Local Policy Maker Group (LPMG) Meeting

Thursday, July 25, 2019
5:30 p.m. – 7:30 p.m.
SamTrans Offices – Bacciocco Auditorium 2nd Floor
1250 San Carlos Ave., San Carlos

Agenda

1. Call to Order
2. Staff Report
3. Caltrain Business Plan
4. Caltrain Electrification Project
5. California High-Speed Rail: Staff-Recommended State's Preferred Alternative (Presented by California High-Speed Rail Authority Staff)
6. Public Comments
7. LPMG Member Comments/Requests
    a. Grade Separation Toolkit
8. Next Meeting
    a. Thursday August 22, 2019 at 5:30pm
9. Adjourn

All items on this agenda are subject to action

SUMMARY OF DRAFT RECCOMENDATION FOR CALTRAIN'S LONG RANGE SERVICE VISION

The following memo supplements the PowerPoint presentation provided to the Peninsula Corridor Joint Powers Board at their August meeting. It provides a high level summary of the service planning and business case analysis completed as part of the Caltrain Business Plan to date and explains the importance of choosing a "Long Range Service Vision" at this stage in the planning process. More information can be found here, www.Caltrain2040.org/Long-Range-Service-Vision/.

The memo then describes staff's draft recommendation for the Long Range Service Vision and explains why staff has recommended this specific vision relative to other options considered. Finally, the memo includes a narrative description of the recommended Vision and a draft of the precise language that the Board would be asked to consider for adoption in October, pending revisions or changes based on input received from the Board and through outreach planned in August and September.

A LONG RANGE VISION FOR CALTRAIN SERVICE

The Caltrain Business Plan is an expansive planning process that has been ongoing for more than a year. A major focus of the plan has been to develop analysis of different long range service options for Caltrain and to weigh the costs, revenues, benefits and impacts of these options through a detailed "Business Case" analysis. At this stage of the Business Plan process, Caltrain staff has developed and evaluated three distinct "growth scenarios" that provide illustrative options for how the Caltrain Service could grow by 2040. Based on this analysis, staff has now developed a single, recommended "Long Range Service Vision" for consideration and potential adoption by the Board.

Choosing a "Long Range Service Vision" is an important milestone in the Business Plan process. Having a clearly articulated goal for the quantity and type of service that the railroad aspires to provide in the future will provide staff with the critical guidance needed to complete the Business Plan. Once adopted, the Long Range Service Vision will create a framework that allows staff to "work backwards" from 2040, developing analysis showing how the Vision can be phased, funded and implemented over time. This analysis will be conducted in the fall of 2019 with a goal of completing the Business Plan by early 2020.

A REGIONAL VISION BUILT ON REGIONAL INVESTMENTS

Selection of a Long Range Service Vision will also allow Caltrain staff to engage efficiently and constructively in the development of other long range plans and projects throughout the region.

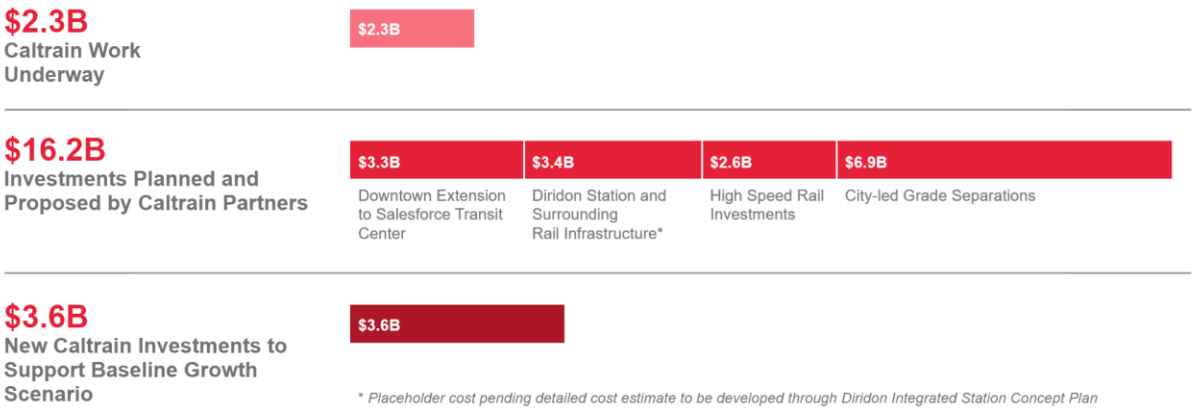
This is particularly important since the Caltrain corridor interfaces with many different local, state and regional transportation systems and investments. While the Long Range Service Vision is fundamentally focused on Caltrain, the Vision must account for and integrate a vast array of transportation projects that have been planned by corridor cities and regional and state partner agencies. Key projects that directly influence Caltrain's corridor and long range service ambitions include;

- California's High Speed Rail System
- The Downtown Extension to the Salesforce Transit Center
- The rebuilding of Diridon Station in San Jose
- Multiple grade separation projects planned and contemplated by corridor cities

The Caltrain Business Plan and Caltrain's Long Range Vision have been deliberately developed to integrate and build on all of these projects. One of the goals of the 2040 Vision is to build a "big tent" that shows how all of the investments currently being planned in the corridor can fit together as part of a cohesive whole, with expanded Caltrain service further enhancing their value and importance.

It is important to note at the outset, that these regional and partner projects also drive a significant portion of the overall investment costs that are considered within the Long Range Service Vision. Figure 1 shows the total set of capital investments that have been included in the "baseline" growth scenario, broken down by major source.

Figure 1- Capital Investments Included in the "Baseline" 2040 Growth Scenario



All costs have been adjusted to 2018 dollars

The costs shown in Figure 1 total to $22.1 billion in 2018 dollars and are divided into three categories;

- **Caltrain Work Underway**: Including electrification and other major capital projects that are already in progress

- **Investments Planned and Proposed by Caltrain Partners:** Including major terminal projects like the Downtown Extension (DTX) and Diridon Project as well as High Speed Rail Investments and those grade separations that are already actively being planned by local jurisdictions. While all of these projects are in active stages of planning, most are substantially unfunded.
- **New Caltrain Investments to Support the Baseline Growth Scenario:** This category includes the essential investments that the Caltrain believes will be needed by 2040 to support the baseline level of blended service. Examples include additional electrified rolling stock (to fully electrify the fleet and expand all consists to 8-car trains), level boarding, expanded storage and maintenance facilities and additional grade crossing improvements. These projects are not funded.

These costs have been used as the basis, or "baseline," for looking at the incremental investment that would then be required to achieve the higher levels of Caltrain service contemplated in the "moderate" and "high" growth scenarios.

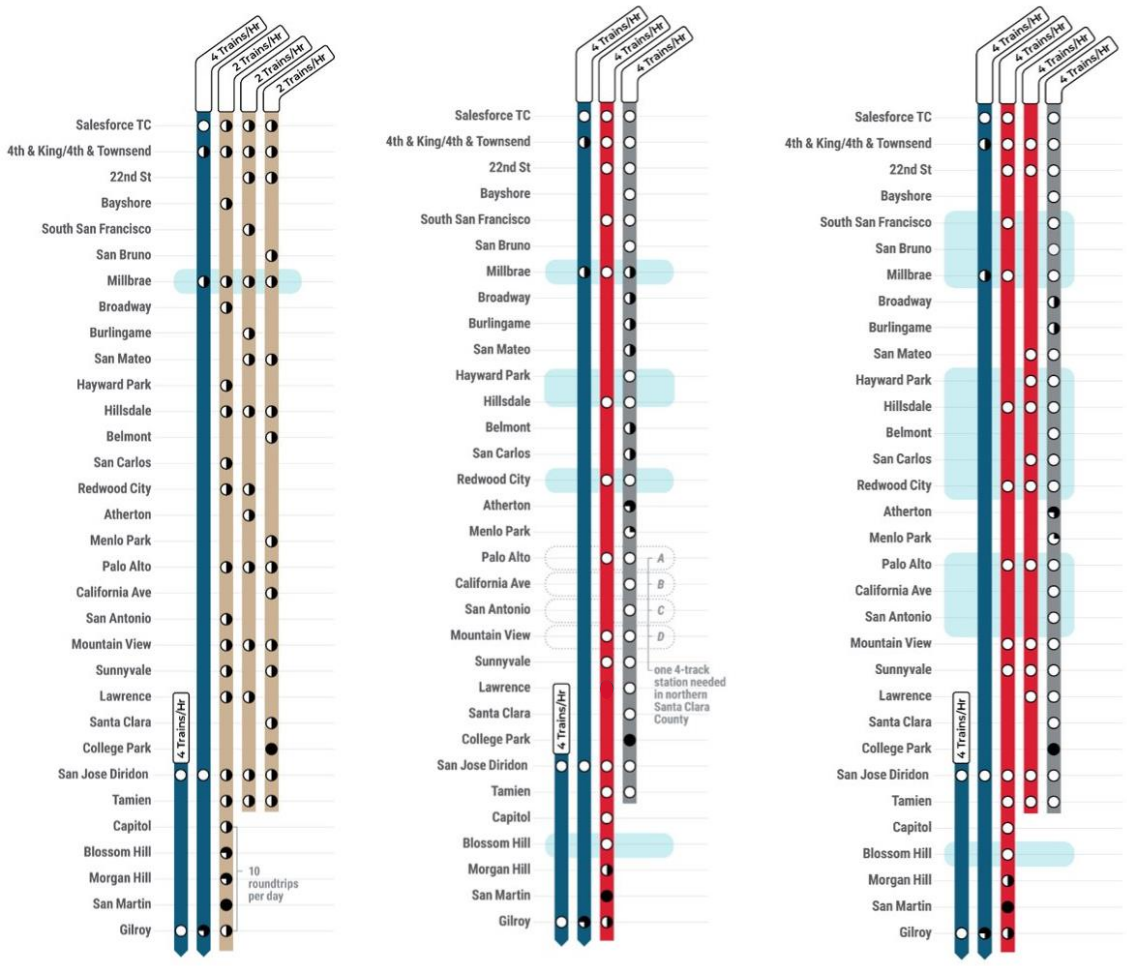
DEVELOPMENT OF "GROWTH SCENARIOS"

Much of the technical work of the Caltrain Business Plan over the past year has been focused on the development and refinement of three illustrative "Growth Scenarios," each representing a different option for the kind of service that Caltrain could provide in 2040 given different levels of supporting investment. The three scenarios include a "baseline" level of service (consistent with Caltrain's prior long range planning and the regional and partner projects discussed above) and two additional scenarios that consider what it might look like if Caltrain were to further expand service (the "moderate" and "high" growth scenarios).

Although illustrative, these growth scenarios where developed at a high level of detail through an extensive service planning process (diagramed in Figure 2). Details of each of these scenarios are shown in Figure 3 and can also been reviewed in the accompanying presentation and on the project website, www.caltrain2040.org.

