

City Council Rail Subcommittee



SPECIAL MEETING AGENDA

Date: 9/30/2019
Time: 5:00 p.m.
City Hall - 1st Floor
"Downtown" Conference Room
701 Laurel St., Menlo Park, CA 94025

A. Call To Order

B. Roll Call

C. Regular Business

- C1. Approve the City Council Rail Subcommittee special meeting minutes of July 16, 2019 meeting ([Attachment](#))
- C2. Receive a presentation from Caltrain on the Business Plan and provide feedback ([Staff Report #19-005-CC-RS](#))

D. Informational Items

- D1. Update on next steps for the Ravenswood Avenue Railroad Crossing project

E. Adjournment

At every Regular Meeting of the City Council, in addition to the Public Comment period where the public shall have the right to address the City Council on any matters of public interest not listed on the agenda, members of the public have the right to directly address the Commission on any item listed on the agenda at a time designated by the Chair, either before or during the City Council's consideration of the item.

At every Special Meeting of the City Council, members of the public have the right to directly address the City Council on any item listed on the agenda at a time designated by the Chair, either before or during consideration of the item.

For appeal hearings, appellant and applicant shall each have 10 minutes for presentations.

If you challenge any of the items listed on this agenda in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Menlo Park at, or prior to, the public hearing.

Any writing that is distributed to a majority of the City Council by any person in connection with an agenda item is a public record (subject to any exemption under the Public Records Act) and is available for inspection at the City Clerk's Office, 701 Laurel St., Menlo Park, CA 94025 during regular business hours.

Persons with disabilities, who require auxiliary aids or services in attending or participating in City Council meetings, may call the City Clerk's Office at 650-330-6620.

Agendas are posted in accordance with Government Code Section 54954.2(a) or Section 54956. Members of the public can view electronic agendas and staff reports by accessing the City website at menlopark.org/agenda and can receive email notification of agenda and staff report postings by subscribing to the "Notify Me" service at menlopark.org/notifyme. Agendas and staff reports may also be obtained by contacting City Clerk at 650-330-6620. (Posted: 9/26/2019)



SPECIAL MEETING MINUTES – DRAFT

Date: 7/16/2019
Time: 5:00 p.m.
**City Hall – “Downtown: Conference Room, 1st floor
701 Laurel St., Menlo Park, CA 94025**

A. Call to Order

Mayor Mueller called the meeting to order at 5:18 p.m.

B. Roll Call

Present: Mueller, Combs
Absent: None
Staff: Senior Transportation Engineer Angela Obeso, Assistant Public Works Director Nikki Nagaya, Senior Project Manager Morad Fakhrai, City Manager Starla Jerome-Robinson

C. Regular Business

- C1. Approve the City Council Rail Subcommittee special meeting minutes of April 22, 2019 meeting (attachment)

By acclimation, the Subcommittee approved the minutes.

- C2. Recommend to City Council proposed updates to the City’s rail policy and position statement (Staff Report #19-003-CC RS)

Staff Nagaya provided a presentation (Attachment).

- Mickie Winkler spoke recommending a phased approach to providing rail service, with service between Redwood City and Willow Road as a first phase.
- Henry Riggs spoke concurring with a phased approach to providing rail service, and recommending a second stop in Menlo Park be considered at Marsh Road near Marsh Manor to better serve Lorelei Manor, Flood Triangle and Friendly Acres.
- Ken Southerland spoke in support of the additions referencing residential quality of life and asked a question regarding treatments for pedestrian crossings near railroad crossings.
- Adrian Brandt spoke in support of a shared use pathway adjacent to the rail and recommended not requiring grade separations as a condition of the Dumbarton corridor project.
- Jen Wolosin shared that she attended a Silicon Valley Bicycle Coalition tour of SMART Rail in Marin County with many parallels to the potential shared use pathway adjacent to the Dumbarton corridor. She recommended better defining residential quality of life. She also requested that the staff report be revised in reference to the Dumbarton corridor meeting at the Menlo Park Senior Center, as more than “several” residents attended the meeting.
- revisions to the rail policy regarding maximizing service in Menlo Park, as express or skip-stop service may provide a better service to Menlo Park than if every train stopped at the Menlo Park station.
- Steve Van Pelt spoke requesting a revision to Circulation Element policy CIRC-5.3 in the Staff report remove reference to “commuter” rail, recommended considering buses in the Dumbarton corridor as a first phase, and requested rail service be electrified.

Mayor Mueller facilitated a Subcommittee discussion and the following direction was provided:

- Revise the staff report description of the Dumbarton corridor meeting at the Menlo Park Senior Center
- Revise the reference to the provision of a sound wall adjacent to the Dumbarton corridor in the rail policy and position statement
- Maintain residential quality of life in the draft rail policy
- Itemize the remaining comments for consideration when the policy is brought forward to the City Council

C3. Provide direction on next steps for the Ravenswood Avenue Railroad Crossing project (Staff Report #19-004-CC-RS)

Staff Obeso provided a presentation (Attachment).

- Steve Schmidt requested clarification on the status of the tunnel scope, as Palo Alto recently removed a citywide tunnel from further consideration. He requested the scope of study of a fully elevated grade separation option be broadened to start at the northern City border with the Town of Atherton to minimize impacts on safety, circulation. He also requested that a fully elevated option could consider closing Encinal Avenue completely, or to vehicle traffic while maintaining pedestrian and bicycle access. He stated this alternative should be compared objectively to other feasible alternatives in the environmental review phase.
- Ken Southerland stated that an elevated railroad structure does not belong next to residential uses. He requested that the scope be amended to produce similar examples that are comparable to Menlo Park prior to embarking on a detailed engineering evaluation to be more cost effective. He also requested that visual simulations be prepared showing what a fully elevated structure would look like from a resident's back yard.
- Jen Wolosin requested clarification on what is proposed to be studied in regard to a fully elevated option. She also spoke in support of removing a tunnel from further consideration, as the cost is great and the urban-style densities needed to support financing such a proposal were too great. She also requested equal consideration of potential impacts for all residential units, whether single- or multi-family.
- Henry Riggs spoke requesting a standard measure for criteria in reference to the alternatives comparison chart, emphasizing the need for east-west connectivity. He supported elimination of a tunnel from further consideration. He also requested the scope of work for further study of a fully elevated option be amended to provide a menu of options to achieve the goals of a fully elevated alternative: Improving connectivity, minimizing excavation, reducing the construction schedule, and preventing unknowns due to utility relocation costs. He also requested clarification whether the scope of work anticipated that Encinal could rise minimally, to maintain an at-grade crossing, and that Transportation staff in lieu of the technical consultant prepare the analysis. He also inquired about options for aesthetic improvements for all grade separation options.
- Katie Behroozi spoke in support of the connectivity improvements that are incorporated into the hybrid or split elevation alternative. She also inquired about options for aesthetic improvements for all grade separation options.
- Adrian Brandt shared information regarding the service levels under consideration in the Caltrain Business Plan, and recommended that a plan for eliminating the at-grade crossing at Encinal Avenue be incorporated to address safety and horn noise considerations. He also described a method used to estimate an approximate height of the rail tracks at Encinal Avenue if rise in elevation began at the Atherton border, suggesting a structure could not achieve significant elevation due to design limitations of the required rail vertical curves (no more than approximately 10 feet high structure would be possible, according to Mr. Brandt). He also spoke

regarding the potential construction impacts and utility relocations.

- Mickie Winkler spoke in support of adding a consideration of closing Encinal Avenue to the study.
- Drew (last name not provided) spoke regarding construction impacts and the potential to consider a single shoofly track in lieu of two tracks.

Mayor Mueller facilitated a Subcommittee discussion and the following direction was provided:

- Eliminate the tunnel option from further study in the scope of work, given the information provided by Professor Steven Benyon of the Stanford Global Projects Center at the May 21, 2019 City Council meeting
- Concur with geographic segments presented based on adjacent land uses to evaluate the options in the future
- Incorporate the ability to provide a menu/iterative analysis of possible fully elevated options, including starting rise of the railroad tracks at Atherton border and nearer to Encinal Avenue, into the scope of work and evaluate the pros and cons of each
- Include assessment of beautification/aesthetic improvements options and a cost comparison to “base” case
- Include assessment of construction impacts in each alternative

C4. Update on Middle Avenue Pedestrian and Bicycle Crossing project (attachment)

Mayor Mueller left the meeting at 6:26pm, but requested informational updates continue and Councilmember Combs facilitate public comment and discussion, as no further Subcommittee direction was requested.

Staff Obeso provided the presentation (Attachment).

- Steve Van Pelt inquired about coordination with Caltrain electrification.
- Drew (last name not provided) inquired about the potential to relocate the crossover tracks.

C5. Update on Caltrain Business Plan and Electrification project (attachment)

Staff Obeso provided the presentation (Attachment) and shared Caltrain staff would attend a future Rail Subcommittee meeting in August or September to provide more information.

- Adrian Brandt spoke regarding the proposed Caltrain service frequencies at the Menlo Park station.

C6. Update on California High Speed Rail, San Jose to San Francisco project segment (attachment)

Staff Obeso provided the presentation (Attachment).

Adrian Brandt spoke regarding the proposed HSR-staff recommended alternative, which recommends location of the Brisbane maintenance yard, no peninsula passing tracks.

- Dana Hendrickson expressed thanks to the Rail Subcommittee for a productive meeting.

D. Adjournment

Councilmember Combs adjourned the meeting at 6:40 p.m.



STAFF REPORT

City Council Rail Subcommittee

Meeting Date: 9/30/2019

Staff Report Number: 19-005-CC-RS

Regular Business: Receive a presentation from Caltrain on the Business Plan and provide feedback

Recommendation

Staff recommends that City Council Rail Subcommittee to receive a presentation (Attachment A) from Caltrain staff on the Business Plan and provide feedback.

Policy Issues

This action is consistent with circulation element policies:

- CIRC-5.3 (rail service). Promote increasing the capacity and frequency of commuter rail service, including Caltrain; protect rail rights-of-way for future transit service; and support efforts to reactivate the Dumbarton corridor for transit, pedestrian, bicycle and emergency vehicle use.
- CIRC-5.4 (Caltrain enhancements). Support Caltrain safety and efficiency improvements, such as positive train control, grade separation (with a priority at Ravenswood Avenue), electrification, and extension to Downtown San Francisco (Transbay terminal), provided that Caltrain service to Menlo Park increases and use of the rail right-of-way is consistent with the City's rail policy.

This action is also consistent with the current City Council Rail Subcommittee mission statement "The City Council Rail Subcommittee will advocate for ways to reduce the negative impacts and enhance the benefits of Rail in Menlo Park." The City Council Rail policy adopted on August 27 (Attachment B) guides the feedback provided to Caltrain on this project.

Background

The Caltrain Business Plan seeks to address the future potential of the Caltrain railroad corridor over the next 20-30 years. The Business Plan efforts began in early 2018 and is anticipated to be complete in early 2020. It assesses the benefits, impacts, and costs of different service visions, building the case for investment and a plan for implementation. The process undertaken to develop the plan allows the community and stakeholders to engage in developing a more certain, achievable, financially feasible future for the Caltrain railroad based on local, regional, and statewide needs.

Caltrain staff has undertaken over 150 stakeholder meetings and outreach activities as part of this process including presentations to the Local Policy Makers Group (LPMG) of which Menlo Park's City Council Rail Subcommittee is a member, as well as this presentation to the City Council Rail Subcommittee and community. The outreach and feedback received will be summarized in a presentation that Caltrain staff will give to the Joint Powers Board (JPB) at their meeting on October 3.

Analysis

The Caltrain Business Plan covers service needs including number of trains, frequency of trains, ridership, and infrastructure needed; business case including value from investments, infrastructure and operating costs, and potential sources of revenue; community interface including benefits and impacts to surrounding communities, corridor management strategies, consensus building, and equity considerations; and organization including the organizational structure of Caltrain and funding mechanisms to support future service.

An important milestone in the process is choosing a “Long Range Service Vision”, which is anticipated to occur at the Joint Powers Board (JPB) at their meeting on October 3. A fact sheet about this service vision is included here as Attachment C. Once adopted by the JPB, this vision will create a framework that allows Caltrain staff to phase, fund, and implement the plan over time. This will also allow Caltrain staff to engage efficiently and constructively in the development in other long range plans and projects throughout the region. This will allow Caltrain to better interface with the various regional transportation systems and investments, creating a more cohesive transportation network throughout the Bay Area.

The Business Plan developed three “growth scenarios”, each representing a different option for the kind of service Caltrain could provide in 2040 given different levels of supporting investment. These scenarios include Baseline, Moderate Growth and High Growth. The Business Plan analysis evaluated each of these scenarios with various service metrics including frequency, connectivity, network integration, ridership, travel time and infrastructure. Based on this analysis, Caltrain staff has developed a draft recommendation for the Long Range Service Vision. The recommendation is that Caltrain adopt and pursue a vision compatible with the “moderate” growth scenario while also taking a series of steps to plan for and not preclude the potential realization of the “high” growth scenario.

Attachment D illustrates how the long range vision would impact Menlo Park. Today, Menlo Park’s Caltrain station has two trains per hour stopping in each direction during the peak commute periods with local (makes all stops) or limited (skips some stops in varied patterns) service along the rest of the corridor. A total of five trains per hour per direction travel through Menlo Park today. The baseline scenario stays much the same as today’s service for Menlo Park, but assumes an increase in the total number of trains that travel through Menlo Park to six Caltrain trains and four high speed rail trains per direction per hour during the peaks which will increase the gate downtime at at-grade crossings. The moderate and high growth scenarios also assume an increase in the total number of trains to six Caltrain trains and four high speed rail trains per direction per hour during the peaks and would also increase service to Menlo Park’s station to at least three stops per peak hour. The stopping patterns would become local (makes all stops) for all three of those trains. Atherton’s station would begin receiving one train stop per direction per hour during the weekday peaks, whereas today that station only receives weekend service. Four track segments are proposed in some areas of the corridor, none of which includes Menlo Park, and these will be further analyzed as part of future work.

