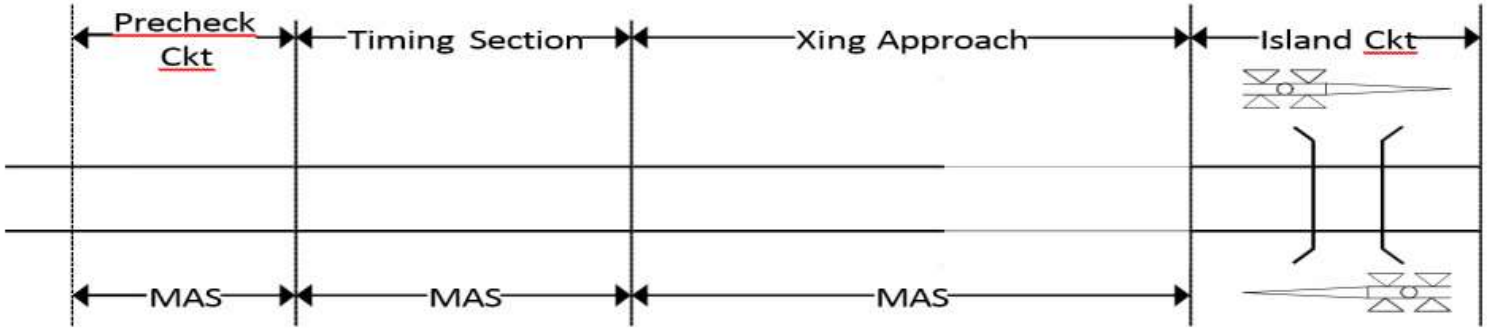
TWO SPEED CATEGORIES

- Each crossing will have two assigned speed categories
  - Max speed to x speed (MAX Category)
  - X speed to 0 mph (Lower Category)

Categories	Example Category Speeds*	Description
Max Category	79mph to 41mph	Any train traveling between 79-41mph will be in the Max Category
Lower Category	40mph to 0mph	Any train traveling between 40-0mph will be in the Lower Category

* Some crossings may have different speeds for each category based on track alignment and configuration

TWO SPEED CHECK DIAGRAM



- Pre-check – health check (working properly)
- Timing section – detects the speed of the train and sends instruction to gate controller (max or lower category)
- Xing Approach – enough distance prior to the crossing to safety provide the required gate warning time based on the maximum speed (when the gate will start to go down – max or lower category)
- Island Circuit – the actual crossing with the gates down

MAX AUTHORIZED SPEED

- Max authorized speed at a crossing is calculated based on:
  - Alignment
  - Curvature
  - Line of sight
- Speed is picked up by the system in the timing section
- Trains would travel below max speed
  - Accelerating out of a station
  - Decelerating into station
  - Mechanical failure
  - Freight train
  - Heat or other restrictions

OVERALL GATE DOWN TIME

- Gate down time is dependent on
  - Individual crossing speed categories
  - Schedule
    - Which determines the speed (that train will go through a crossing)
    - Station stopping pattern
    - If trains crossing each other at a grade crossing the same
- At stations: system features (e.g. circuit timers, whistle mics) also assist with reducing gate down time

CITY/COUNTY COORDINATION

- Caltrain will review gate down times with municipalities when the analysis for individual crossings become available
  - BBI is currently completing gate down time design and analysis for each crossing. Design build contract so not all crossings will be designed at once
- Traffic mitigation included as part of Electrification is still applicable

WIRELESS SYSTEM

- Existing Positive Train Control (PTC) contract includes implementation of a wireless grade crossing activation system
  - Timing of implementing wireless activation system is still being determined, but most likely post electrification
- Wireless solution requires a significant design effort and is intended to enable gate crossing activation based on actual speed of the train
  - Will also require significant alignment effort with the FRA
- Two Speed Check Solution will be implemented first
- Once there is a wireless grade crossing system, the two speed check solution would be used for non-equipped trains

NEXT STEPS

- BBI to continue individual crossing design and analysis
  - Continue to meet with cities as designs are finalized
- Work with CPUC and municipalities to complete the GO-88b process

BACK-UP SLIDES

ALTERNATIVES CONSIDERED

- Fixed Start Solution
  - Longer average gate down times
- Axle counters for speed detection
  - Not acceptable for maintenance & operations
- Aspect-based speed limits for train approach
  - Not reliable method to determine train speed
- Two Speed Check Solution
  - Determined to be best alternative