Figure 2 – Growth Scenario Development Process

Figure 3 – Growth Scenario Detail



The process to develop the different growth scenarios evaluated in the Caltrain Business Plan was conducted in a highly transparent and collaborative manner. Throughout the development of the Growth Scenarios, Caltrain staff have met on a monthly basis to share information and discuss findings with a technical team of partner agency staff (the Project Partner Committee) as well as with corridor local jurisdiction staff (the City and County Staff Group) and corridor elected officials (the Local Policy Maker Group). Additionally, the project team has held quarterly stakeholder meetings with a Stakeholder Advisory Group representing over 90 different organizations and has held multiple rounds of one on one meetings with every city in the corridor. The team also developed customized "booklets" for each city, showing the impacts and benefits of different growth scenarios on their jurisdiction. All told, Caltrain staff have presented Business Plan materials at over 150 stakeholder meetings during the course of the last year.

WEIGHING CALTRAIN'S CHOICES

The detailed illustrative growth scenarios developed through the service planning process were used to model ridership, specify and estimate the costs of required capital investments, and to model detailed operating costs. These outputs were then used as the basis for developing a "Business Case" analysis of each scenario. The Business Case analysis is a structured framework that helps analyze and weigh the costs and benefits of the different options. The analysis examines five areas, each of which is presented in detail in the accompanying presentation and is discussed briefly in this memo.

Figure 4 – Areas of the Business Case Analysis

SERVICE COMPARISION

The service comparison section of the business case looks at the key service, and service-related qualities of the different scenarios and compares them on a head to head basis. The accompanying presentation provides a detailed analysis. In general, the quality of service across the options as measured by various metrics improves as the level of train service and investment increase. Conversely, however, the increased service included in the "high growth" scenario requires the construction of extensive 4-track segments in the corridor – complex infrastructure that has the potential to drive significant community impacts. A detailed service comparison is provided in the accompanying presentation and a summary table of key metrics is shown in Figure 5.

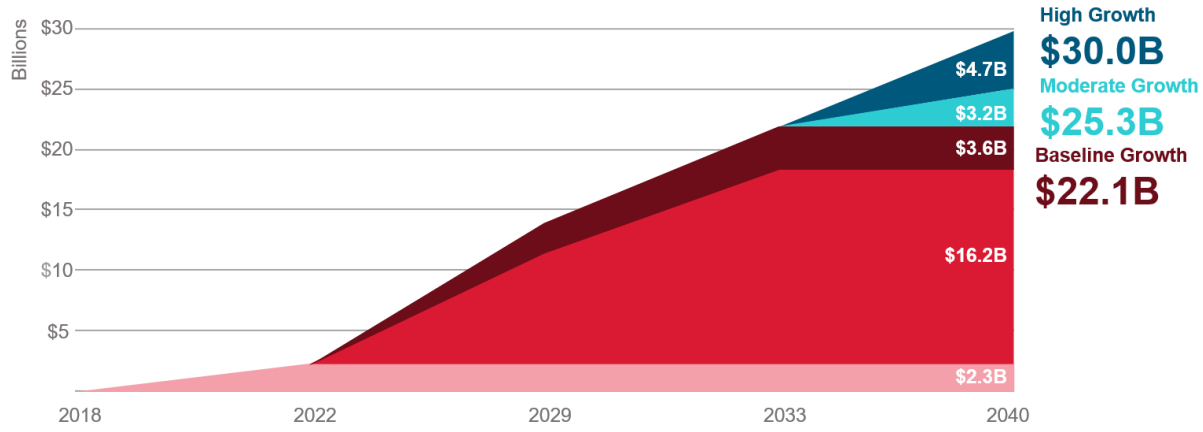
Figure 5 – Summary of Key Comparative Service Metrics

	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

FINANCIAL ANALYSIS

Detailed capital cost estimates for each scenario, building incrementally off of the "baseline" investments described previously were developed for the moderate and high growth scenarios. Figure 6 shows the baseline investment described previously, profiled over time, with the incremental additional investment required to achieve the "moderate" or "high" growth scenarios shown as an additional increment.

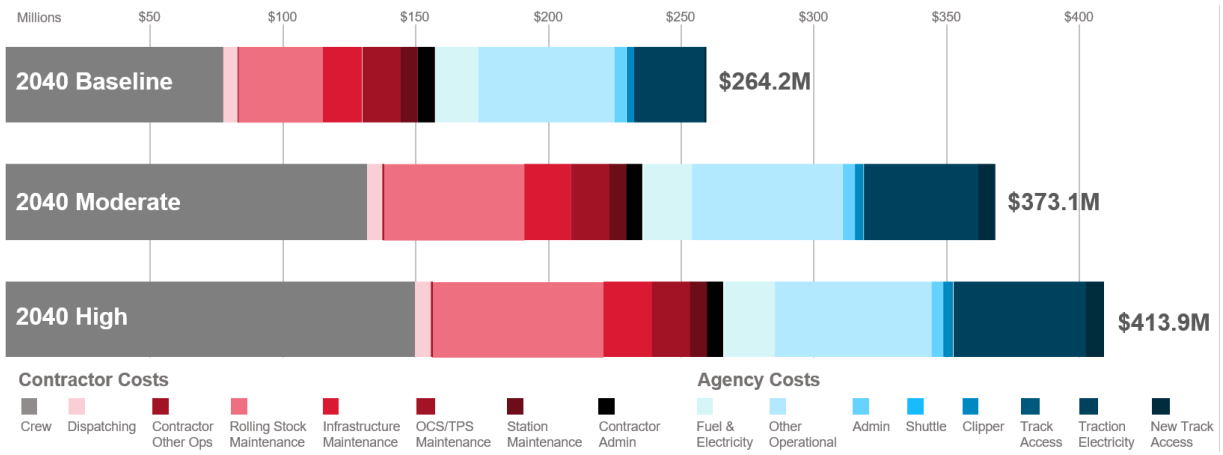
Figure 6 – Total Capital Investment by Scenario



All costs have been adjusted to 2018 dollars

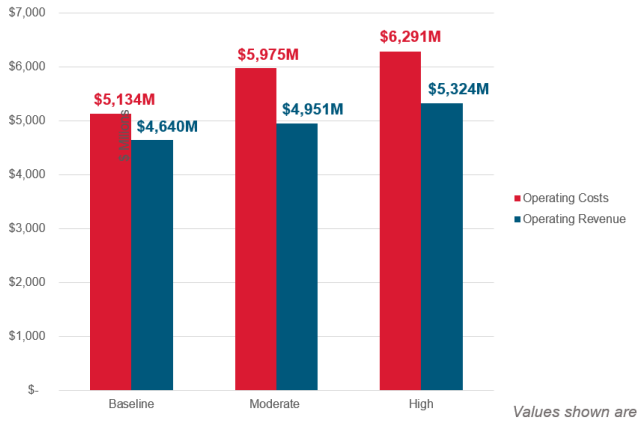
Figure 7 shows the projected 2040 annual operating and maintenance costs for each of the scenarios (in 2018 dollars).

Figure 7 – Total Operating Costs by Scenario



Finally, Figure 8 shows the net present value of total operating costs and projected revenues projected over the 2018-2070 period (the lifecycle timeframe of key investments included in each of the scenarios) along with the average fare box recovery rate across that same period. Additional financial analysis and metrics are reported in the accompanying presentation.

Figure 8 – Net Present Value of Total Operating Costs and Revenues by Scenario, 2018-2070



Operating Deficit 2018-2070 PV	Farebox Recovery Average (2018-2070)	
($494M)	82%	Baseline Growth
($1,024M)	75%	Moderate Growth
($966M)	77%	High Growth

Values shown are present (Year 2018) value using a discount rate of 4.0%

CALTRAIN ECONOMIC ANALYSIS

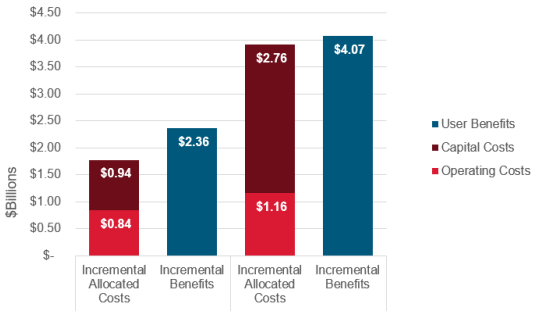
The Business Plan team also developed a series of analyses examining the economic impact of the different growth scenarios on Caltrain riders. This analysis considers the various ways that improved Caltrain service could directly benefit riders, monetizes these benefits and compares them to costs. This analysis is done on a marginal basis against the baseline scenario meaning that calculations are based on the incremental costs and benefits of the "moderate" or "high" growth scenarios relative to the baseline. Costs included in the analysis have also been "allocated" meaning that the overall costs of shared investments (eg projects that serve multiple purposes or benefit multiple users beyond just Caltrain) have been proportioned so as to fairly weigh Caltrain "costs" against Caltrain "benefits." Calculations are performed for the period between 2040 and 2070, when each growth scenario is assumed to be fully operational. Figure 9 shows directly calculated benefits while Figure 10 shows the net present value of monetized benefits weighed against the value of incremental, allocated costs.

Figure 9 –Estimated Incremental Economic Benefits to Caltrain Users Relative to Baseline, 2040-2070

		Moderate Growth		High Growth	
Benefit	**Unit**	**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
VMT Savings from New Transit Users (Avoided Auto Trips)	*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

Figure 10 – Net Present Value and Benefit / Cost Ratio of Caltrain User Benefits Weighed Against Allocated Costs, 2040-2070



Net Present Value 2018-2070 PV	Benefit Cost Ratio 2018-2070	
$0.58B	1.33	Moderate Growth
$0.15B	1.04	High Growth

REGIONAL ANALYSIS

The Business Plan team also developed analysis and qualitative discussion of a number of "regional" benefits that would result based on different levels of investment in the Caltrain system. These benefits accrue to a general population and not just users of the system. These regional benefits are described in detail in the accompanying presentation and are summarized in Figure 11 below

Figure 11 – Summary of Regional Benefits

	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

FLEXIBILITY AND UNCERTAINTY

Finally, the Business Plan team considered the degree of flexibility and uncertainty inherent in the growth scenarios examined. The detailed service plans developed in each scenario are "illustrative," not definitive and much work remains both within and beyond the Business Plan process to examine specific service patterns and service levels at individual stations.

Additionally, all of the 2040 growth scenarios have been developed in a way that includes and integrates regional projects like High Speed Rail, the Downtown Extension and the rebuilding of Diridon Station. These projects are in various stages of planning and design but all currently lack the funding. There is a great deal of potential uncertainty regarding the timeframe in which they will be delivered and the final form they may ultimately take. Similarly, while larger regional visions for a greatly expanded, integrated rail network are ongoing there is a tremendous amount of uncertainty around how and when these concepts may ultimately manifest.

The issues of service flexibility and uncertainty around regional projects are particularly relevant in the context of understanding where overtake infrastructure may be required. The location and extent of required overtake infrastructure is highly sensitive to what service is being accommodated. This especially true in the "High growth" scenario where the large volume of blended train traffic creates a need for long overtakes used by multiple different operators. The

"moderate" growth scenario has over take infrastructure needs that are more modest and can be planned for more discretely.

Finally, this section of the presentation also discusses a number a series of initial financial sensitivity tests to understand how key business metrics associated with the different growth scenarios may vary in response to changing conditions.

RECCOMENDED LONG RANGE SERVICE VISION

SUMMARY AND BASIS FOR RECCOMENDATION

Caltrain staff has developed a draft recommendation for the Long Range Service Vision. This recommended Vision is described in detail below, but, as it relates to the options studied, 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.