Caltrain staff will be in attendance at the Rail Subcommittee meeting to provide a presentation (Attachment A) which will cover these topics in greater detail and will present the Caltrain staff’s current recommendations. City staff is requesting the Rail Subcommittee provide feedback, if desired, to be reported to the Joint Powers Board (JPB) either by letter or verbal comments at the October 3 JPB meeting.

Impact on City Resources

No additional funding or resources are being requested at this time.

Environmental Review

This action is not a project within the meaning of the California Environmental Quality Act (CEQA) Guidelines §§ 15378 and 15061(b)(3) as it is a minor change that will not result in any direct or indirect physical change in the environment. Any future project actions will comply with environmental review requirements under the California Environmental Quality Act and such efforts will be undertaken by the Joint Powers Board and Caltrain staff.

Public Notice

Public Notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting.

Attachments

- A. Caltrain Business Plan presentation
- B. Hyperlink – City Council Rail Policy:
<https://menlopark.org/DocumentCenter/View/6388/City-Council-Rail-Policy>
- C. Caltrain 2040 Service Vision fact sheet
- D. Caltrain Business Plan City of Menlo Park booklet

Report prepared by:
Angela R. Obeso, Senior Transportation Engineer

Report reviewed by:
Nicole H. Nagaya, Interim Public Works Director



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.



Caltrain is part of a dynamic corridor



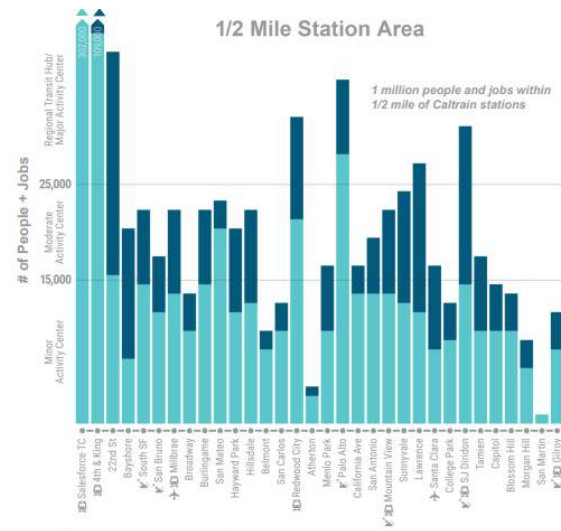
2040 Demand

The Caltrain corridor is growing

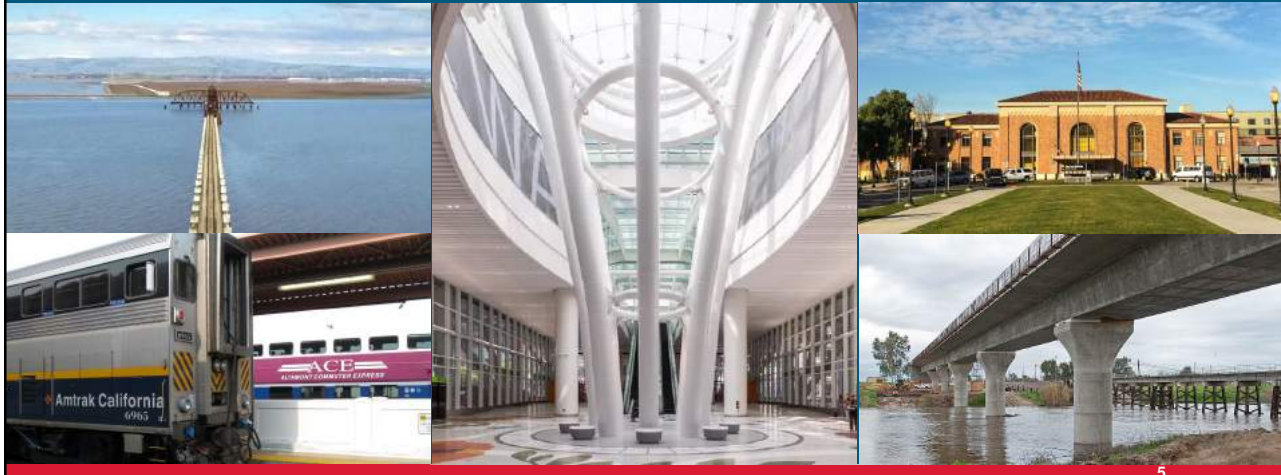
- By 2040 the corridor expected to add 1.2 million people and jobs within 2 miles of Caltrain (+40%)¹
- 80% growth expected in San Francisco and Santa Clara Counties

Major transit investments are opening new travel markets to Caltrain

- Downtown Extension and Central Subway
- Dumbarton Rail, BART to San Jose, and improvements to Capitol Corridor and ACE
- HSR and Salinas rail



The future of rail in the Bay Area is still coming together, with many different plans and projects underway.



Caltrain will be the first, modern electrified railroad in California. The Vision we choose will shape the future of rail in the region and the state.



What does it mean for Caltrain to Choose a Long Range Vision?

Caltrain's 2040 Service Vision needs to be a "Big Tent"

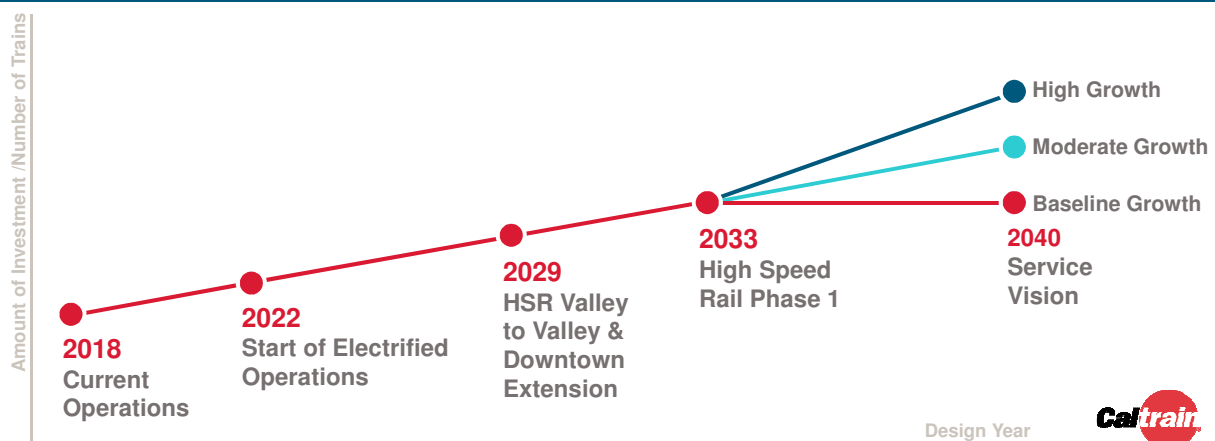
- The Caltrain corridor is a key regional transportation asset and many of our partner cities and agencies have major commitments or planned investments (Projects) in the corridor. The vast majority of these are substantially unfunded.
- The "Baseline Vision" incorporates these investments, as well as the basic improvements that Caltrain will need by 2040 to operate a fully modernized blended system at "baseline" levels of frequency.
- Building from this "baseline," Caltrain has assessed options for incremental expansion of service

Caltrain's core question as it considers a Long Range Service Vision:

How Much Service Should We Provide?

7

2040 Service Scenarios: Different Ways to Grow



8

2040 Baseline Growth Scenario



Trains per Hour, per Direction

Peak: 6 Caltrain + 4 HSR
Off-Peak: 3 Caltrain + 3 HSR

Stopping Pattern

Skip stop

Travel Time, STC-Diridon

69-73 Min

New Passing Tracks

Millbrae

Service Plan Description

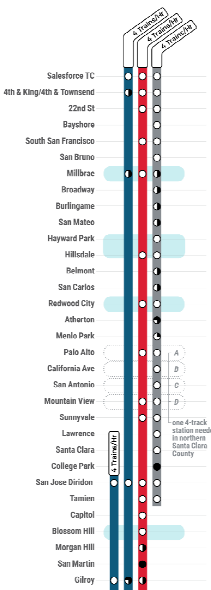
- Bunched service results in irregular Caltrain headways; each pattern arrives over span of 10 minutes, then a 20-minute gap between trains
- Three half-hourly skip stop patterns each with similar travel times
- South of Tamien, peak-direction skip stop service with 10 round trips per day



Conceptual 4 Track Segment or Station to be refined through further analysis and community engagement.

9

Moderate Growth Scenario



Trains per Hour, per Direction

Peak: 8 Caltrain + 4 HSR
Off-Peak: 6 Caltrain + 3 HSR

Stopping Pattern

Local / Express with timed transfer at Redwood City

Travel Time, STC-Diridon

61 Min (Express)
85 Min (Local)

New Passing Tracks

Millbrae, Hayward Park-Hillsdale, Redwood City, Northern Santa Clara County, Blossom Hill

Service Plan Description

- Local and Express trains each operating at 15-minute frequencies with timed cross-platform transfer at Redwood City
- Skip stop pattern for some mid-Peninsula stations; some origin-destination pairs not served at all
- Trains serve Capitol and Blossom Hill every 15 minutes and Morgan Hill and Gilroy every 30 minutes



Conceptual 4 Track Segment or Station to be refined through further analysis and community engagement.

10

2040 High Growth Scenario



Trains per Hour, per Direction

Peak: 12 Caltrain + 4 HSR
Off-Peak: 6 Caltrain + 3 HSR

Stopping Pattern

Local / Express A / Express B with timed transfer at Redwood City

Travel Time, STC-Diridon

61 Min (Express A)
82 Min (Local)

New Passing Tracks

South San Francisco-Millbrae, Hayward Park-Redwood City, northern Santa Clara County, Blossom Hill

Service Plan Description

- Local and Express A trains each operating at 15-minute frequencies with timed cross-platform transfer at Redwood City
- Express B trains operate every 15 minutes between 4th & King and Tamien
- Local trains make nearly all stops
- Trains serve Capitol and Blossom Hill every 15 minutes and Morgan Hill and Gilroy every 30 mins



Conceptual 4 Track Segment or Station to be refined through further analysis and community engagement.

11

Weighing Caltrain's Choices



12

Components of the Business Case Analysis

We have adapted a traditional Business Case Analysis to the specific, and complicated circumstances of the Caltrain corridor.

Collectively, this analysis helps provide guidance as to whether we should remain on the “baseline” course or if there is value in choosing a Long Range Service Vision for Caltrain that aims higher.

The following slides present and weigh analyses in each of the following areas.

Service Comparison

Financial Analysis

Caltrain Economic Analysis

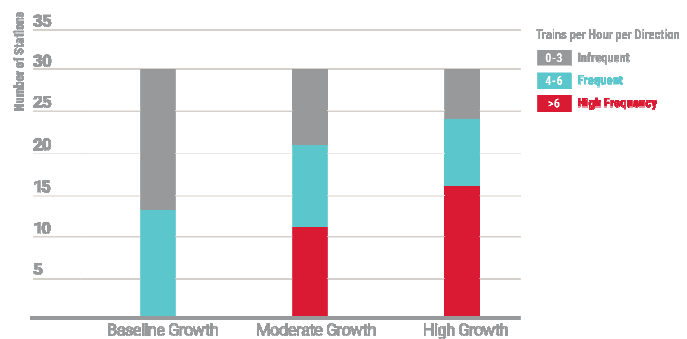
Regional Analysis

Flexibility and Uncertainty

13

Peak Period Frequency

The **number of stations** receiving frequent or high frequency service increases substantially in the Moderate and High Growth Scenarios due to higher train volumes in the peak period.



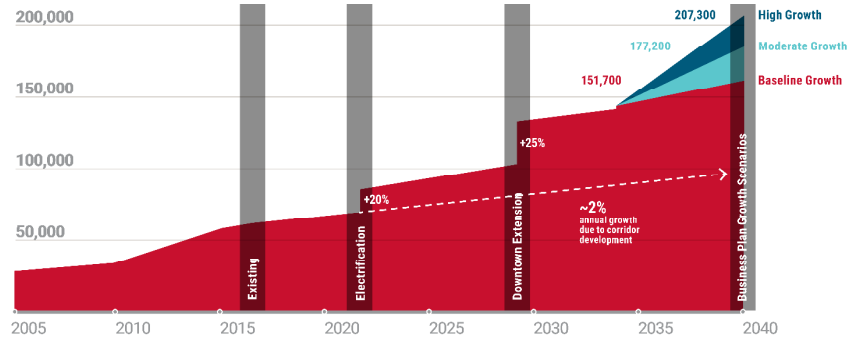
Metric		Baseline Growth	Moderate Growth	High Growth
Frequency	Number of Stations Served by Frequent Service (>4 TPHD)	13 Stations	21 Stations	24 Stations
	Longest wait times at major stations served by all trains	22 minutes	12 minutes	8 minutes


14

Ridership

On its current **Baseline** path, Caltrain would experience a *demand* of 161,000 daily riders by 2040.

The **Moderate and High Growth** scenarios would increase *demand* to 185,000 and 207,000 riders, respectively, leading to ridership and VMT saving increases.