CALIFORNIA High-Speed Rail Authority

Memorandum

Date: November 19, 2020
To: Local Policy Maker Group (LPMG)
From: Boris Lipkin, Northern California Regional Director
Re: California High-Speed Rail Program Update

STATEWIDE UPDATE

Small Business Newsletter

On November 10, the Authority published its November Small Business Newsletter, with a special highlight on Veteran-owned small businesses as we recognize America's 20 million living veterans. The Authority is proud to have Veteran-owned small businesses working to bring high-speed rail to California, including 60 Disabled Veteran Business Enterprises (DVBEs). These firms are part of the over 550 California certified small businesses working on the high-speed rail program. Features include EM Link International, a Southern California small business owned by Army veteran Erik Holguin, and Ross Infrastructure Development, a San Francisco-based DVBE run by Army veteran Brian Ross. Read these stories in our Small Business Newsletter and see our social media pages on Facebook, Twitter and Instagram for features on the veterans helping bring high-speed rail to California.

Northern California Highlights

- Former Army platoon leader, Brian Ross brought his military training to Ross Infrastructure Development, a San Francisco-based DVBE. Read more about Brian and his journey on page 6.
- Work Continues on Environmental Clearance Amidst COVID-19 (page 14) with the Final Supplemental EIR/EIS for the Central Valley Wye connecting the Central Valley to Northern California approved in September and the successful circulation and public engagement for the Draft EIR/EISs for both Northern California project sections over the summer.
- Caltrans Mentoring Program Gives Small Business a Leg Up (page 20) spotlight on Lori Goodwin, Vice President of Civil Program Management, NV5, who is using her years of experience to mentor and tutor firms like San Jose-based Achievement Engineering Corporation (AEC), already in talks on a teaming opportunity for the Veterans Boulevard Interchange Project in Fresno.
- Event: NorCal Procurement Technical Assistance Center to host Government Contracting & Bid Protests: Back to Basics webinar on **Wednesday, November 18**, 10-11:30 AM (FREE). More event information can be found on page 4.
- Fact: 201 Northern California-based Certified Small Businesses working to bring high-speed rail to California – the most of any region in California!

NORTHERN CALIFORNIA UPDATE

New Visualizations of the Proposed Light Maintenance Facility in Brisbane

Based on community interest in the proposed Light Maintenance Facility in Brisbane and what it might look like, the Authority has developed several visualization tools to illustrate the proposed facility (under Alternative A – the Preferred Alternative) in Northern California. These visualizations depict proposed modifications in the surrounding area, including the realignment of Tunnel Avenue, vehicle circulation improvements, relocation of the Brisbane Fire Station, and modifications to the Bayshore Caltrain Station. These tools are intended to make it easier to understand the designs previously only available in the engineering drawings.

The new simulations and interactive images can be viewed here on www.meetHSRNorCal.org.

International Examples of Blended Service Operations

The Northern California team will be presenting on international examples of blended service operations for the upcoming LPMG meeting and Community Working Group (CWG) webinars based on past interest in seeing applicable lessons learned from abroad. As blended operations are common throughout Europe, the presentation will provide an overview of how the system works in cities abroad.

Northern California Outreach Survey

This fall, the California High-Speed Rail outreach team circulated an outreach survey to stakeholders to better understand preferences for receiving information and participating in events (virtual and in-person) during the COVID-19 pandemic. The survey received responses from 608 participants who provided input on their topics of interest and preferred outreach approaches. Please visit the events page to join the CWG webinars and view materials.

RECENT AND UPCOMING OUTREAH ACTIVITIES

- November 11: Hispanic Chamber of Commerce of Silicon Valley
- November 17: San Francisco to San Jose Community Working Group Meeting
- November 18: San Jose to San Francisco Community Working Group Meeting