The extensive analysis conducted during the Business Plan process has shown that there a strong demand for expanded Caltrain service and the business case analysis conducted as part of the plan has shown that there is a clear case, based in 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" 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.

DESCRIBING THE VISION

The Long-Range Service Vision for Caltrain provides a world class service that is tailored to the future needs of our local communities, the region and the state. It responds to and integrates the committed and planned investments in the Caltrain corridor to deliver the greatest value to the public and region, while maintaining the flexibility to respond as local and regional needs develop.

The Key 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

Major Additional Benefits

The Vision will bring huge benefits beyond direct improvements to service. Once complete, the Vision will deliver;

- 1.3 million hours of travel time savings for existing and new Caltrain riders every year as compared to the baseline scenario
- 300 million vehicle miles not traveled every year as compared to the baseline scenario
- $40.8 billion in regional economic output created by ongoing capital and operating investments
- By 2040 Caltrain service will add between $25 and $37 billion in property value premiums to residential and office properties within 1 mile of stations. (This analysis is conservative and excludes San Francisco as well as commercial, non-office properties for which estimates could not be reliably developed)
- The Vision will result in a reduction of nearly 2 million metric tons of CO2 as well as other air quality improvements

Ready to Grow with the Region

- The Vision has been designed to integrate and add value to the many local, regional and state investments that are being planning in the Caltrain corridor. These include projects like grade separations, major improvements to terminal infrastructure and stations in San Francisco and San Jose, and the integration of the state's high speed rail system.
- The vision also anticipates the ongoing role of Caltrain in a regional rail network that in addition to high speed rail could include a new rail service in the Dumbarton corridor, a second transbay crossing, service to the Monterey peninsula and ongoing improvements to service on Capital Corridor and ACE.
- As part of the Business Plan process, staff evaluated how the service and infrastructure contemplated in the recommended Vision could scale up to an even "higher" level of growth that would allow for up to 16 trains per hour per direction and even greater regional integration and further expansion of rail. At this time, there is still a great deal

of uncertainty around the future of regional rail and Caltrain does not feel that we can independently recommend moving forward with a maximum growth approach given the high costs and potential for extensive community impacts.

- Instead, we are recommending a "do not preclude" approach that would allow for this future growth to proceed once key regional decisions and funding commitments are in place. In practice, this would mean limiting the sale or encumbrance of certain JPB land, accounting for the possibility of more trains when we do terminal and facility planning, and considering the potential need for 4 tracks as certain grade separations are designed. At the same time, Caltrain will actively participate in evolving regional conversations and will help the region and the state evaluate the feasibility and benefits of an expanded and integrated rail network. If the region is truly prepared to move forward with a full regional rail expansion Caltrain will be ready.

Capital Costs

- Achieving the Vision will also be costly- the total range of all projects contemplated to achieve the Vision from Gilroy to San Jose include up to $25 billion (this includes roughly $2.5 billion of Caltrain investments already paid for and underway).
    - The significant majority of this cost is driven by projects that are being planned by corridor partners (DTX in San Francisco, grade separations all along the corridor, the potential cost of the Diridon Station project, and HSR improvements- collectively account for more than $16 billion of the total).
    - The goal of the Vision is to help knit these projects together and to add value to all of them by providing greatly improved Caltrain service. Direct Caltrain investments contemplated (beyond the existing projects already underway) total to roughly $6.5 billion)
- New sources of funding will clearly be required to address this level of need- including to even come close to achieving the baseline. The $22 million a year contributed by member agencies to the capital budget is not going to be sufficient to do any of this.

Operating Costs

- Projected 2040 operating annual costs for the Vision are $373.1 million a year in current dollars (compared to about $135 million in 2018). By way of comparison, achieving a "baseline" level of growth would cost about $265 million a year in 2040
- Financial projections show that the efficiency of the system will remain high- we are projecting an average farebox recovery ratio of 75% (holding today's fare levels constant with inflation). Nonetheless, the need for subsidy will grow as the size of the system increases. Caltrain may need as much as $90 million a year in operating subsidy (compared to the roughly $36 million in subsidy it receives today- $30 million of which come from local member agencies). As the business plan continues we will be exploring ways to further increase system efficiency and generate additional revenues that would offset the need for direct subsidy. Nonetheless, new funding is clearly needed.

Incremental Improvements

- The Vision is not one project- it can be implemented incrementally over time with improvements to service and capacity delivered along the way. During the remainder of the Business Plan Caltrain will work to identify key incremental steps that can be delivered in the near- and medium term timeframes.
- We don't need to wait until 2040- the first major improvement in service is coming soon. Electrification, in 2022 is the first step and will mark a substantial step forward towards the realization of this vision with significant service improvements throughout the corridor.

CALTRAIN'S LONG RANGE SERVICE VISION – DRAFT LANGUAGE

The following is the specific, draft "Service Vision" language that the JPB would be asked to consider for adoption in October. This language will be reviewed and revised based on input from the Board and comments received through stakeholder and public outreach.

1) Caltrain's Long Range Service Vision directs the railroad to plan for a substantially expanded rail service that will address the local and regional mobility needs of the corridor while supporting local economic development activities. When fully realized, this service will provide;

A. A mixture of express and local Caltrain services operated in an evenly spaced, bi-directional pattern

B. Minimum peak hour frequencies of;
- 8 trains per hour per direction on the JPB-owned corridor between Tamien Station in San Jose and San Francisco, extended to Salesforce Transit Center at such time as the Downtown Extension is completed
- 4 trains per hour per direction between Blossom Hill and Tamien Stations, subject to the securing of necessary operating rights
- 2 trains per hour per direction between and Gilroy and Blossom Hill Stations, subject to the securing of necessary operating rights

C. Off-peak and weekend frequencies of between 2 and 6 trains per hour per direction north of Blossom Hill and hourly between Gilroy and Blossom Hill, with future refinements to be based on realized demand

D. Accommodation of California High Speed Rail trains, in accordance with the terms of existing and future blended system agreements between the JPB and the California High Speed Rail Authority

E. Delivery of these services will occur through the incremental development of corridor projects and infrastructure to be further defined through individual planning process, feasibility studies and community engagement. At this time, such infrastructure is conceptually understood to include;

i. Investments in rail systems including a new, high performance signal system
ii. Station modifications including platform lengthening, level boarding, and investments in station access facilities and amenities to support growing ridership and improve customer experience
iii. New and modified maintenance and storage facilities in the vicinity of both terminals as well as the expansion of the electrified Caltrain fleet
iv. A series of short, 4-track stations and overtakes at various points throughout the corridor
v. Completion of key regional and state partner projects including
    1. The Downtown Extension to the Salesforce Transit Center
    2. The reconstruction of Diridon Station and surrounding rail infrastructure
    3. The reconstruction and electrification of the rail corridor south of Control Point Lick to the Gilroy Station
    4. Additional improvements to allow for the operation of High Speed Rail service between Gilroy and San Francisco
    5. The substantial grade separation of the corridor as well as safety upgrades to any remaining at-grade crossings, undertaken in a coordinated strategic manner driven by the desires of individual local jurisdictions as well as legal requirements associated with any proposed 4-track segments.

2) Caltrain's Long Range Service Vision further directs the railroad to continue its consideration of a potential "higher" growth level of service in the context of major regional and state rail planning. Specifically, the Long Range Service Vision directs the railroad to;

A. Work with regional and state partners to study and evaluate both the feasibility and desirability of higher levels of service in the context of major regional and state rail initiatives including planning related to the Dumbarton Rail Corridor, the 2nd Transbay Crossing, the potential for expanded ACE and Capitol Corridor services, and ongoing planning for the California High Speed Rail system.

B. To take certain actions to consider and, where feasible, not preclude such higher levels of service as they specifically relate to;

i. The planning of rail terminals and related facilities
ii. The sale or permanent encumbrance of JPB land
iii. The design of grade separations in areas where 4-track segments may be required
iv. The sizing of future maintenance facilities and storage yards

C. To return to the board with a recommendation regarding any formal expansion of the Long Range Service Vision at such a time as clear regional and state policy and funding commitments are in place and the feasibility of such an option on the corridor has been confirmed

3) Finally, Caltrain's Long Range Service Vision directs the railroad to periodically reaffirm the Vision to ensure that it continues to provide relevant and useful guidance to the railroad. Such reaffirmations should occur;

A. At a regular intervals of no less than 5 years

B. In response to significant changes to JPB or partner projects that materially influence the substance of the Long Range Service Vision

Memorandum

Date: July 25, 2019

To: CalMod Local Policy Maker Group (LPMG)

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

Re: Caltrain Electrification Project E-Update

ELECTRIFICATION INFRASTRUCTURE UPDATE

Construction to make Caltrain a modern, electric commuter rail system continues! This month, crews continued installation of foundations as well as poles along the corridor from South San Francisco to San Jose. Work was also performed on six traction power facilities in San Jose, Redwood City, Sunnyvale, South San Francisco, and San Mateo.

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

ELECTRIC VEHICLE UPDATE

Electric train production continues to ramp up. In July, bogie (truck) manufacturing commenced in the new Salt Lake City manufacturing facility (see above photo). The trucks house the wheels, axles, electric motors, and brakes.

View more pictures at www.CalMod.org/Gallery.

PUBLIC MEETINGS

JPB Meeting – August 1, 2019 at 10:00 a.m.
LPMG Meeting – August 22, 2019 at 5:30 p.m.

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

DETAILED PROGRESS REPORT

- May 2019 Monthly Progress Report presented to Caltrain Board on April 4, 2019

CALIFORNIA High-Speed Rail Authority

Memorandum

Date: July 25, 2019
To: Local Policy Maker Group (LPMG)
From: Boris Lipkin, Northern California Regional Director
Re: California High-Speed Rail Program Update

NORTHERN CALIFORNIA UPDATE

Staff-Recommended State's Preferred Alternatives
On July 2, 2019, the Authority released the staff-recommended State's Preferred Alternative (PA) for both the San Francisco to San Jose and San Jose to Merced Project Sections. This action is the culmination of many years of planning and months of technical analysis on the way to the circulation of draft environmental documents. This also kicks off a comprehensive outreach campaign to gather feedback from stakeholders and the public on staff's recommendations.

There are differences between the alternatives and the staff-recommended State's Preferred Alternatives are based on stakeholder input and analyses completed to date. The staff-recommendations address and balance system performance, operations, and cost factors as well as a range of key differentiating factors related to community and environmental resources. The identification of a PA is an important step in the environmental process; however, identifying the State's Preferred Alternative does not approve or adopt a preferred alternative for final design or construction and all alternatives will be analyzed at an equal level of detail and described in the published Draft EIR/EIS.

San Francisco to San Jose Project Section
Staff recommends Alternative A in the San Francisco to San Jose Project Section. Alternative A, assumes blended services with Caltrain and includes a Light Maintenance Facility on the east side of the existing right of way at the Brisbane Baylands site and no additional passing tracks. Alternative A provides for the infrastructure needed to add high-speed rail trains to the Caltrain corridor while minimizing impacts to community and environmental resources relative to Alternative B. Specifically, Alternative A results in the fewest displacements, road closures, visual impacts, and impacts on wetlands and habitats and natural resources while providing a reasonable range of service options for the blended system to operate in a configuration of up to six Caltrain trains per hour and four high-speed rail trains per hour (consistent with the Baseline scenario in the Caltrain Business Plan).