	Metric	Baseline Growth	Moderate Growth	High Growth
 Ridership	Daily Ridership*	151,700 Riders	177,200 Riders	207,300 Riders
	Comfortable Peak Hour Train Loads?*	No	Crowding on some trains	Yes

*Crowd Constrained Ridership (135%)

15

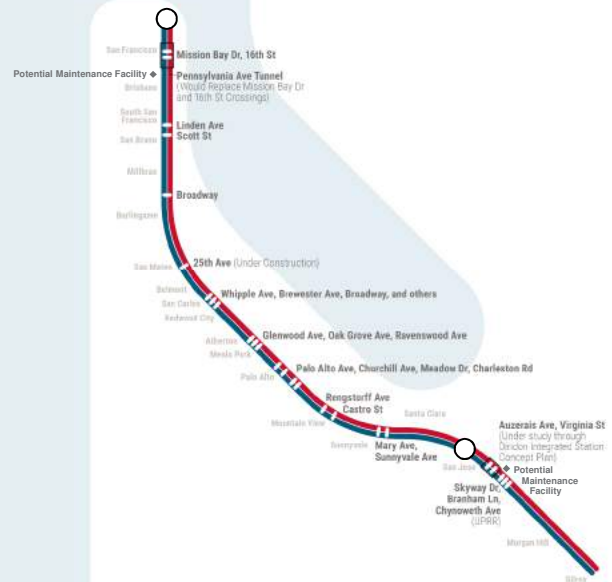
Baseline Investments

While the "Baseline" for the 2040 Service Vision contemplates only modest increases in Caltrain service beyond electrification, there are many other investments planned for the Caltrain corridor before 2040.

Some of these projects are directly required to enable the baseline level of service while others reflect the goals and commitments of Caltrain's local, regional and state partners.

Baseline investments include:

1. Caltrain projects already underway
2. Local, Regional & State partner projects that directly influence Caltrain
3. Additional Caltrain investments needed to fill out the baseline and support blended operations



16

The Baseline Costs \$22.1 Billion

\$2.3B
Caltrain Work
Underway

\$2.3B

\$16.2B
Investments Planned and
Proposed by Caltrain Partners

\$3.3B

Downtown Extension
to Salesforce Transit
Center*

\$3.4B

Diridon Station and
Surrounding
Rail Infrastructure**

\$2.6B

High Speed Rail
Investments

\$6.9B

City-led Grade Separations

\$3.6B
New Caltrain Investments to
Support Baseline Growth
Scenario

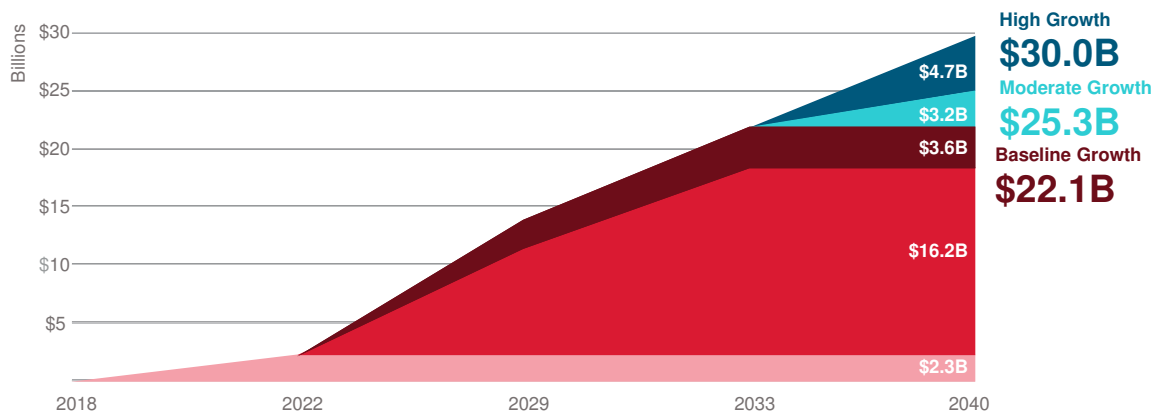
\$3.6B

*The SF preferred Pennsylvania alignment (extended tunnel) is included in the city-led grade separation category
**Placeholder cost pending detailed cost estimate to be developed through Diridon Integrated Station Concept Plan

17

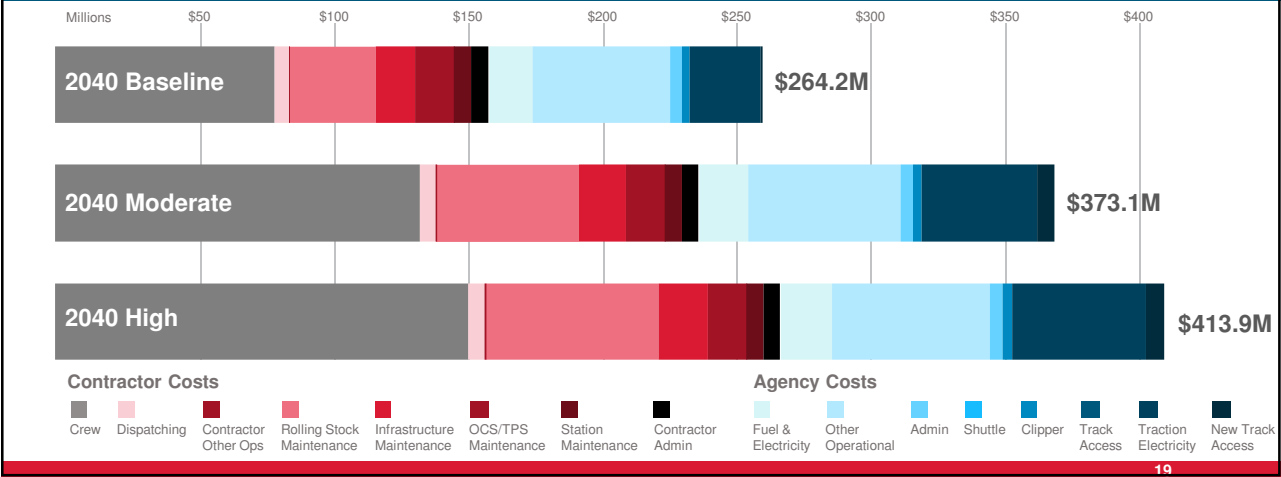
Investing for Growth

Total Corridor Investment Over Time by Growth Scenario



18

Year 2040 Operating Costs



Caltrain User Benefits over Baseline

Total Benefits 2018 to 2070, Average Annual Benefits 2040 to 2070

Benefit	Unit	Moderate Growth		High Growth	
		Total*	Per Year Average	Total*	Per Year Average
Existing Transit User Travel Time Savings	hours	12.9M	0.43M	20.9M	0.70M
New Transit User Travel Time Savings	hours	27.7M	0.92M	40.4M	1.35M
Avoided Auto Trips (VMT Savings from New Transit Users)	vehicle miles	9,000M	300M	16,100M	540M
Roadway Network Safety Improvements	reduced fatal/injury accidents	7,300	240	13,000	430
Public Health Benefits (from Active Transportation Mode Access)	lives saved	70	2	150	5
	reduced absent days at work	30,000	1,000	67,000	2,200

*Values rounded for presentation purposes

20

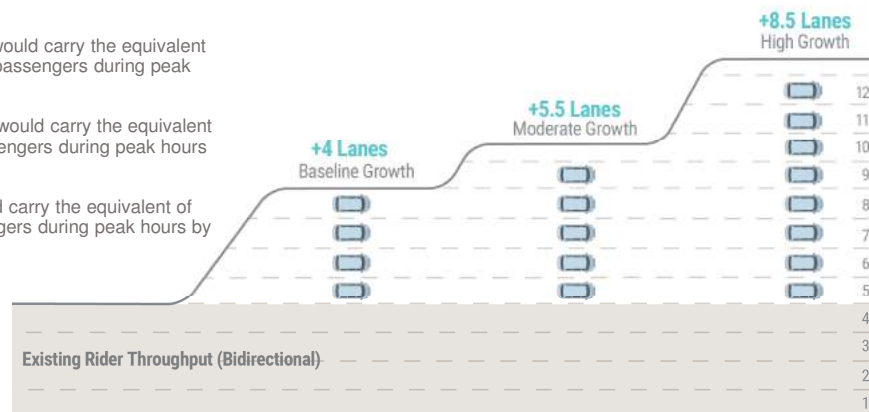
Freeway Throughput

Today, Caltrain carries 4 freeway lanes worth of people during peak hours. By 2040, the proposed growth scenarios will carry an additional 4 to 8.5 freeway lanes worth of passengers.

The **Baseline Growth** scenario would carry the equivalent of 4 new freeway lanes worth of passengers during peak hours by 2040.

The **Moderate Growth** scenario would carry the equivalent of 5.5 new freeway lanes of passengers during peak hours by 2040.

The **High Growth** scenario would carry the equivalent of 8.5 new freeway lanes of passengers during peak hours by 2040.



*Assumes vehicle occupancy of 1.1 persons/vehicle and lane capacity of 1,500 vehicles/hour.

21

Regional Rail Integration

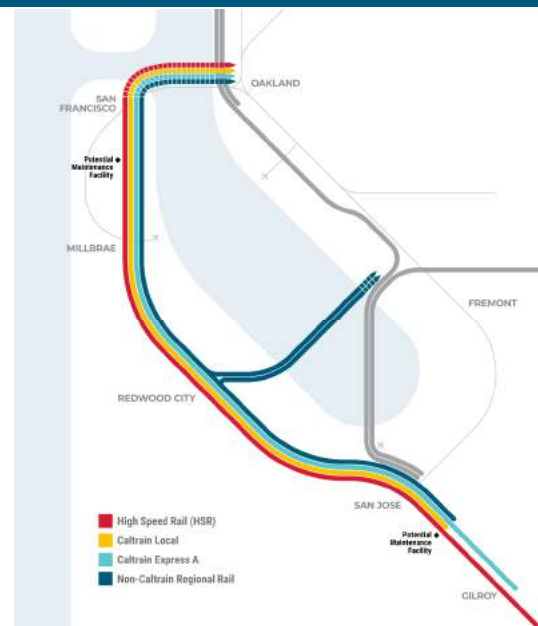
All service scenarios are compatible with regional rail needs.

High Growth anticipates large-scale corridor sharing, or "interlining" through investments in 4-track segments.

Baseline & Moderate Growth preserve the ability to scale up to large-scale corridor sharing but hold off on proactive investments until regional needs are better defined.

Examples of active studies and plans ongoing in the region that could advance the potential need for significant interlining onto Caltrain's corridor include:







- A standard gauge transbay crossing connecting San Francisco and the East Bay
- The reactivation of the Dumbarton rail bridge
- The development of expanded, "visionary" levels of service by ACE or Capital Corridor into San Jose



22

Summary

Service



	Metric	Baseline Growth	Moderate Growth	High Growth
 Frequency	Number of Stations Served by Frequent Service (>4 TPHPD)	13 Stations	21 Stations	24 Stations
	Longest Wait Times At Major Stations Served by All Trains	22 minutes	12 minutes	8 minutes
 Connectivity	Percentage of Station Pairs Connected Without/(With) a Transfer	84% (91%)	96% (98%)	99% (99%)
	Number of Station Pairs Not Connected at All	95	17	2
 Network Integration	Timed Connections at Regular Intervals	No	Yes	Yes
 Ridership	Daily Ridership (capacity constrained)	151,700 Riders	177,200 Riders	207,300 Riders
	Comfortable Peak Hour Train Loads?	No	Some Crowding	Yes
 Travel Time	Travel Time, San Francisco (STC) to San Jose (Diridon)	69-73 Minutes	61 Minutes	60 Minutes
	Average Travel Time per Rider, All Origin-Destination Pairs	33 Minutes	32 Minutes	31 Minutes
 Infrastructure	Passing Tracks Needed	<1 Mile	<5 Miles	15-20 Miles

23

Summary

Financial Analysis

Caltrain Economic Case






	Metric	Baseline Growth	Moderate Growth	High Growth
 Financial Metrics	Total Capital Costs	(\$22.1B)	(\$25.3B)	(\$30.0B)
	Caltrain Allocated Capital Costs	(\$6.6B)	(\$7.6B)	(\$9.4B)
	Total Operating Costs	(\$5.1B)	(\$6.0B)	(\$6.3B)
	Year 2040 Operating Costs	(\$0.26B)	(\$0.37B)	(\$0.41B)
	Farebox Recovery Ratio	82%	75%	77%
	Net Investment	(\$7.1B)	(\$8.6B)	(\$10.3B)
 Caltrain Economic Metrics	Net Present Value	-	\$0.58B	\$0.15B
	Benefit Cost Ratio	-	1.33	1.04

Except for Total Capital Costs, values are shown as a present (Year 2018) value using a discount rate of 4.0% and cover the period from 2018-2070.

24

Summary

Regional
Analysis

	Metric	Baseline Growth	Moderate Growth	High Growth
 Freeway Throughput	Additional Freeway Lanes	+4 lanes	+5.5 lanes	+8.5 lanes
 Regional Rail Integration	Accommodation of Large-Scale Corridor-Sharing Beyond HSR	could be scaled to accommodate	could be scaled to accommodate	can accommodate
 Environmental Benefits	GHG (MTCO2e)	1,108,045	1,898,330	3,006,028
 Land Value Benefits	Property Value Premiums Generated by 2040 Service Growth within 1 Mile of a Station	\$10B	\$10 - \$22B	\$22B
 Economic Productivity	Economic Output	\$32.8B	\$40.8B	\$47.7B
	Full and Part-time Jobs	44K job-years	51K job-years	69K job-years

25

Summary

Flexibility
and
Uncertainty

Uncertainties to consider in selecting a Service Vision for Caltrain include:

- Ultimate design and timing of key regional projects impacting the corridor is still in flux and may change
- All scenarios have a degree of flexibility; detailed service and infrastructure planning will be an ongoing process
- Scale and location of passing tracks needed are sensitive to state and regional rail plans, particularly in the high growth scenario
- Key business metrics may shift as fundamental assumptions change

The Moderate Growth Scenario:

- Does not directly accommodate large-scale corridor sharing but has the potential to scale up
- Has a high level of confidence that the Benefit-Cost Ratio to Caltrain is over 1.0 even if key assumptions change

The High Growth Scenario:

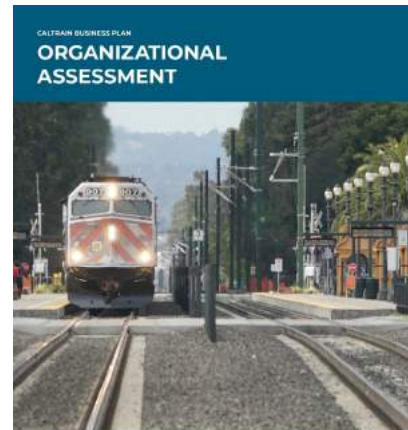
- Most directly accommodates large-scale corridor sharing and interlining but infrastructure is sensitive to changes in regional and state assumptions
- Has less certainty that Benefit-Cost Ratio to Caltrain is solidly over 1.0 should key assumptions change

26

Organizational Assessment Report

The Organizational Assessment was developed by Howard Permut of Permut Consulting LLC and former President of Metro-North.