Northern California Region

Local Policy Makers Group

November 19, 2020

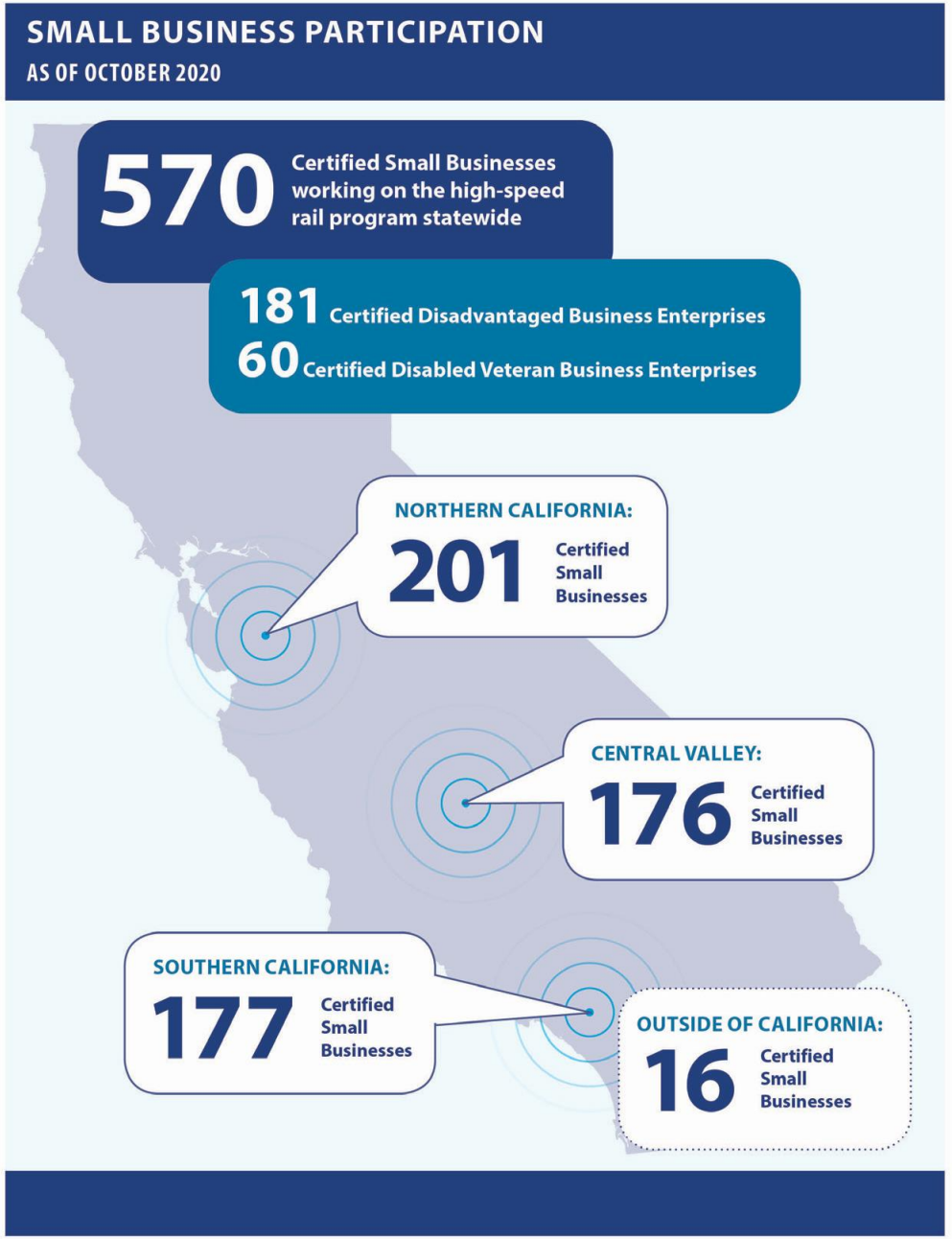
STATEWIDE AND NORTHERN CALIFORNIA UPDATES

SMALL BUSINESS NEWSLETTER

Northern California Highlights

- Highlight on Veteran-owned small businesses, including San Francisco-based Ross Infrastructure Development
- Work continues on environmental clearance amidst COVID-19
- Caltrans mentoring program gives small business a leg up
- Event: NorCal Procurements Technical Assistance Center hosts *Government Contracting & Bid Protests: Back to Basics*

Read these stories here:
https://hsr.ca.gov/small_business/newsletter



BRISBANE VISUALIZATIONS

Proposed Light Maintenance Facility Elements in Brisbane (Alternative A)

Visit: meethsrnorcal.org/light-maintenance-facility

BRISBANE VISUALIZATIONS

Proposed Light Maintenance Facility in Brisbane and Bayshore Caltrain Station (Alternative A)