San Jose to Merced Project Section
Staff recommends Alternative 4 in the San Jose to Merced Project Section. Alternative 4, which includes blended high-speed rail services south of San Jose to Gilroy, largely within the Union Pacific Railroad Right of Way, represents the best balance of system performance, operations, and cost, community, and environmental factors compared to Alternatives 1-3. Specifically, Alternative 4 results in the fewest displacements, road closures, visual impacts, and impacts on wetlands and habitats and natural resources. It is good for access to transit systems

and services and the infrastructure in Alternative 4 also allows for the extension of electric Caltrain service to Gilroy.

Outreach

After releasing the staff recommendations in early July, the Authority initiated a regional outreach campaign to share and collect feedback on the staff-recommended State's Preferred Alternatives to provide valuable insight to the Board of Directors. In additional to Community Working Group meetings and Open House meetings listed below, staff will be presenting to a number of local jurisdictions, including city councils, boards of supervisors, and relevant other agency policy bodies (including the Local Policy Maker Group). Feedback gathered during this outreach process will be summarized and shared with the Authority Board of Directors for their consideration in giving staff direction during the September 17 Board Meeting, which will be held in the region in San Jose.

CWG Meetings

- July 10: Morgan Hill-Gilroy CWG
- July 16: San Jose CWG
- July 22: San Francisco CWG
- July 24: San Mateo County CWG

Open Houses (all scheduled for 5:00 – 8:00 pm)

- August 6: South Peninsula Open House at Adrian Wilcox High School, Santa Clara
- August 8: Gilroy Open House at IFDES Lodge-Portuguese Hall, Gilroy
- August 12: San Francisco Open House at Bay Area Metro Center, San Francisco
- August 15: San Jose Open House at City Hall, San Jose
- August 19: San Mateo County Open House at Sequoia High School, Redwood City
- August 21: Los Banos Open House at Los Banos Community Center, Los Banos

Please share the staff recommendation with your communities and give us your feedback.

- Comments received by **August 22, 2019** will be summarized in the staff report to the Authority Board.
- Comments can be submitted via email to San.Jose_Merced@hsr.ca.gov and San.Francisco_San.Jose@hsr.ca.gov or via mail to:

  Northern California Regional Office
  California High-Speed Rail Authority
  100 De San Antonio, Suite 300
  San Jose, CA 95113

OR

- Share feedback in person at an upcoming Open House or at the **Authority Board meeting on September 17 in San Jose, CA**.

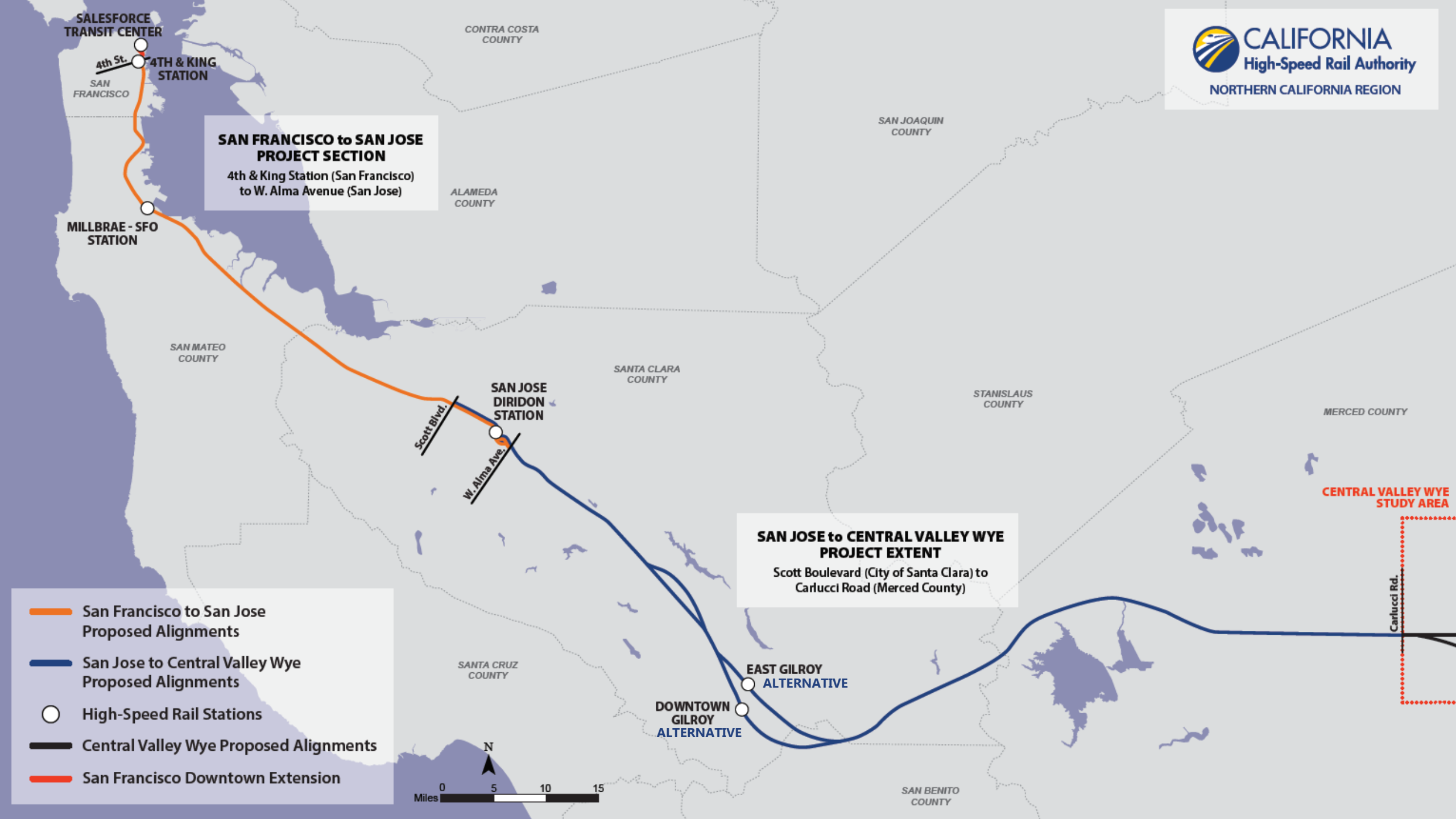
NORTHERN CALIFORNIA REGION

Local Policy Maker Working Group
Thursday, July 25, 2019
San Carlos, CA

OBJECTIVE

Share **staff-recommended State's Preferred Alternative** and process for identifying the State's Preferred Alternative.

- There are differences between the alternatives and the staff-recommended State's Preferred Alternative is based on stakeholder input and analyses completed to date.
- All alternatives will be analyzed at an equal level of detail and described in the published Draft EIR/EIS.
- Staff will summarize the comments received during planned outreach and report to the Authority Board for consideration with the recommended State's Preferred Alternative on September 17, 2019.
- Identifying the State's Preferred Alternative does not approve or adopt a preferred alternative for final design or construction.