Key areas of Howard's work have been supported by the Stanford Global Projects Center and a team of outside experts



JULY 2019



Read the full report at www.caltrain2040.org

27

Staff Recommendation



28

Caltrain Long Range Service Vision: Staff Recommendation

Website where full draft staff recommendation can be reviewed:

<https://www.caltrain2040.org/long-range-service-vision/>

Summary and Basis for Recommendation

Caltrain staff have developed a draft recommendation for the Long Range Service Vision. This recommended Vision is:

Caltrain adopt and pursue a Vision compatible with the "moderate growth" scenario while also taking a series of steps to plan for and not preclude the potential realization of the "high growth" scenario

The extensive analysis conducted during the Business Plan process has shown that there is a strong demand for expanded Caltrain service. Additionally, the business case analysis conducted as part of the plan has shown that there is a clear case, based on economic and regional benefits, for pursuing a Vision that goes beyond the baseline levels of service previously contemplated.

While the high growth option generates the greatest ridership and expanded regional benefits, it also comes at a higher cost and carries significantly higher levels of uncertainty and potential for community impacts. Therefore, based on the assembled evidence, staff has developed a recommendation that would direct Caltrain to pursue a service vision consistent with the "moderate growth" scenario while retaining the ability to expand to a level consistent with the "high growth" scenario at such time as demand warrants or the region has made the policy and funding commitments to pursue a larger, integrated rail system.



29

Caltrain Long Range Service Vision: Staff Recommendation

Website where full draft staff recommendation can be reviewed:

<https://www.caltrain2040.org/long-range-service-vision/>

The features of the Service Vision include:

Fast and frequent all day (every day) service

- Total peak hour frequencies of 8 Caltrain trains per direction
- Faster, all day baby bullet service with express service every 15 minutes
- Significantly increased off-peak and weekend service levels
- User friendly, show up and go service with easy to understand schedules

Increased Capacity

- Provides the capacity to triple today's ridership, serving nearly 180,000 people a day
- Adding more than 5 freeway lanes worth of regional capacity

Regional Connectivity

- End to end service - connecting Gilroy to downtown San Francisco (all day, both ways)
- Comprehensive local service providing coverage to every community
- Regular service making transfers and connections easier and more predictable



30

Where are We in the Process



31

Outreach Activities to Date

July 2018 – July 2019 by the Numbers

Stakeholders Engaged

21

Jurisdictions

26

Public Agencies

93

Organizations in Stakeholder Advisory Group

156

Stakeholder Meetings

Public Outreach

51

Public Meetings and Presentations

1,000+

Survey Responses

14,300+

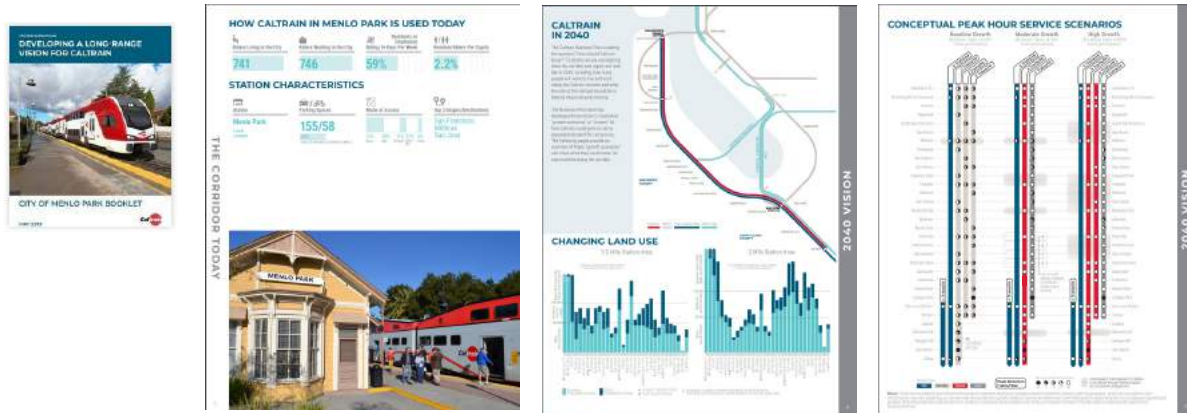
Website Views

258,200+

Social Media Engagements

32 DRAFT

Individual Jurisdiction Outreach City Booklets



View the booklets at: www.caltrain2040.org

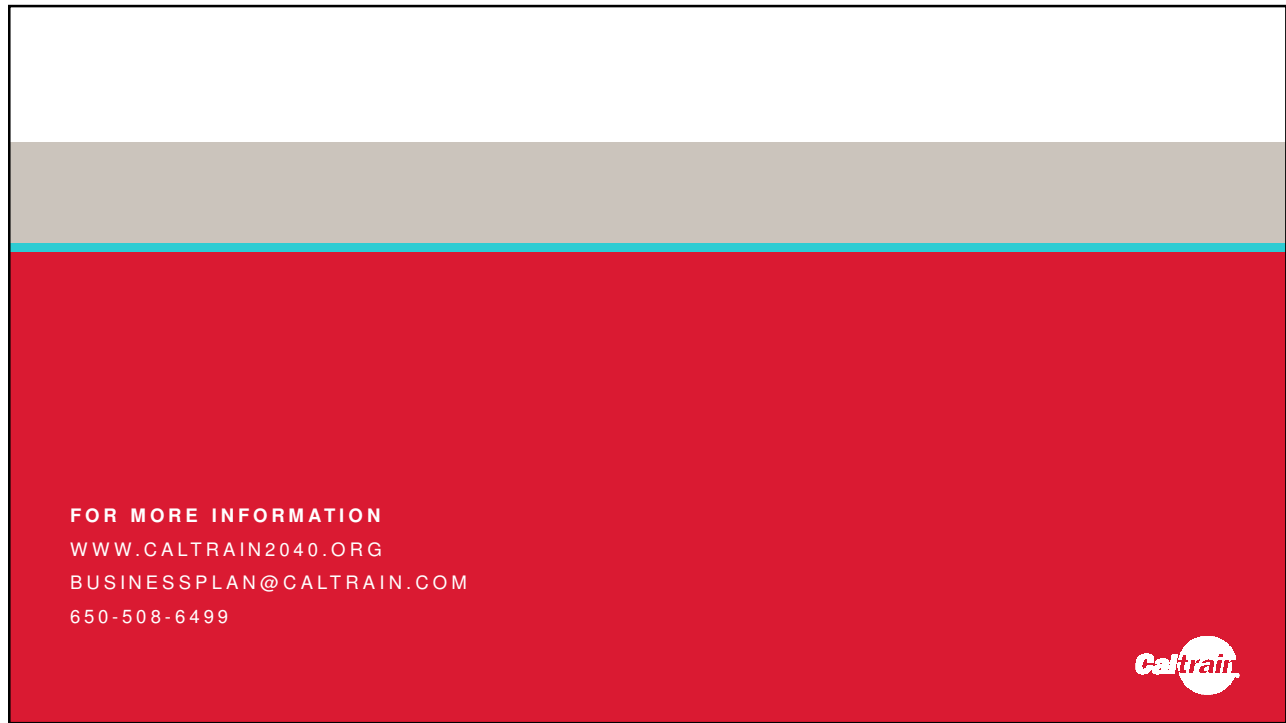
33 DRAFT

How to Get Involved

- Visit our website:
www.Caltrain2040.org
- Watch the staff recommendation presentation:
<https://www.youtube.com/watch?v=BCc3tlkEMyA&feature=youtu.be>
- Attend an in-person meeting (over 20 meetings planned before potential Board action):
<https://www.caltrain2040.org/get-involved/>
- Send us a note via email or phone:
 - Email: BusinessPlan@Caltrain.com
 - Phone: 650-508-6499



34



WHY PLAN A FUTURE SERVICE VISION?

Over the last 15 years, Caltrain's ridership has more than doubled, and today Caltrain is the 7th largest commuter rail system in the country. We are also the nation's most efficient commuter railroad as measured by both the percentage of our costs we recover through fares and the number of passengers and train miles we deliver per employee.

We are proud of our success, but we also want to do more. By 2040, regional growth projections show that there will be 1.2 million additional people living and working within 2 miles of our stations—a 40% increase from today. We want to make sure that our service, and our system, is ready. A future service vision provides the roadmap for the railroad to grow—showing us how we can improve the experience of our customers today and meet the needs of our region in the future.



INTRODUCING THE DRAFT

CALTRAIN 2040 SERVICE VISION

FAST, FREQUENT SERVICE. ALL DAY, EVERY DAY.

MORE TRAINS, MORE OFTEN



MORE COMMUTE SERVICE

8 RUSH HOUR TRAINS PER HOUR, EACH WAY

Plus capacity for 4 HSR trains, compared to 5 total trains today



MORE FLEXIBILITY

UP TO 6 MIDDAY & WEEKEND TRAINS

Per hour, each way, compared to 1 train today



MORE FREQUENT SERVICE

21 STATIONS WITH TRAINS EVERY 15 MINUTES

Compared to 6 stations today

MORE PEOPLE SERVED



TRIPLE THE PEOPLE SERVED

180,000 RIDERS ON CALTRAIN EACH DAY

Compared to 65,000 today

IMPROVED EXPRESS SERVICE



SHOW UP AND GO

15 MINUTE EXPRESS TRAIN SERVICE ALL DAY

Compared to no all-day express service today



FASTER TRAVEL

SAN FRANCISCO TO SAN JOSE IN LESS THAN AN HOUR

Compared to 62–69 minutes today



MORE OPTIONS

12 STATIONS WITH EXPRESS TRAIN SERVICE

Compared to 6–9 stations today

A MORE CONNECTED CORRIDOR



77 MILES OF ALL-DAY SERVICE

SF SALESFORCE TRANSIT CENTER TO SJ TO GILROY

Compared to 50 miles of all-day service today

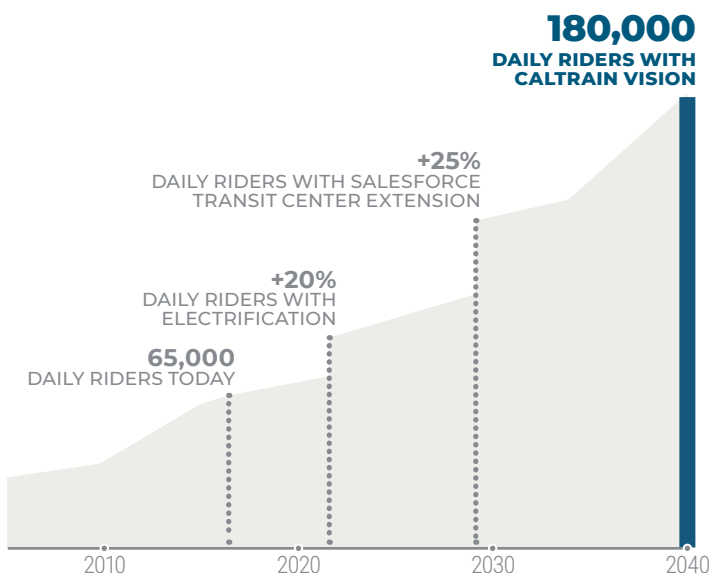


THE DRAFT VISION BENEFITS THE BAY AREA'S PEOPLE, ENVIRONMENT, AND ECONOMY

MORE TRANSPORTATION CAPACITY



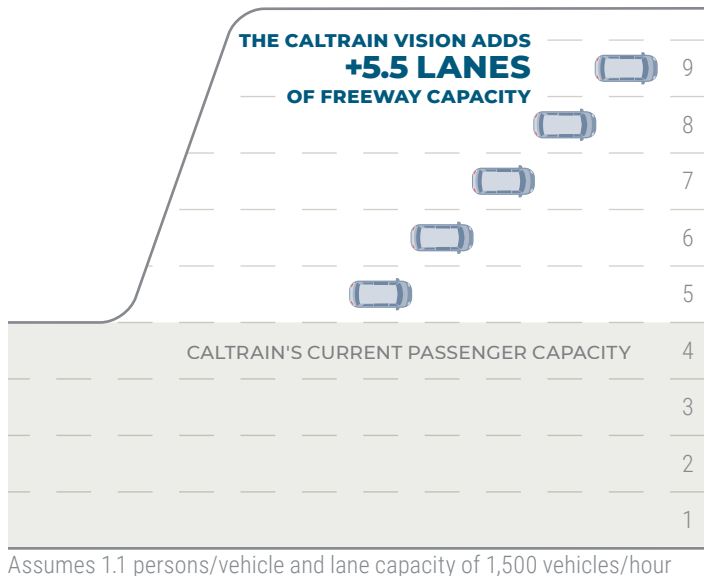
CARRYING MORE PEOPLE



Improving Caltrain lets us carry three times more people in 2040. That's equivalent to selling out the Giants' ballpark four times every day.