Visit: meethsrnorcal.org/light-maintenance-facility

BRISBANE VISUALIZATIONS

Tunnel Avenue Realignment (Alternative A)

Visit: meethsrnorcal.org/light-maintenance-facility

INTERNATIONAL EXAMPLES OF BLENDED SERVICE OPERATIONS

High-Speed Operations in Europe

Blended Operations

General

- Common throughout Europe
- Utilize existing infrastructure approaching city centers
  - Insufficient space for dedicated tracks
  - Quicker to implement
  - Lower capital costs vs. increased maintenance costs
- Lower speeds than dedicated track
  - Standard in the UK up to 125 mph
- Requires coordination on track, systems and trainsets
- Development of integrated timetables

Track, Systems & Trainsets

- Blended systems require coordination in most of these areas
- Track design needs to balance different train types and speed profiles
- Maintenance standards need to allow for different track wear rates for different trainsets
- Use of multiple signaling systems is common
- Traction power systems may vary
- Multitude of smaller issues
  - Electrical interference and compatibility, signal sighting, OCS and track configuration

All these adaptations have been successfully achieved.

Operations

Integration of service plans

More efficient use of infrastructure and services.

Improved passenger experience

Improved overall service offering for passengers

Mix of express and local services

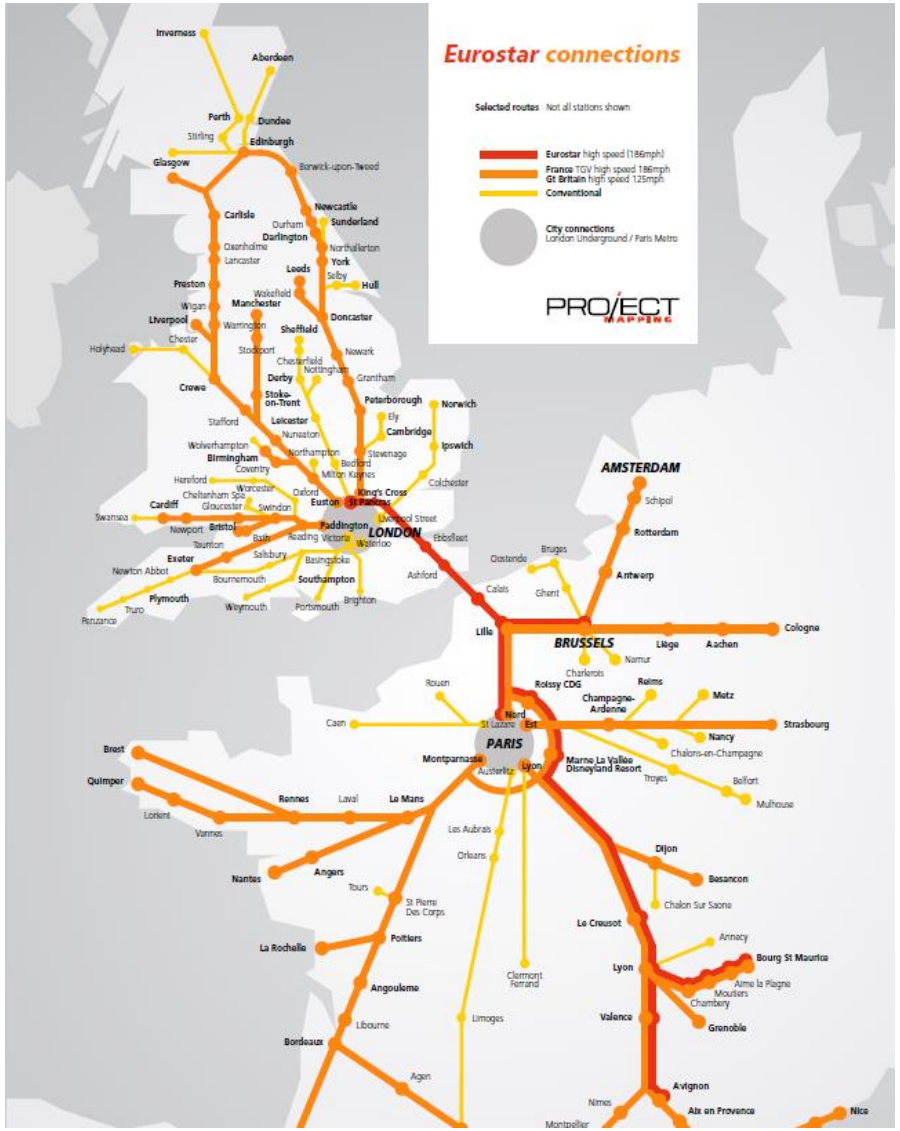
Common stations facilitate modal transfers