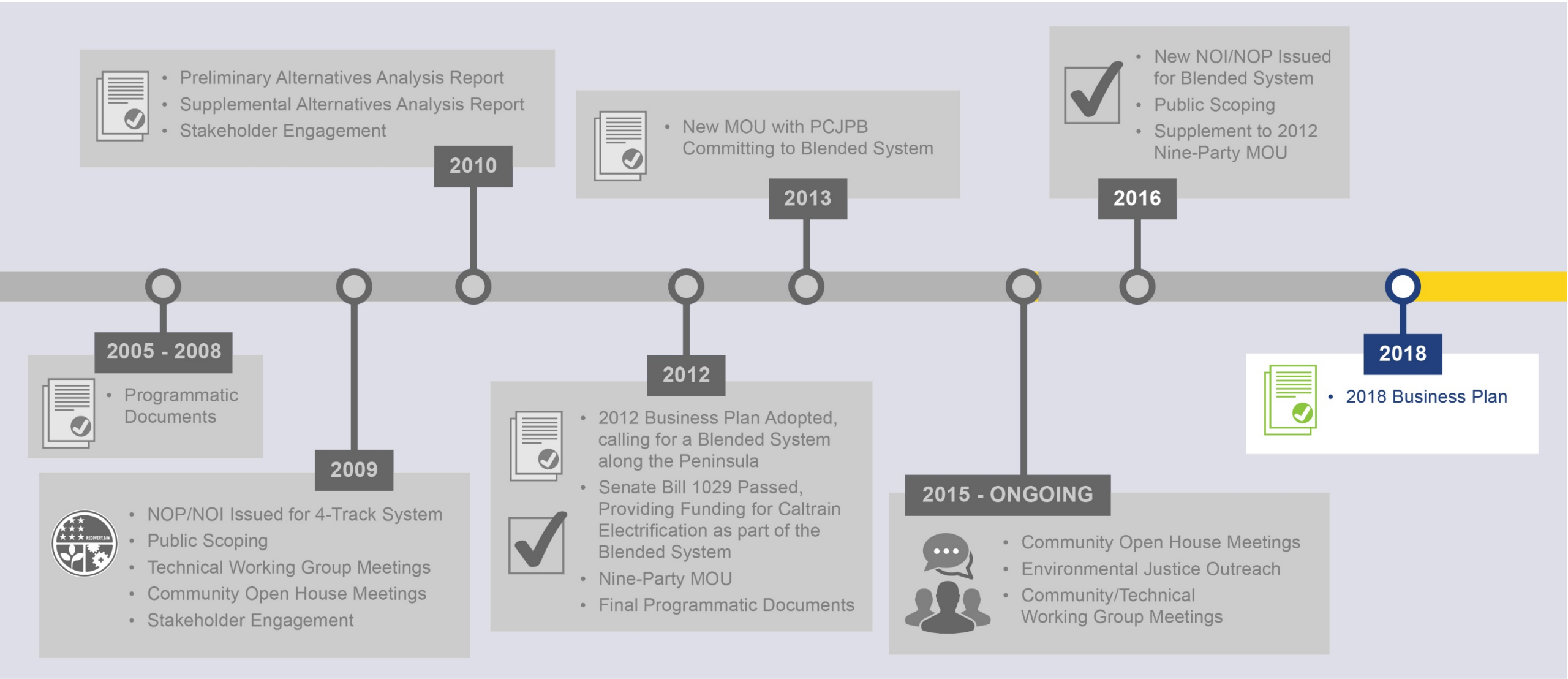
CALIFORNIA High-Speed Rail Authority

NORTHERN CALIFORNIA REGION

SAN FRANCISCO TO SAN JOSE PROJECT SECTION

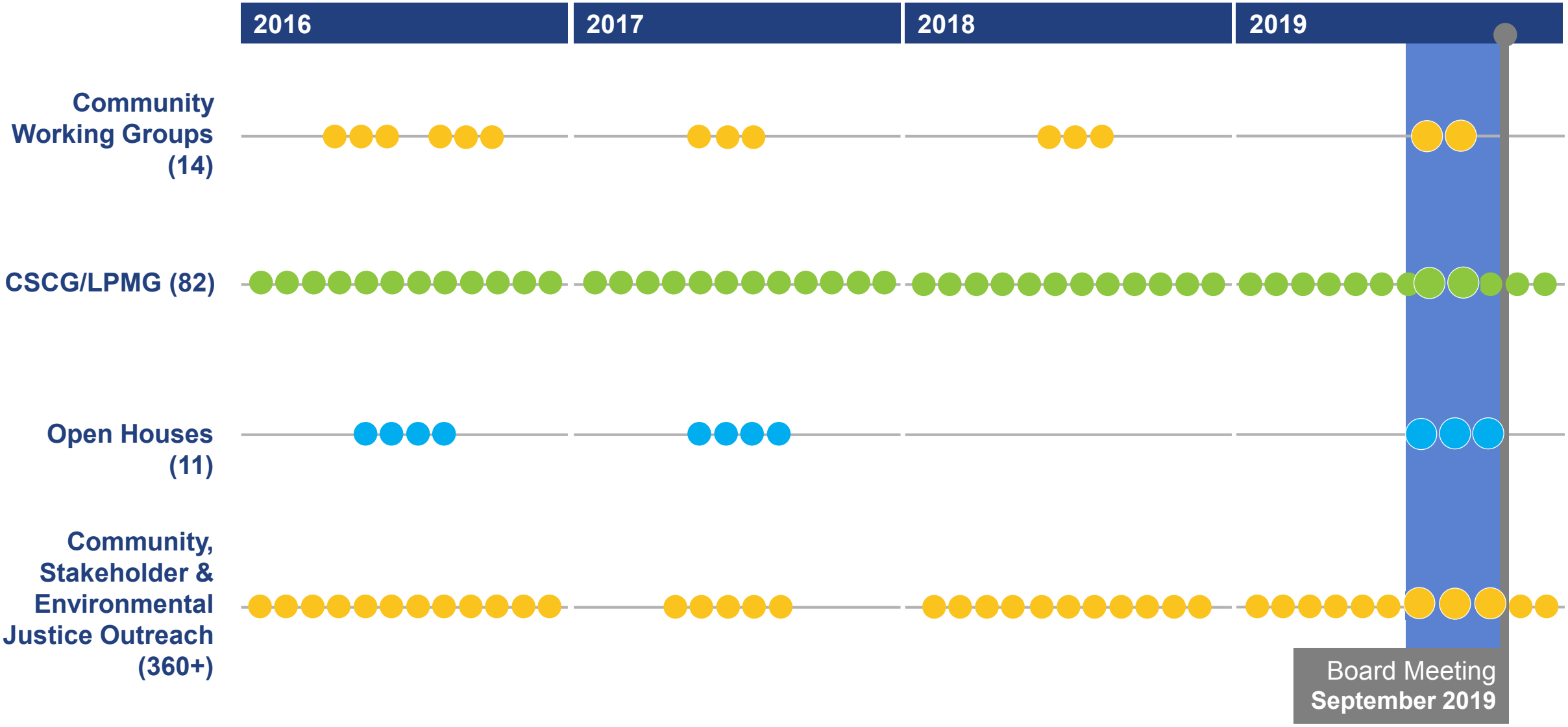
REFINING THE ALTERNATIVES:
Collaboration with Partner Agencies, Stakeholders, and Members of the Public

ALTERNATIVES DEVELOPMENT



SAN FRANCISCO TO SAN JOSE COMMUNITY OUTREACH

2016 – 2019



INTERFACING WITH NORTHERN CALIFORNIA AGENCIES

Topics covered in 2018 - 2019

	ALIGNMENTS	WATER MANAGEMENT	TRANSPORTATION/ ROADS	ENGINEERING/ DESIGN	LAND USE	JOINT OUTREACH	2018 BUSINESS PLAN
Bay Area Rapid Transit	●		●	●			●
California Strategic Growth Council	●			●	●		●
Caltrain	●			●		●	●
Caltrans District 4	●		●				●
City and County Staff (throughout corridor)	●	●	●	●	●	●	●
Floodplain Administrators and Managers	●	●		●			●
Metropolitan Transportation Commission	●				●		●
Mineta San Jose International Airport	●		●				●
San Francisco Bay Conservation and Development Commission	●				●		●
San Francisco International Airport	●			●	●		●
Santa Clara Valley Transportation Authority	●				●	●	●
Transbay Joint Powers Authority	●		●	●			●

KEY ISSUES IDENTIFIED DURING OUTREACH

- Aesthetic impacts and visual quality
- Brisbane LMF: air quality, visual, and noise impacts of construction and operation
- Compatibility of project design with future land use development
- Displacements
- Employment opportunities
- Encroachment on BCDC jurisdiction
- Impacts on Caltrain and other transit services
- Noise and vibration
- Safety and security at at-grade crossings and on station platforms
- Traffic congestion

SAN FRANCISCO TO SAN JOSE PROJECT SECTION

IDENTIFYING A PREFERRED ALTERNATIVE

SAN FRANCISCO – SAN JOSE PROJECT ALTERNATIVES A AND B

SAN FRANCISCO TO SAN JOSE

Common Project Elements – Alternatives A & B

- **High-Speed Rail stations[1]**
  - » San Francisco 4th and King
  - » Millbrae
- **Up to 110 mph speeds**
  - » Track modifications to support higher speeds
- **Peak operations**
  - » 4 High-Speed Rail trains and 6 Caltrain trains per hour/per direction

[1] *Salesforce Transit Center has been environmentally cleared by Transbay Joint Powers Authority and will not be part of the California High-Speed Rail Authority's environmental analysis. San Jose Diridon Station is being evaluated as part of the San Jose to Merced Project Section but will be included in both project sections' environmental analysis.*

SAN FRANCISCO TO SAN JOSE

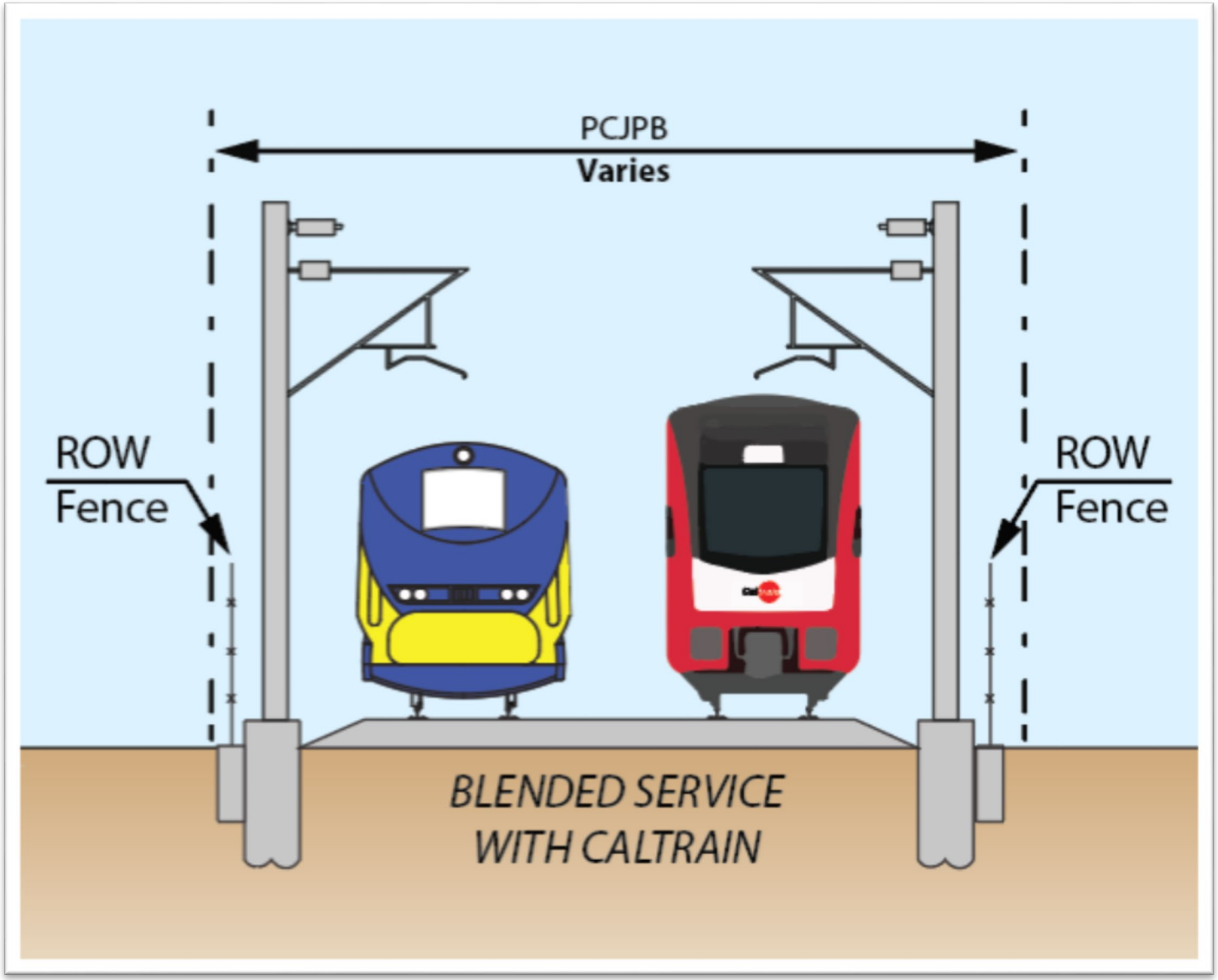
Common Project Elements – Alternatives A & B

- **Remove hold-out rule at Broadway and Atherton Caltrain Stations**
- **Safety modifications at Caltrain-only stations and at-grade crossings**
- **Corridor fencing**