TRAINS VS LANES



Today, Caltrain carries 4 freeway lanes worth of people during rush hour. The draft vision adds the equivalent capacity of 5.5 new freeway lanes.

IMPROVING AIR QUALITY



REDUCING DRIVING

825,000 FEWER MILES DRIVEN EACH DAY
Resulting from drivers who switch to Caltrain. That's like taking 16,000 trips between SF and SJ off the road each day



ADDING JOBS

51,000 NEW JOBS CREATED
Total full- and part-time jobs along the corridor resulting from Caltrain investment*



REDUCING GREENHOUSE GAS EMISSIONS

110 FEWER METRIC TONS OF CO₂ EMISSIONS EACH DAY
Resulting from full electrification of our fleet and drivers switching to Caltrain



INCREASING ECONOMIC ACTIVITY

\$40.8 BILLION IMPACT ON THE REGION
Total impact on regional spending and economic activity resulting from Caltrain investment*

* Values are for 2018–2070 and are in present (2018) value using a discount rate of 4.0%

THE DRAFT VISION OUTLINES A PROGRAM OF INVESTMENTS TO SUPPORT EXPANDED SERVICE

CAPITAL COSTS



\$23 BILLION
TOTAL CAPITAL COSTS*

Capital costs include all projects from SF to Gilroy, knitting together a connected corridor with greatly improved service.



\$9.4B
GRADE
SEPARATIONS



\$7.8B
TERMINAL
IMPROVEMENTS



\$3.3B
RAIL INFRASTRUCTURE
AND SYSTEMS



\$1.4B
STATION
IMPROVEMENTS



\$1.1B
FLEET
UPGRADES

OPERATING COSTS



\$370 MILLION
2040 ANNUAL OPERATING COSTS*

Caltrain is one of the leanest, most efficient transit services in the country. Today's annual operating and maintenance costs are \$135 million, and 73% is covered by fares. The vision would benefit from a similarly high farebox recovery ratio.

\$266M
OPERATING
COSTS
COVERED BY
FAREBOX (72%)



\$104M
ANNUAL
OPERATING
INVESTMENT
NEEDED (28%)

IMPLEMENTING THE VISION



**ELECTRIFYING
CALTRAIN**

2022

OUR WORK TOWARD THE VISION IS ALREADY UNDERWAY

Thanks to the \$2 billion investment in the Caltrain Electrification Project, we are already laying the foundation for implementing the vision. We will deliver this vision in steps and will be mapping out the sequence of near term priorities in the second phase of the Caltrain Business Plan. In order to fully implement the vision, new local, regional, state, and federal resources will be required. Read more about our upcoming electrified service at calmod.org.



SERVICE VISION

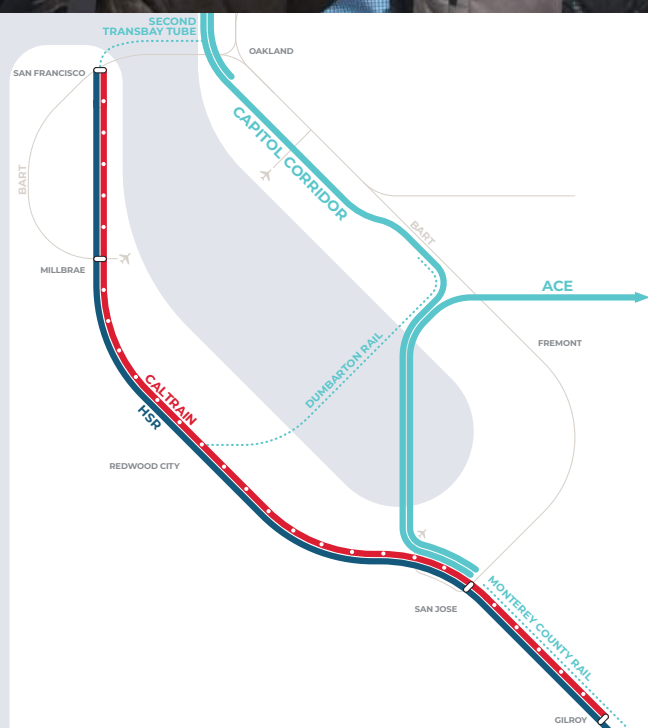
2040

GETTING READY TO DELIVER THE VISION

Growing Caltrain service will also require Caltrain to grow as an agency. The organization will need to be strengthened and resourced in a way that helps deliver major capital projects and expanded operations throughout the corridor. The Caltrain Business Plan includes a detailed evaluation of organizational options that should be considered to make the vision a reality. The full organizational assessment is available at caltrain2040.org/vision.

* Capital and operating costs are in present (2018) value

THE DRAFT VISION LAYS THE FOUNDATION FOR EXPANDED REGIONAL SERVICE



GROWING BEYOND OUR VISION

Caltrain is ready for additional investment as planning for expanded Bay Area rail continues. With additional passing tracks and infrastructure, we can expand service from 12 to 16 trains per hour, creating opportunities for even more service and enhanced connectivity to other regional rail corridors.

SERVICE VISION INVESTMENT

8
CALTRAIN
TRAINS

4
HIGH SPEED
RAIL TRAINS

ADDITIONAL INVESTMENT

4
TRAIN SLOTS
FOR EXPANDED
SERVICE OR
REGIONAL
CONNECTIONS

THE DRAFT VISION IS A SHARED PARTNERSHIP WITH OUR STAKEHOLDERS AND COMMUNITIES

ENGAGING WITH STAKEHOLDERS

21
JURISDICTIONS

26
PUBLIC AGENCIES

93
STAKEHOLDER
ADVISORY
GROUP MEMBER
ORGANIZATIONS

170
STAKEHOLDER
MEETINGS

The vision planning started in 2017. A collaborative effort led by Caltrain with funding from various partners, the vision is the product of hundreds of hours of meetings with cities, counties, business groups, public agency partners, advocates, and public stakeholders throughout the corridor.

The vision is still a draft recommendation that is being discussed with the public. The Caltrain Board is expected to adopt it as early as October 2019, and staff will complete the Caltrain Business Plan by early 2020.

JULY 2018 – JULY 2019
DEVELOPMENT AND EVALUATION
OF GROWTH SCENARIOS

AUGUST 2019
STAFF RECOMMENDATION
FOR CALTRAIN VISION

OCTOBER 2019
REFINEMENT AND ADOPTION
OF CALTRAIN VISION

EARLY 2020
BUSINESS PLAN
COMPLETION

For more information on how to participate in the process, visit:
WWW.CALTRAIN2040.ORG/GET-INVOLVED

Para traducción llama al 1.800.660.4287
如需翻譯請電 1.800.660.4287
Cần dịch thuật, xin gọi 1.800.660.4287

Caltrain2040.org

650.508.6499

BusinessPlan@Caltrain.com

DEVELOPING A LONG-RANGE VISION FOR CALTRAIN



CITY OF MENLO PARK BOOKLET

MAY 2019



CALTRAIN BUSINESS PLAN

A 2040 VISION FOR THE CORRIDOR



 Daily Riders
62,000

 Local Jurisdictions
21

Caltrain is one of the busiest commuter rail systems in the country and demand for our service is growing.

The Caltrain Business Plan is a joint effort with agency partners and communities along the corridor to plan for this growth. The Business Plan will help us develop a better understanding of the region's future transportation needs and will identify opportunities and strategies for how the Caltrain system can help.

WHY THINK ABOUT THE FUTURE OF THE CORRIDOR?

The Bay Area population and economy have continued to grow, leading to:



Traffic congestion and longer, unreliable commutes



Over-crowded trains



Increased cost of transportation and housing

Caltrain provides a cost effective, convenient alternative to driving and connects jobs and housing, but the system will need to grow to meet current and future demand.



Electrification of the Caltrain corridor is already underway and will allow Caltrain to run faster, more frequent service while reducing noise and emissions.



Electrification also creates the potential for expanded Caltrain service that will meet the current and future needs of our region. The Business Plan will identify the best strategies for maximizing this potential by developing a long-term service vision for the corridor, defining the infrastructure needed to support that service vision, and identifying opportunities to fund the implementation of these improvements.

WHAT IS THE CALTRAIN BUSINESS PLAN?

The Caltrain Business Plan includes four major focus areas that address key questions shaping the future of the railroad:



SERVICE

What is the best service Caltrain can provide to meet the needs of our customers and the communities we serve? How many trains should we run? How do we best match service to riders' needs? What infrastructure improvements will be needed to provide the service? How can Caltrain effectively connect to other transit services?



COMMUNITY INTERFACE

What are the benefits and impacts of increasing service on the corridor to each community? How can we work together to grow the railroad in a way that balances the needs of all communities along the corridor with the need to expand service and operate a safe and efficient railroad? How can we ensure this planning process and the outcomes are equitable?



BUSINESS CASE

Why should we choose one service vision over another? How can we maximize the value of current and future investments in the Caltrain corridor? How much will the service cost to operate? How will we fund it?



ORGANIZATION

What is the best organizational structure for overseeing and growing Caltrain service in the future?

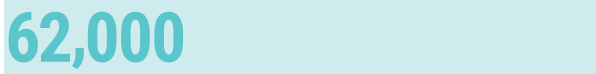


CALTRAIN RIDER STATS

Today, Caltrain operates a commuter-focused service that carries more than 60,000 riders every weekday.