Dispatching controlled by a single entity

Optimizes reliability and resilience

Eurostar Case Study

High-Speed Service from London to Paris and Brussels via Channel Tunnel



Eurostar Case Study

Start of Service

- Signal systems
  - UK, French and Belgian systems all different
- Traction control
  - 3rd rail, 1500V/3000V DC OCS, 25kV AC OCS
- On completion of HS 1
  - Continues to share high-speed tracks through southern England

Eurostar Case Study

Start of Service

- Shared existing tracks through southern England with commuter and freight trains
- Shared Channel Tunnel tracks with freight and shuttle services

NORTHERN CALIFORNIA OUTREACH SURVEY

NORTHERN CALIFORNIA OUTREACH SURVEY

PURPOSE & METHODOLOGY

Objective: To better understand stakeholder preferences for receiving information and participating in events (virtual and in-person) during the COVID-19 pandemic.

- **One of several tools** to gather information on community priorities
- Online multilingual survey distributed to Northern California mailing lists

NORTHERN CALIFORNIA OUTREACH SURVEY

SURVEY PARTICIPANTS ARE OUR STAKEHOLDERS

About the Respondents

608 respondents

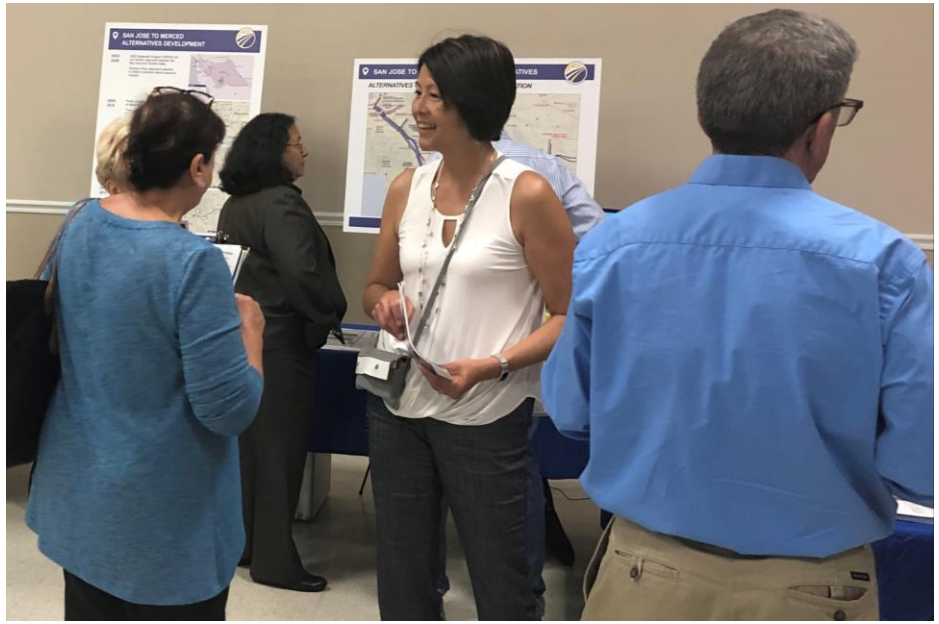
Average of 6.4 minutes to complete

63%

San Francisco, San Mateo, Santa Clara, Merced and San Benito counties

Stakeholders older and higher share male than general population

- 78% **very interested** in high-speed rail
- 60% get info from Authority **e-newsletters**
- 70% participated in **at least one Authority event**