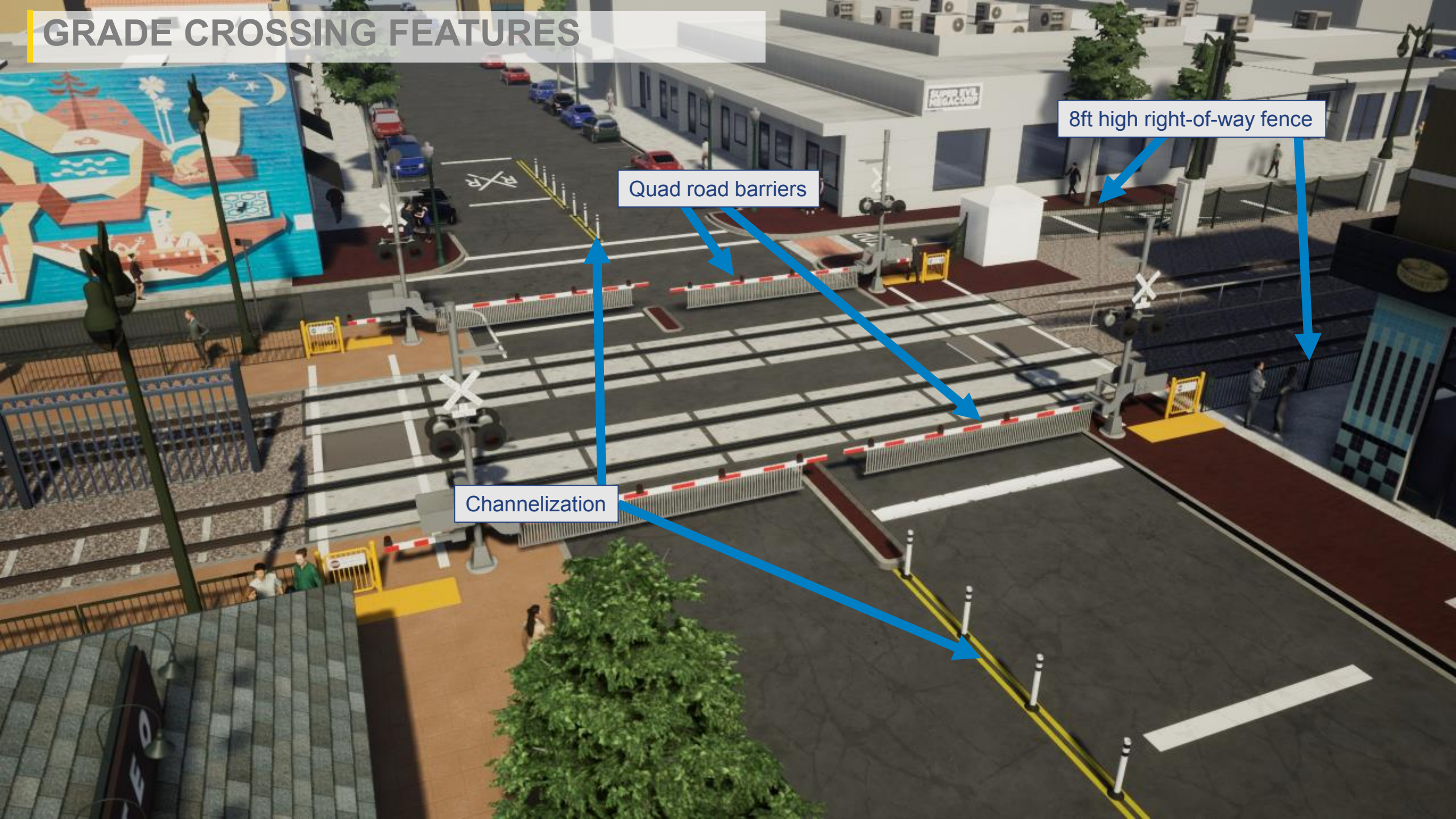
BLENDED AT-GRADE

Typical Section North of Santa Clara

- Uses Caltrain electrification infrastructure and tracks
- Predominantly within the existing railroad right-of-way
- At-grade tracks with quad gates at each road crossing



GRADE CROSSING FEATURES



PREFERRED ALTERNATIVE CRITERIA

System Performance, Operations, & Costs

- Alignment Length
- Maximum Authorized Speed
- Proximity to Transit Corridors
- Travel Time
- Capital Costs
- Operations & Maintenance Costs

Environmental Factors

- Biological and Aquatic Resources

Community Factors

- Displacements
- Aesthetics and Visual Quality
- Land Use and Development
- Transportation
- Emergency Vehicle Access/Response Time
- Environmental Justice

ALTERNATIVE A – STAFF-RECOMMENDED STATE'S PREFERRED ALTERNATIVE

SYSTEM PERFORMANCE, OPERATIONS AND COSTS[1]

Bold text in tables indicates best-performing alternative(s).

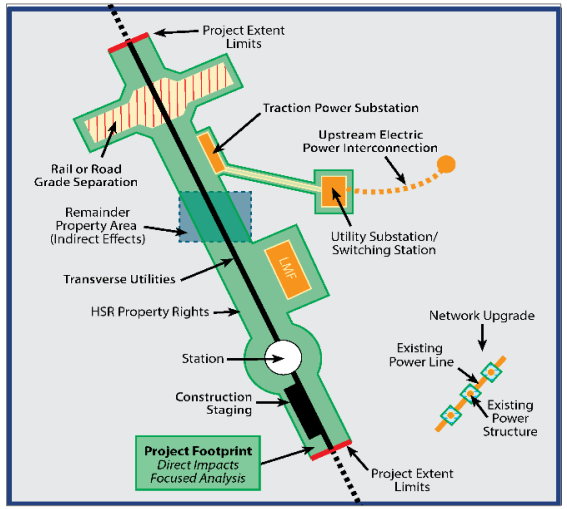
CRITERIA	ALT A	ALT B
Alignment length (miles)	42.9	
Maximum Operating Speed (mph)	Up to 110	
HSR Peak Hour Average Representative Travel Time San Francisco to San Jose (minutes)	47	**45**
Proposition 1A Service Travel Time Compliance	✓	✓
Estimated Capital Costs (2017$)	**$2.6 billion**	$3.5 billion
Estimated Annual Operations and Maintenance Costs (2017$)	$78 million	
Caltrain Peak Hour Average Representative Travel Time (minutes)	**63**	65

DISPLACEMENTS

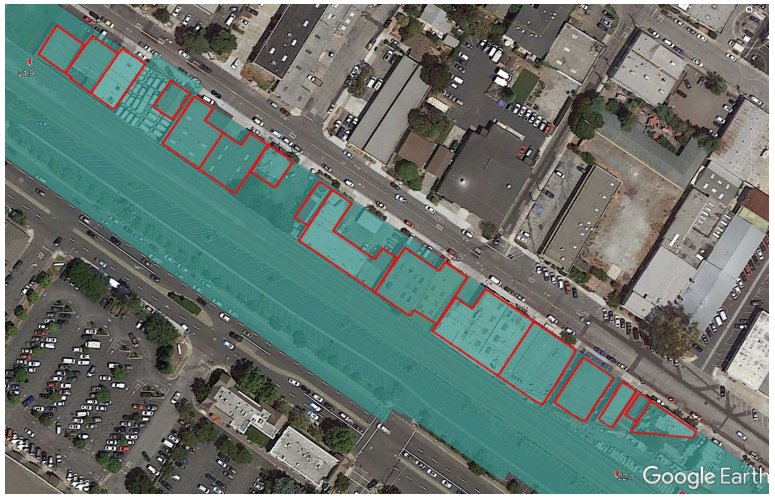
Bold text in tables indicates best-performing alternative(s).

CRITERIA	ALT A	ALT B
Residential displacements (number of units)	**10**	19
Commercial and industrial displacements (# of businesses)	**29**	108
(square feet)	**211,261**	466,084
Community and public facilities displacement (number of units)	**2**	4

HSR Temporary and permanent footprint



Example: overlay of footprint in urban area



AESTHETICS AND VISUAL QUALITY

Bold text in tables indicates best-performing alternative(s).

CRITERION	ALT A	ALT B
Number of key viewpoints with decreased visual quality	**3**	5

LAND USE AND DEVELOPMENT

- **Both alternatives potentially reduce available land for development at Brisbane Baylands**
- **Alternative B would convert 8 acres of land at Icehouse Hill**

LEGEND

Permanent Project Footprint

Land Use

- Residential
- Commercial
- Mixed Use
- Heavy Commercial
- Public Facilities
- Planned Development

Alternative A — M East

Impacts 93 acres planned commercial and 2 acres planned mixed use (with residential permitted)

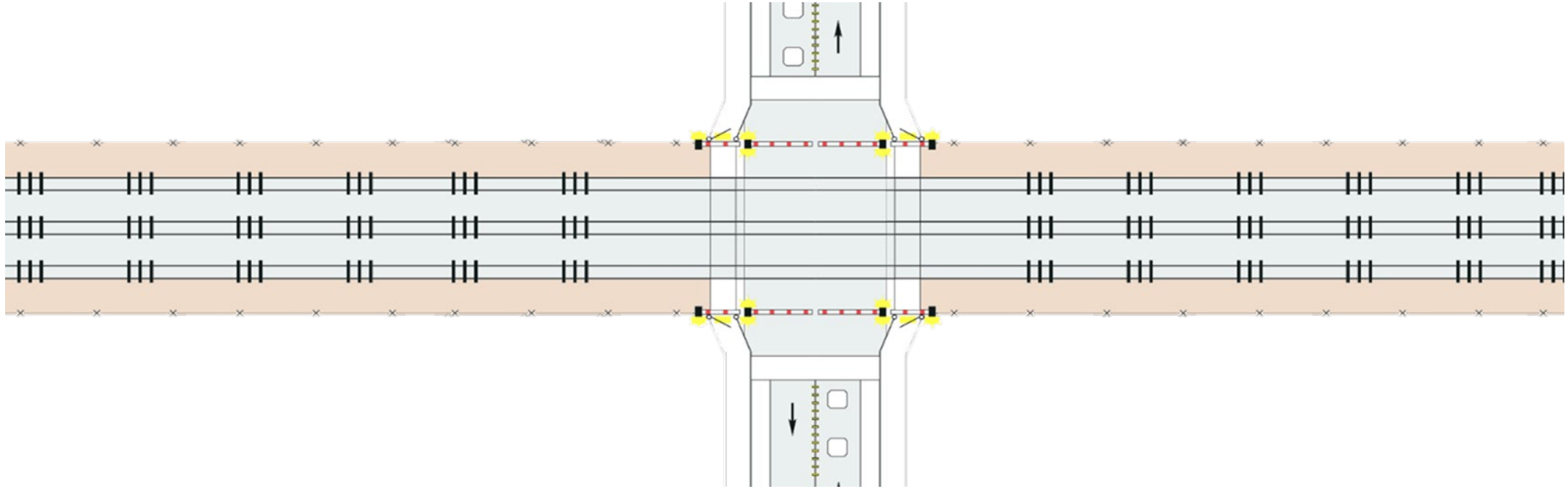
Alternative B — M West

Impacts 90 acres planned commercial and 21 acres planned mixed use (with residential permitted)

TRANSPORTATION

Bold text in tables indicates best-performing alternative(s).

CRITERIA	ALT A	ALT B
Temporary interference with local vehicle circulation	**No Change**	Along El Camino Real during passing track construction
Pedestrian Access from Downtown San Carlos to Caltrain Station	**No Change**	Reduced pedestrian access due to the relocation of the station 2,260 feet south of current location



EMERGENCY VEHICLE ACCESS/RESPONSE TIME

Bold text in tables indicates best-performing alternative.

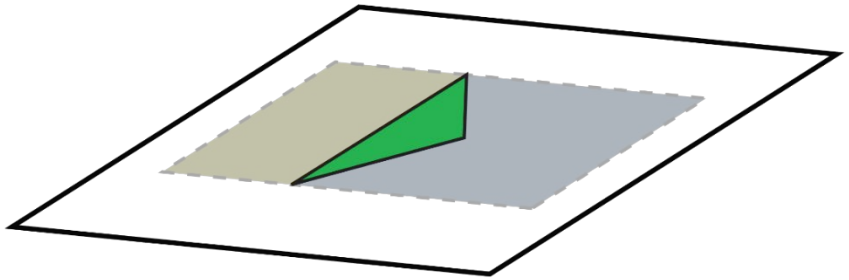
CRITERION	ALT A	ALT B
Temporary increases in emergency vehicle access/response time in south San Mateo, Belmont, San Carlos, and northern Redwood City due to short-term road closures and construction traffic associated with passing track construction	**None**	Yes

ENVIRONMENTAL JUSTICE

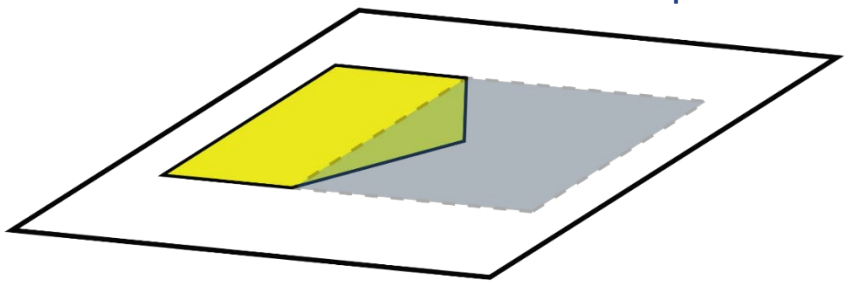
Community Factors

Bold text in tables indicates best-performing alternative(s).