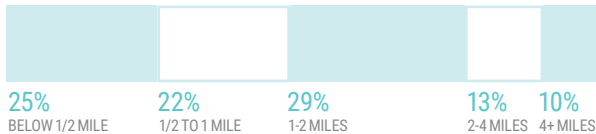
Daily Riders



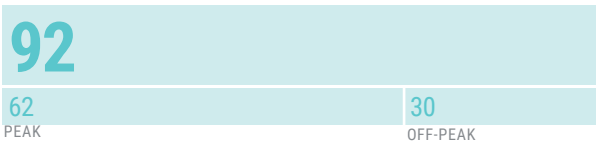
Riding 5+ Days Per Week



Access Distance to Station



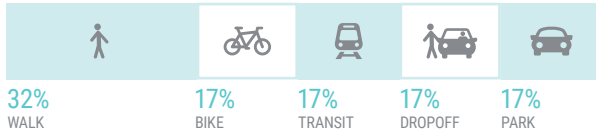
Weekday Trains



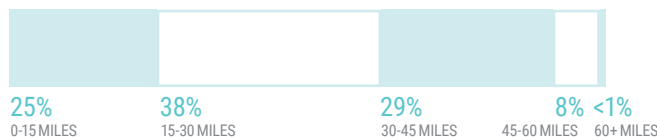
Riding to Work



Mode of Access



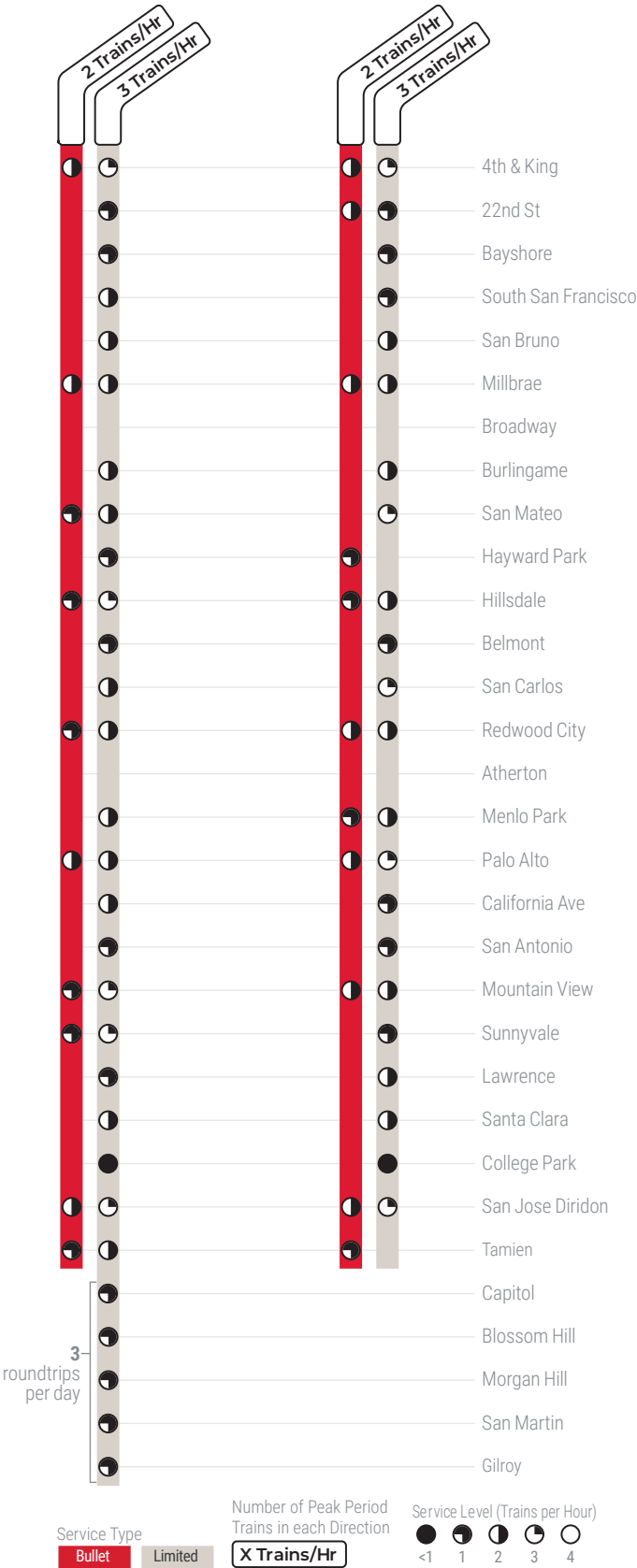
Distance on Train



EXISTING PEAK HOUR SERVICE

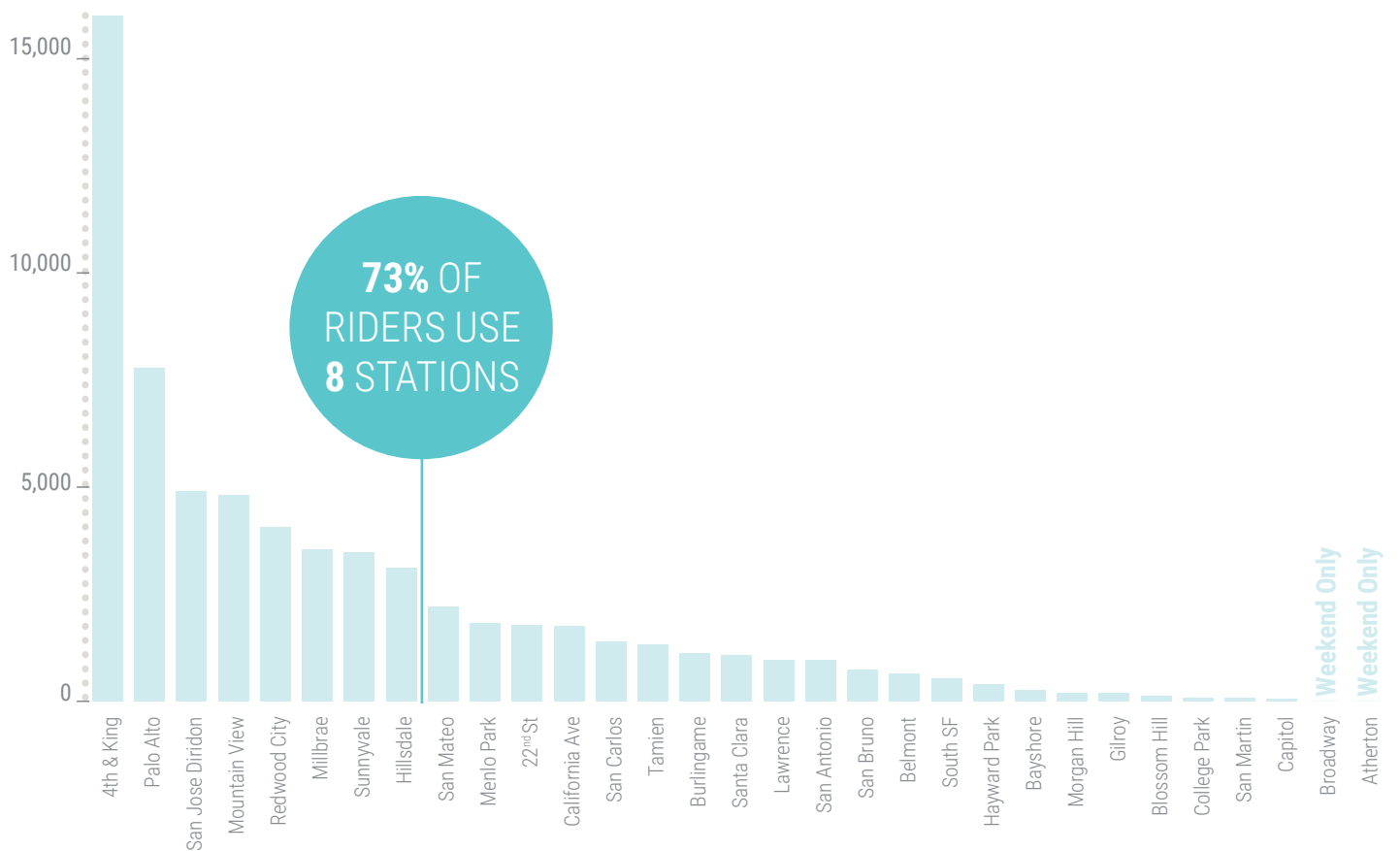
AM Northbound/
PM Southbound
(5 Trains)

AM Southbound/
PM Northbound
(5 Trains)

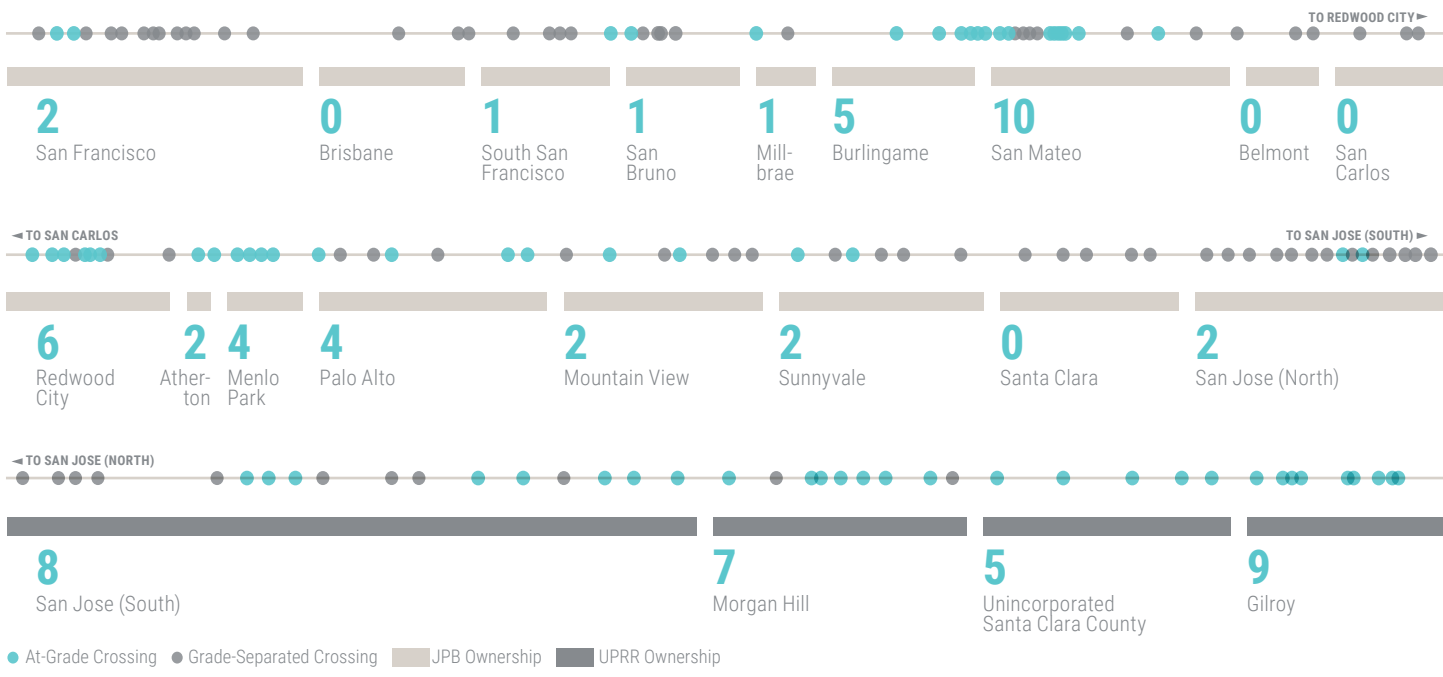


Notes: This diagram provides a simplified representation of one hour of peak period service.

STATIONS BY WEEKDAY RIDERSHIP

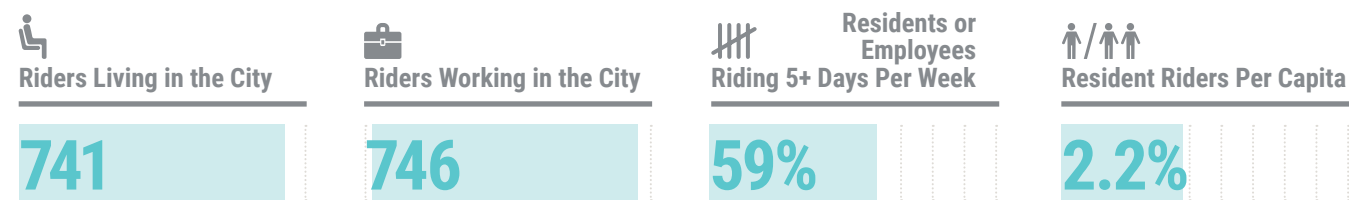


CORRIDOR TRACK CROSSINGS

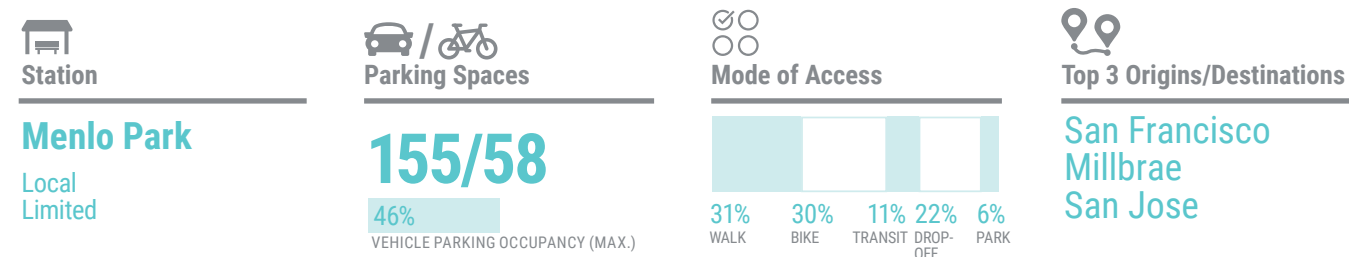


Sources: Caltrain Ridership Data, 2017; Caltrain Timetables, 2018; Caltrain Parking Occupancy Report, 2017; Caltrain 2014 On-Board Transit Survey; CPUC Collision Database, 2016; Fehr&Peers Traffic Counts, 2016; Caltrain Electrification EIR; US Census Bureau Population Estimates Program.

HOW CALTRAIN IN MENLO PARK IS USED TODAY



STATION CHARACTERISTICS

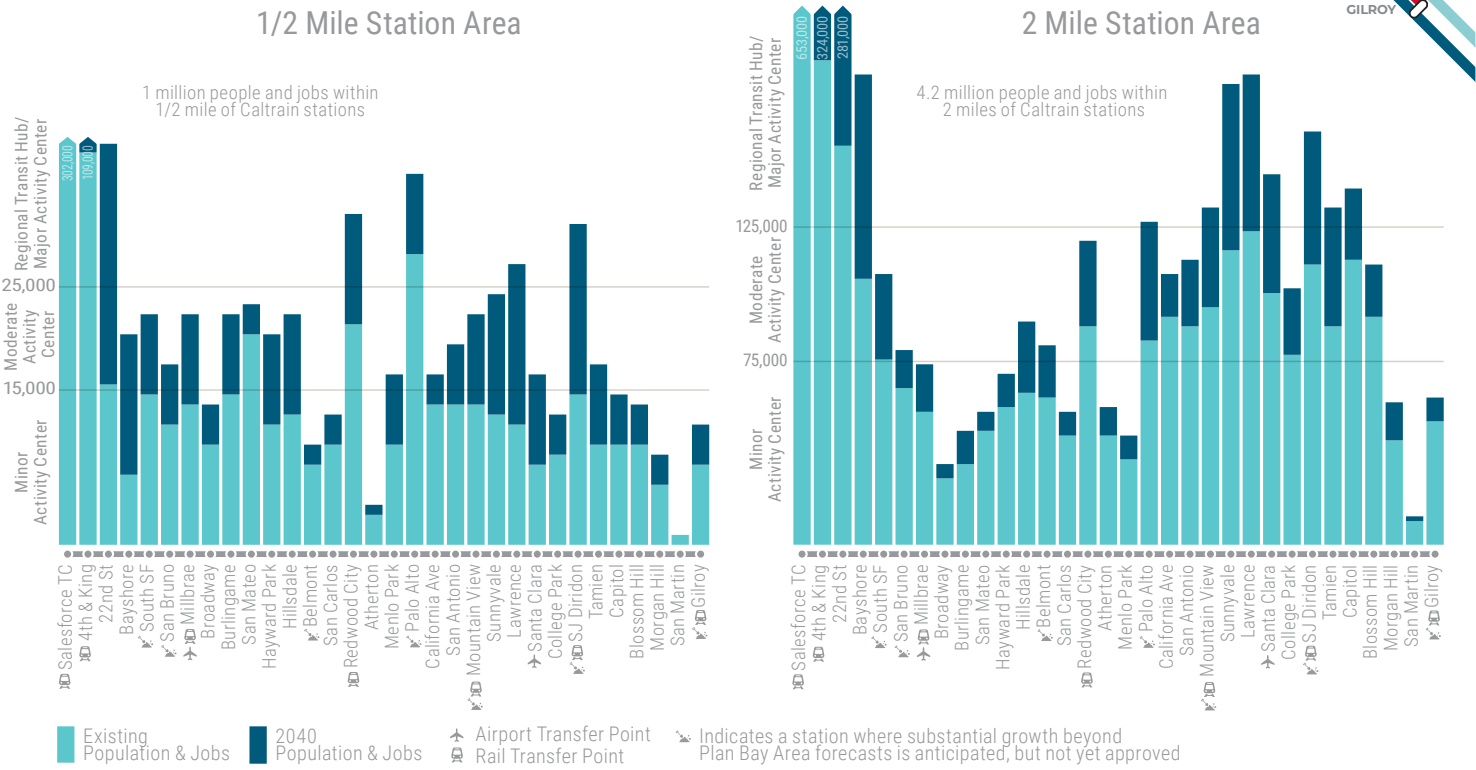


CALTRAIN IN 2040

The Caltrain Business Plan is asking the question “How should Caltrain Grow?” To do this we are considering what the corridor and region will look like in 2040, including how many people will want to live and work along the Caltrain corridor and what the role of the railroad should be in helping keep everyone moving.