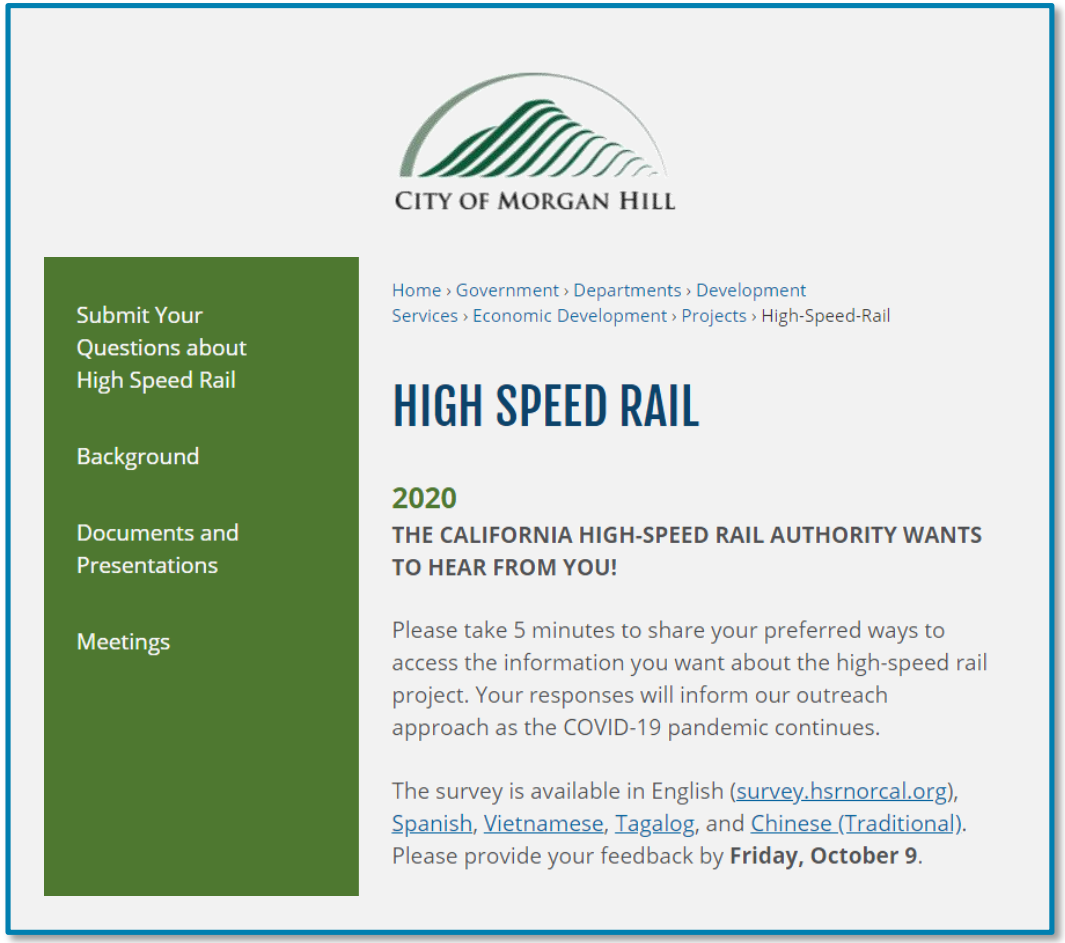


NORTHERN CALIFORNIA OUTREACH SURVEY

Interests and Preferences

Topics of Interest

- State Rail Plan/future of rail in California
- Construction progress and status
- Phased implementation: service start and where
- Blended system operations
- High-speed rail stations
- Lessons from around the world
- Opportunities for personal travel
- 2020 Business Plan
- Cost/funding



Some stakeholders reposted the survey on their websites.

NORTHERN CALIFORNIA OUTREACH SURVEY

Additional Feedback

NORTHERN CALIFORNIA OUTREACH SURVEY

PREFERRED OUTREACH APPROACHES

High Interest

- Webinars and YouTube Town Halls
- Frequent Authority newsletters

Modest interest

- Socially-distanced in-person events
- Facebook Live

Not interested

- Reddit AMA
- Instagram Live event

Other Ideas

- More traditional media (newsletters, postcards, television, local news feeds)
- Updated information tools and an easier-to-navigate hsr.ca.gov website
- More maps (a Google Map overlay!)
- Dialogs about future funding needed to complete the system
- YouTube videos
- Conceptual train schedule
- Talking points on financial information

NORTHERN CALIFORNIA OUTREACH SURVEY

OPPORTUNITIES

- Share more information, more often.
  - Continue sharing about construction and user experience.
  - Community impacts and decision-making process.
  - Costs, funding and timing.
- Collaborate with partners (e.g., Caltrain, cities) on engagement efforts.
- Diversify engagement platforms and approach to reach more women and younger and multilingual populations.
- Current stakeholders are comfortable with existing webinar platforms and traditional media

Headquarters
California High-Speed Rail Authority
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