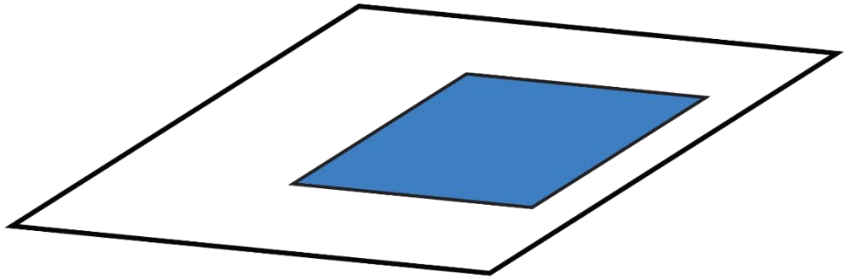
CRITERIA	ALT A	ALT B
Construction-related disruption to Caltrain Service	**Less than Alt. B due to no passing track construction**	More than Alt. A due to passing track construction
Permanent Effect on Planned Mixed Use Development (residential uses allowed) in Brisbane (acres)	**2**	21



EJ Populations + Impacts



EJ Populations



Adverse & Beneficial Impacts

BIOLOGICAL AND AQUATIC RESOURCES

Bold text in tables indicates best-performing alternative(s).

CRITERIA	ALT A	ALT B
Total permanent impacts on wetlands and other waters of the U.S. (acres)	**8.8**	12.8
Permanent Impacts on endangered callippe silverspot butterfly habitat (acres)	**0.0**	8.0

SUMMARY OF ALTERNATIVES EVALUATION – SYSTEM PERFORMANCE, OPERATIONS, AND COST FACTORS

CRITERIA	ALT A	ALT B
Alignment length (miles)	No Difference	
Maximum Operating Speed (mph)	No Difference	
HSR Peak Hour Average Representative Travel Time San Francisco to San Jose (minutes)		●
Proposition 1A Service Travel Time Compliance	✓	✓
Estimated Capital Costs (2017$)	●	
Estimated Annual Operations and Maintenance Costs (2017$)	No Difference	
Caltrain Peak Hour Average Representative Travel Time (minutes)	●	

● = Best-performing alternative

SUMMARY OF ALTERNATIVES EVALUATION – COMMUNITY FACTORS

CRITERIA	ALT A	ALT B
Residential displacements	●	
Commercial and industrial displacements	●	
Community and public facilities displacement	●	
Number of key viewpoints with decreased visual quality	●	
Temporary interference with local vehicle circulation	●	
Pedestrian Access from Downtown San Carlos to Caltrain Station	●	
Temporary increases emergency response time in south San Mateo, Belmont, San Carlos, and northern Redwood City due to short-term road closures	●	
Construction-related disruption to Caltrain Service	●	
Permanent Effect on Planned Mixed Use Development (residential uses allowed) in Brisbane	●	

● = Best-performing alternative (fewest/least community impacts)

SUMMARY OF ALTERNATIVES EVALUATION – ENVIRONMENTAL FACTORS

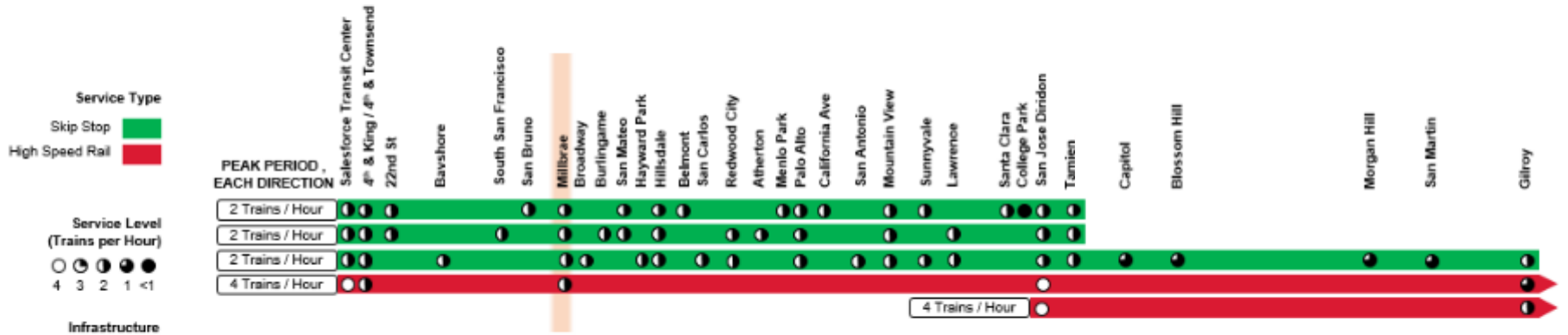
CRITERIA	ALT A	ALT B
Total permanent impacts on wetlands and other waters of the U.S.	●	
Permanent Impacts on endangered callippe silverspot butterfly habitat	●	

● = Best-performing alternative (fewest environmental impacts)

CALTRAIN BUSINESS PLAN

2040 Baseline Growth Scenario

2040 Baseline Growth Scenario (6 Caltrain + 4 HSR)



Features

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

Passing Track Needs

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

Options & Considerations

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

DRAFT

ALTERNATIVE A – Staff-Recommended State's Preferred Alternative

Conclusions of Technical Analysis

Fewest major visual impacts

Fewest displacements

Fewest road closures

Fewest impacts on wetlands and habitats

Fewest impacts on natural resources

Lowest capital cost

Slower HSR, faster Caltrain peak hour travel time

Policy-level alignment with the Caltrain Business Plan

ALTERNATIVE A – STAFF-RECOMMENDED STATE'S PREFERRED ALTERNATIVE

LEGEND

San Francisco to San Jose Alignments

- Alternative A

- HSR Stations
- Maintenance Facility
- San Jose to Merced Alignments

N

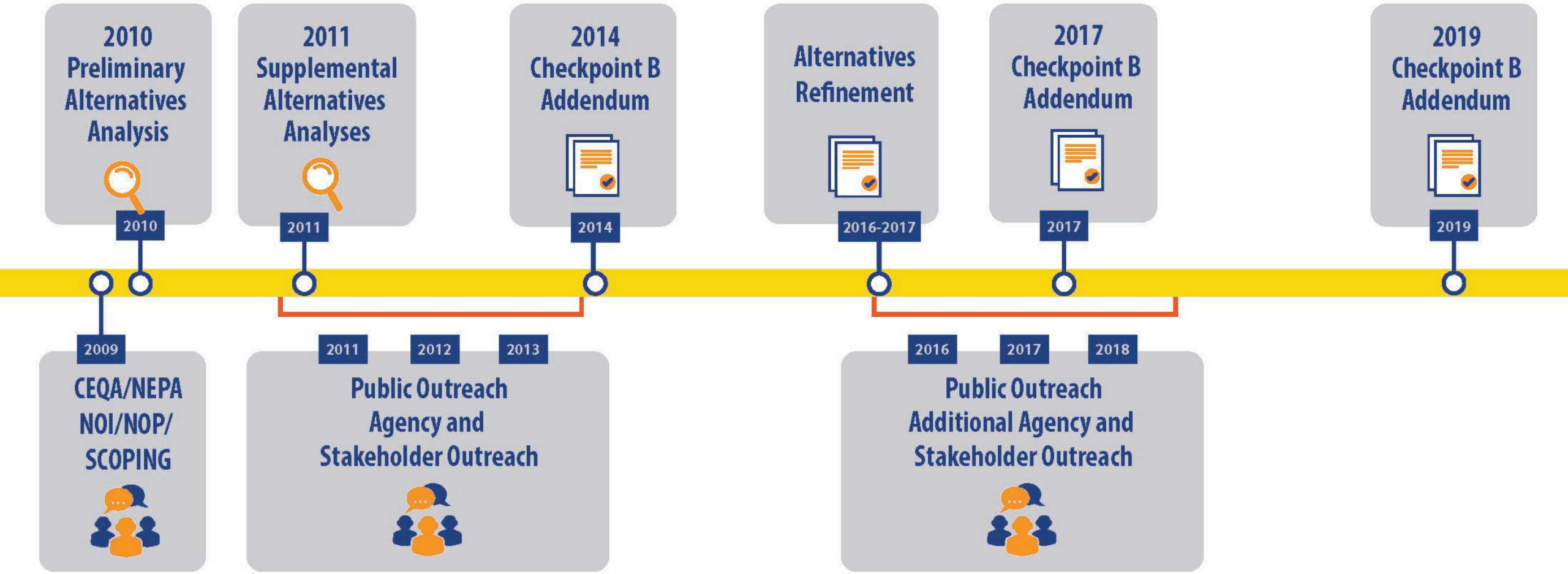
Miles 0 2 4 8

Kilometers 0 2 4 8

SAN JOSE TO MERCED PROJECT SECTION

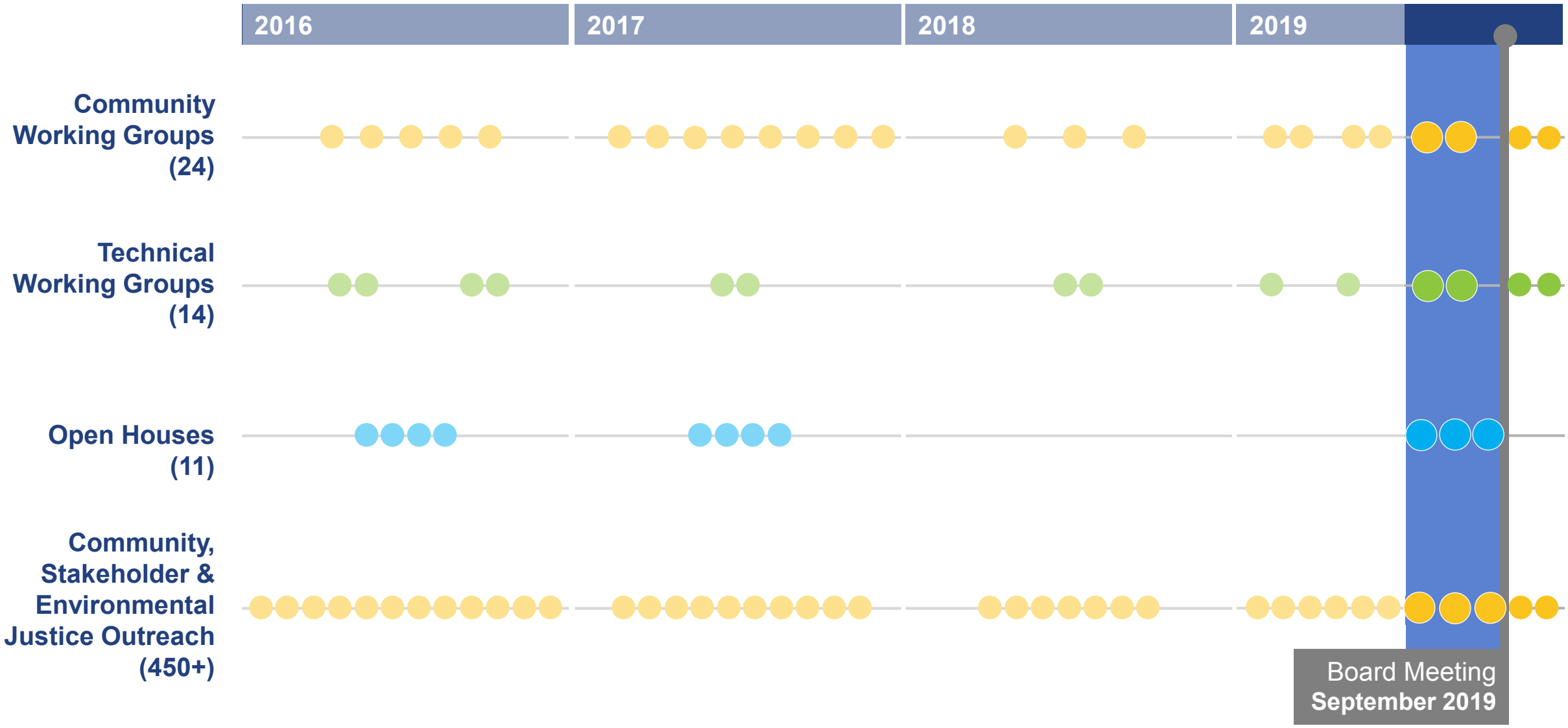
REFINING THE ALTERNATIVES:
Collaboration with Partner Agencies, Stakeholders, and Members of the Public