The Business Plan team has developed three distinct, illustrative “growth scenarios” or “visions” for how Caltrain could grow to serve expanded demand for rail service. The following pages provide an overview of these “growth scenarios” and show what they could mean for communities along the corridor.

CHANGING LAND USE



SERVICE VISION DEVELOPMENT

How we want to grow:

The team developed service plans that attempt to balance coverage and market demand goals, emphasize clock-face schedules, integration with the state and regional transportation network and timed-transfers.



**BALANCING
MARKET &
COVERAGE
SERVICE**



**CLOCK-FACE
SCHEDULING**



**SEAMLESS
NETWORK
INTEGRATION**



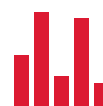
**COORDINATED
TRANSFERS**

Growing in a constrained corridor:

All of the service concepts developed are an exercise in compromise. The Caltrain corridor is physically constrained and the Joint Powers Board must balance competing objectives of changing markets and land uses, historic station spacing, and multiple types and speeds of train service. There are no perfect solutions and any future service plan must reconcile technical challenges related to service differentiation, infrastructure investments, and the total volume of trains running in the corridor.



**SERVICE
DIFFERENTIATION**

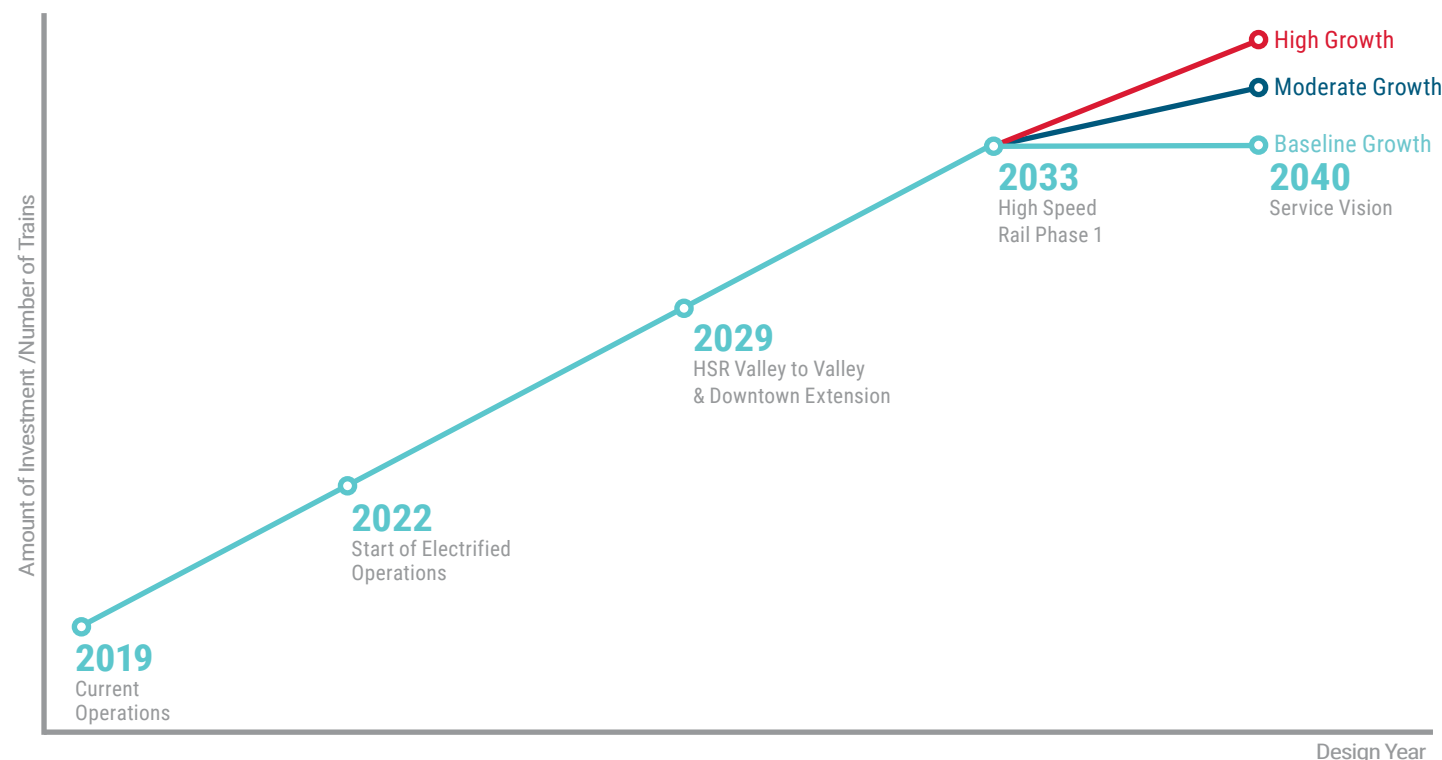


**PEAK
SERVICE
VOLUME**



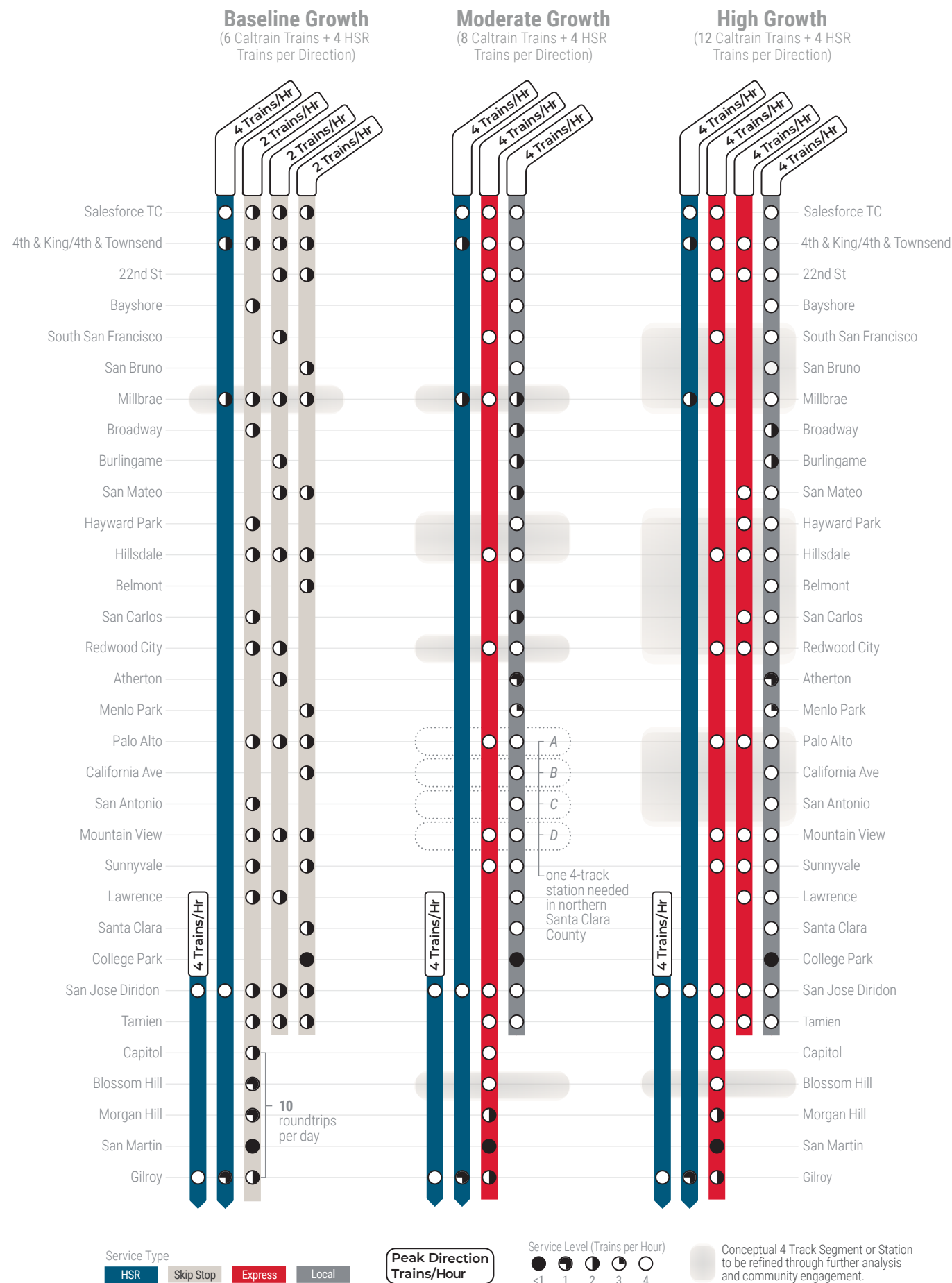
**SERVICE
INVESTMENTS**

DIFFERENT WAYS TO GROW



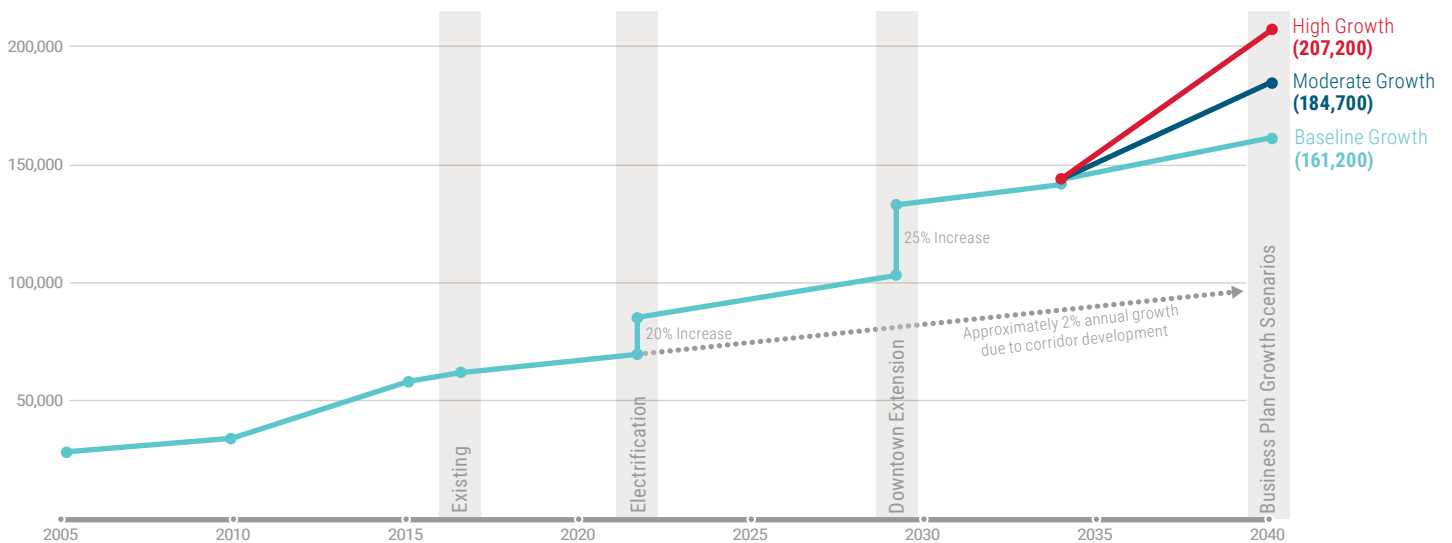
Caltrain has developed three long-range service scenarios that illustrate different choices for how the railroad could grow over time. Each of these scenarios incorporates and builds on the existing projects and policy commitments in the corridor. Although these scenarios are illustrative, they have been developed at a high level of detail to provide a realistic and nuanced picture of how rail service in the corridor could grow and what kinds of trade-offs might be required.

CONCEPTUAL PEAK HOUR SERVICE SCENARIOS



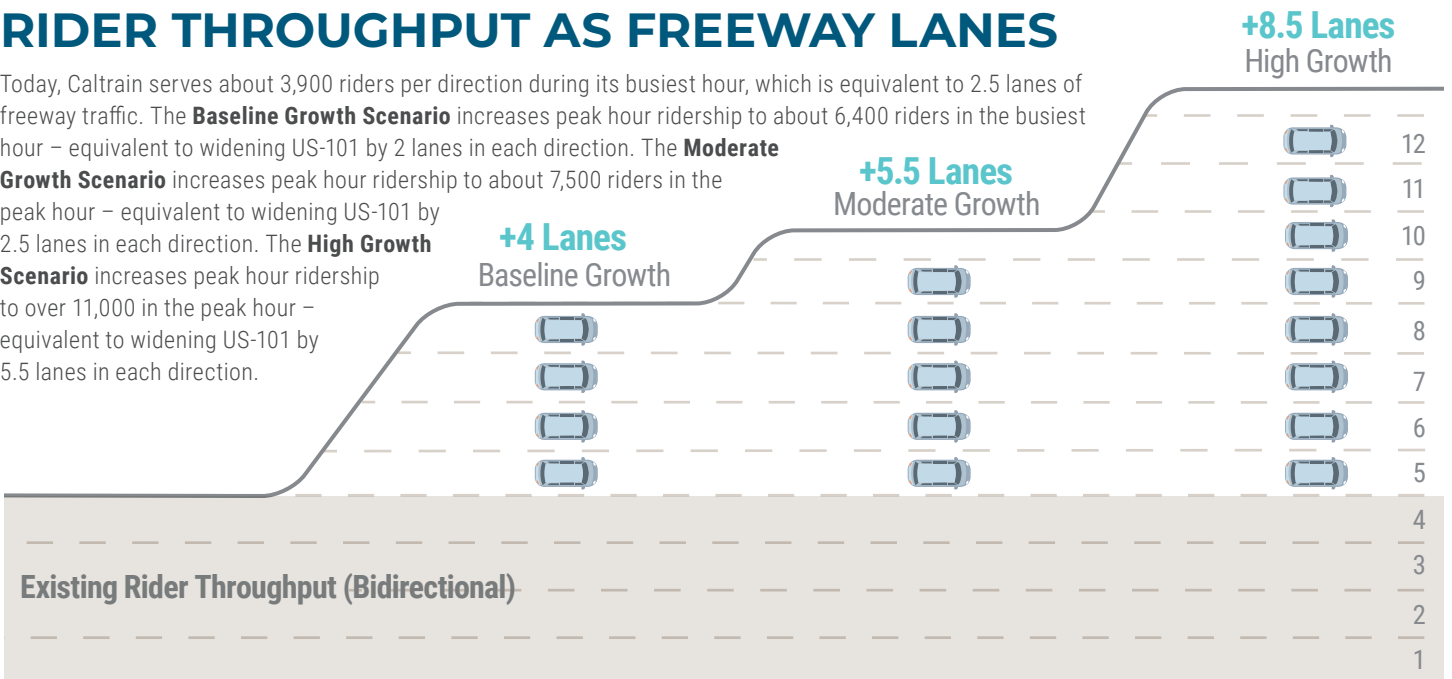
Notes: These service patterns and infrastructure projects represent illustrative concepts carried forward for business planning purposes. Actual service patterns and infrastructure may vary depending on corridor-wide and jurisdiction-specific feedback and will be refined and confirmed based on Board direction and subsequent planning and analysis. Ridership projections are derived from analysis of potential service patterns and land use changes included in Plan Bay Area or subsequently approved by local jurisdictions.

WEEKDAY RIDERSHIP DEMAND OVER TIME



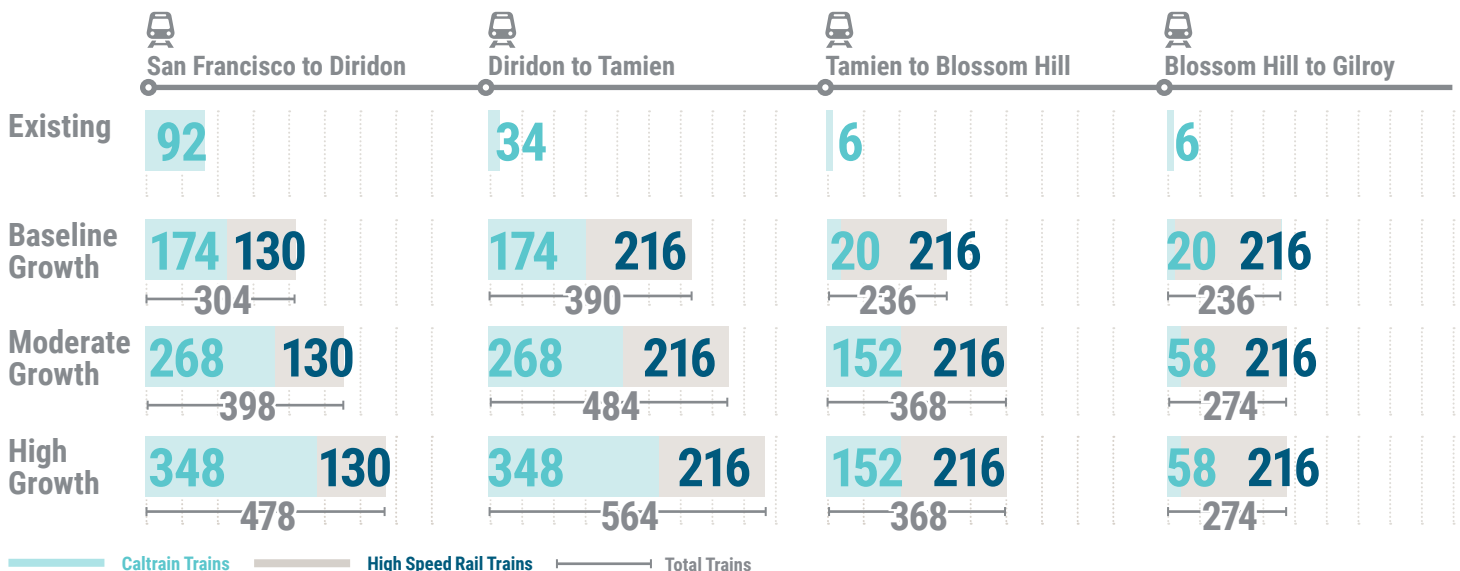
RIDER THROUGHPUT AS FREEWAY LANES

Today, Caltrain serves about 3,900 riders per direction during its busiest hour, which is equivalent to 2.5 lanes of freeway traffic. The **Baseline Growth Scenario** increases peak hour ridership to about 6,400 riders in the busiest hour – equivalent to widening US-101 by 2 lanes in each direction. The **Moderate Growth Scenario** increases peak hour ridership to about 7,500 riders in the peak hour – equivalent to widening US-101 by 2.5 lanes in each direction. The **High Growth Scenario** increases peak hour ridership to over 11,000 in the peak hour – equivalent to widening US-101 by 5.5 lanes in each direction.



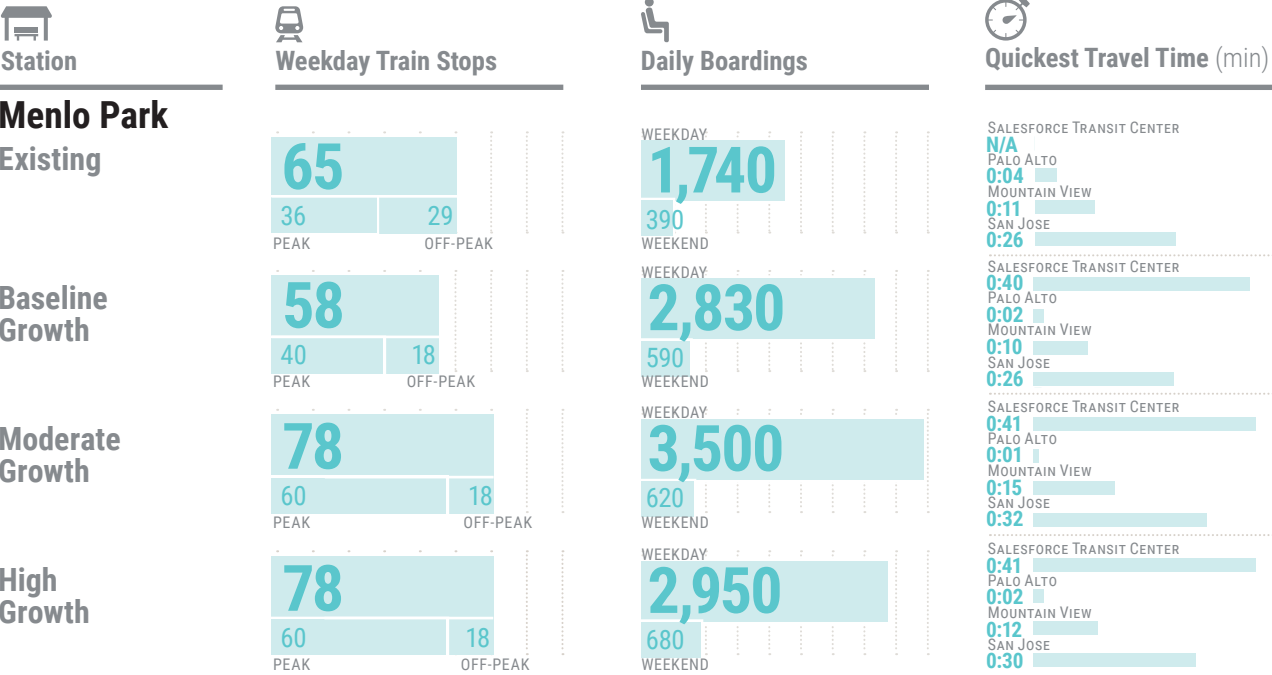
*Assumes vehicle occupancy of 1.1 persons/vehicle and lane capacity of 1,500 vehicles/hour.

HOW MANY TRAINS PER DAY?



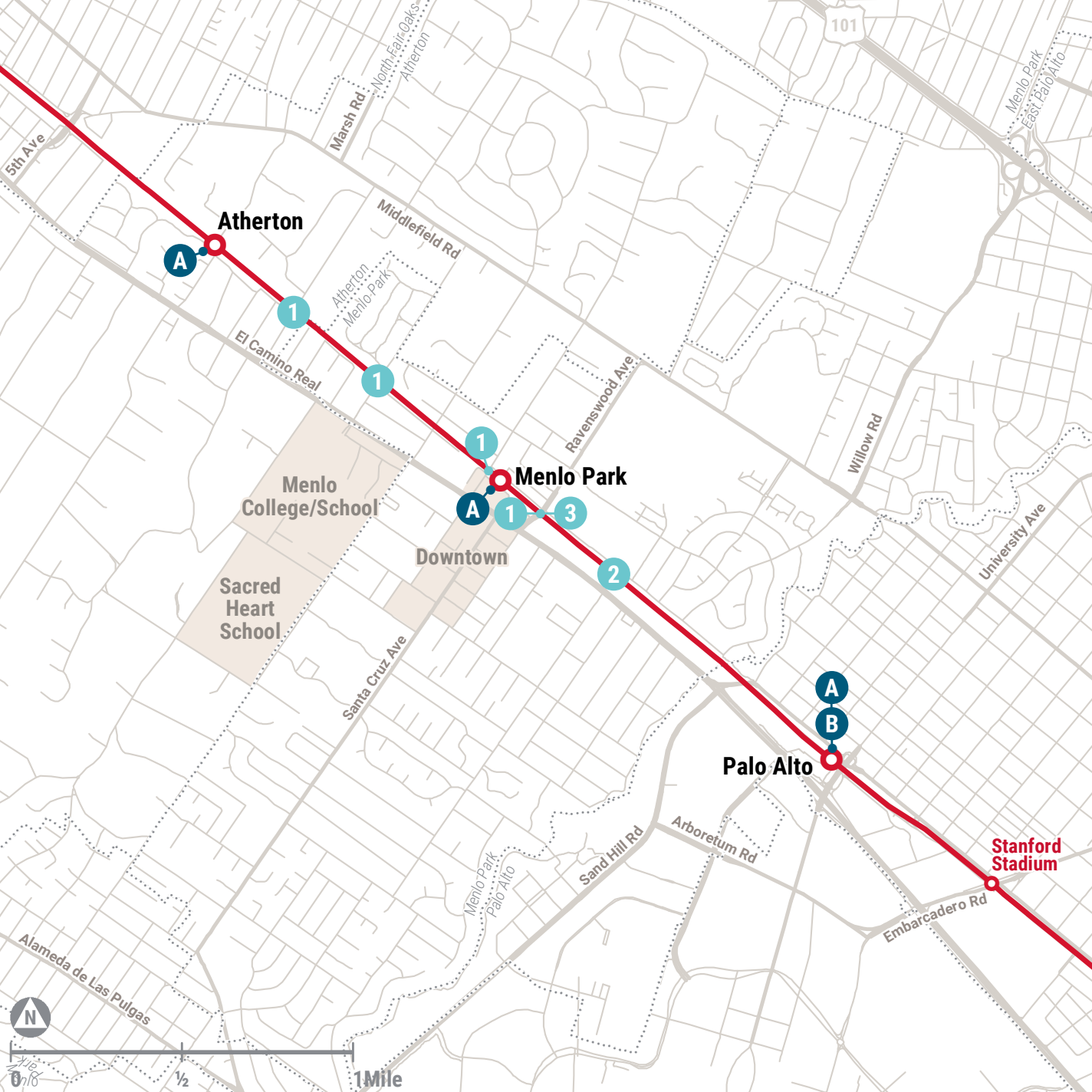
Note: Graphic includes only Caltrain and HSR service and does not account for ACE, Capitol Corridor, or Freight/Amtrak trains.

SERVICE CONCEPTS IN MENLO PARK



Notes: These service patterns represent illustrative concepts carried forward for business planning purposes. Actual service patterns may vary depending on corridor-wide and jurisdiction-specific feedback as well as Board direction and subsequent analysis. Ridership projections are derived from analysis of potential service patterns and land use changes in Plan Bay Area or subsequently approved by local jurisdictions.

CORRIDOR CONTEXT & CAPITAL PROJECTS



Legend	Current Projects	Potential Projects
Caltrain line	Ravenswood Ave, Oak Grove, Glenwood Ave, and Encinal Ave Grade Separation Feasibility Study	Station enhancements and platform extensions
Key Destination	Middle Avenue Bike/Ped Underpass	Conceptual 4-Track Station
	Caltrain Grade Crossing Improvement Program - Ravenswood	
	Electrification	

Baseline Growth			
Moderate Growth			
High Growth			




Notes: These infrastructure projects represent concepts carried forward for business planning purposes. Actual infrastructure may vary depending on corridor-wide and jurisdiction-specific feedback.

Sources: Caltrain Ridership Data, 2017; Caltrain Timetables, 2018; Caltrain Parking Occupancy Report, 2017; Caltrain 2014 On-Board Transit Survey; CPUC Collision Database, 2016; Fehr&Peers Traffic Counts, 2016; Caltrain Electrification EIR; US Census Bureau Population Estimates Program.

CROSSING THE TRACKS

Gate down times shown are indicative projections extrapolated from existing crossing performance. They are examples of “worst case” gate downtimes that could occur if no grade separations or grade crossing improvements were made. The financial component of the Caltrain Business Plan is planning for substantial investments in grade separation and crossing improvements across all scenarios.



 Caltrain2040.org  650.508.6499  BusinessPlan@Caltrain.com