ALTERNATIVES DEVELOPMENT PROCESS



SAN JOSE TO MERCED COMMUNITY OUTREACH

2016 – 2019



INTERFACING WITH NORTHERN CALIFORNIA AGENCIES

2018 – 2019

AGENCY	ALIGNMENTS	WATER MANAGEMENT	WILDLIFE CROSSINGS	TRANSPORTATION/ ROADS	ENGINEERING/ DESIGN	LAND USE	JOINT OUTREACH	2018 BUSINESS PLAN
California Highway Patrol	●			●				●
California Strategic Growth Council	●		●		●	●		●
Caltrain	●			●	●		●	●
Caltrans Districts 4, 5, and 10	●			●	●			●
Cities of Gilroy, Los Banos, Morgan Hill, San Jose	●	●		●	●	●	●	●
Floodplain Administrators and Managers	●				●			●
Gilroy, Los Banos & Morgan Hill USDs	●				●	●	●	●
Grasslands Ecological Area Stakeholders Group	●	●	●		●	●		●
Metropolitan Transportation Commission	●	●		●		●		●
Mineta San Jose International Airport	●			●	●			●
Pathways for Wildlife	●		●					●
Peninsula Open Space Trust	●		●					●
San Benito County Resource Mgmt. Agency	●	●	.		●			●
Santa Clara County Parks	●	●	●			●		●
Santa Clara County Planning Department	●	●			●			●
Santa Clara County Roads & Airports	●							●
Santa Clara Valley Habitat Agency	●	.	●		●	●		●
Santa Clara Valley Open Space Authority	●	●	●	●				●
Santa Clara Valley Transportation Authority	●		●		●	●	●	●
Santa Clara Valley Water District	●	●	.		●			●
The Nature Conservancy	●		●	●	.	●	.	●

KEY ISSUES IDENTIFIED DURING OUTREACH

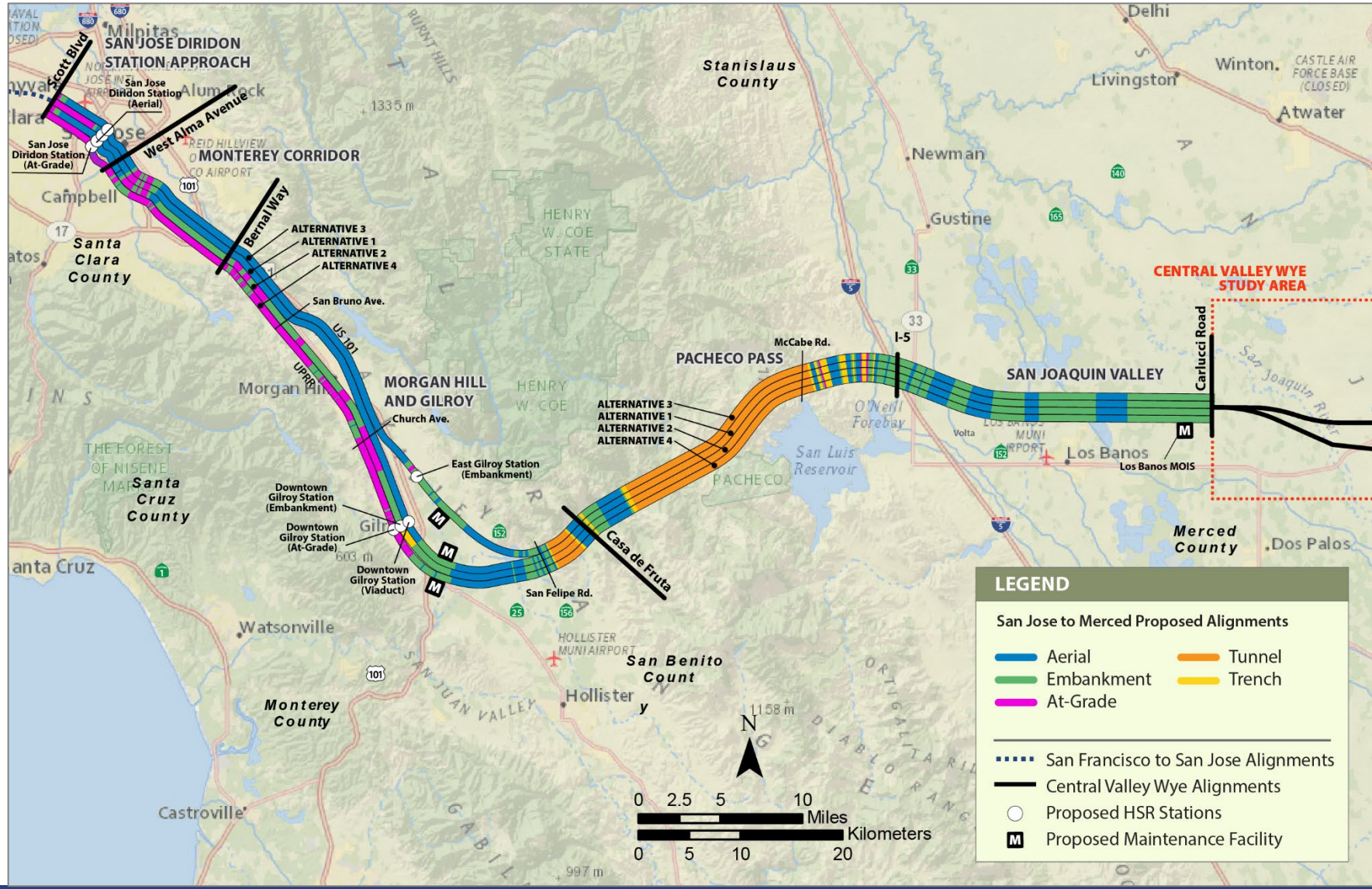
- Aesthetic and visual quality
- Biological resources, wetlands and other waters of the U.S., and wildlife movement
- Community cohesion
- Cultural and tribal resources
- Disruption/loss of parks, recreation, open space, agricultural lands/operations
- Environmental justice
- Flooding and floodplains
- Noise and vibration
- Residential and business displacements
- Safety and security
- Traffic

SAN JOSE TO MERCED PROJECT SECTION

IDENTIFYING A PREFERRED ALTERNATIVE

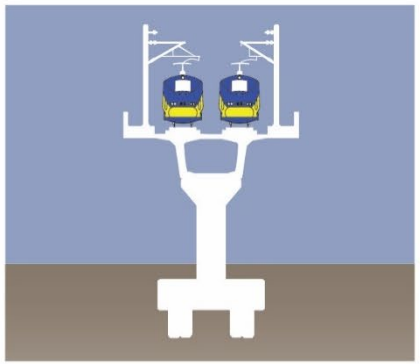
SAN JOSE TO MERCED RANGE OF ALTERNATIVES

- *San Jose to Merced Project Section*
- *4 end-to-end alternatives*
- *Some alternatives are the same for a part of the route*



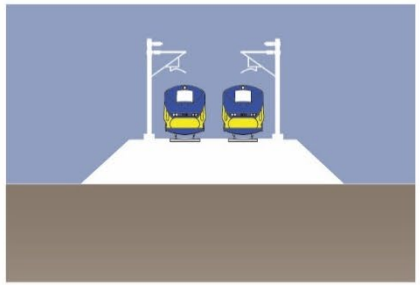
TYPICAL CROSS SECTIONS

Viaduct



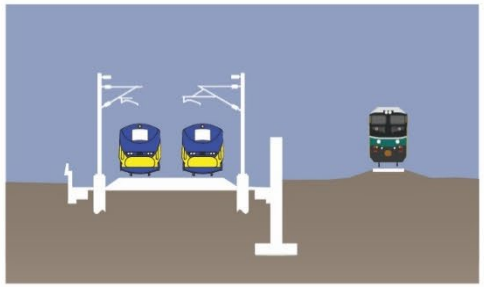
Two high-speed rail tracks on an aerial structure

Embankment



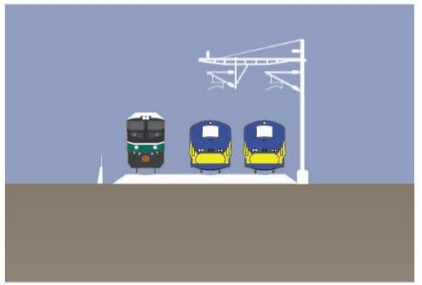
Two high-speed rail tracks on an earthen embankment

Dedicated At-Grade



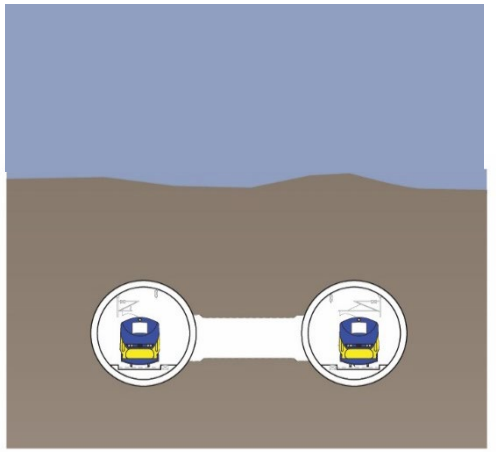
Two high-speed rail tracks at ground level adjacent to existing freight tracks

Blended At-Grade



Two electrified, blended passenger tracks (with Caltrain) and one non-electrified freight track at ground level

Tunnel



Twin bore tunnel through the Pacheco Pass

PREFERRED ALTERNATIVE CRITERIA

System Performance, Operations, & Costs

- Alignment Length
- Operational Speed
- Proximity to Transit Corridors
- Travel Time
- Capital Costs
- Operations & Maintenance Costs

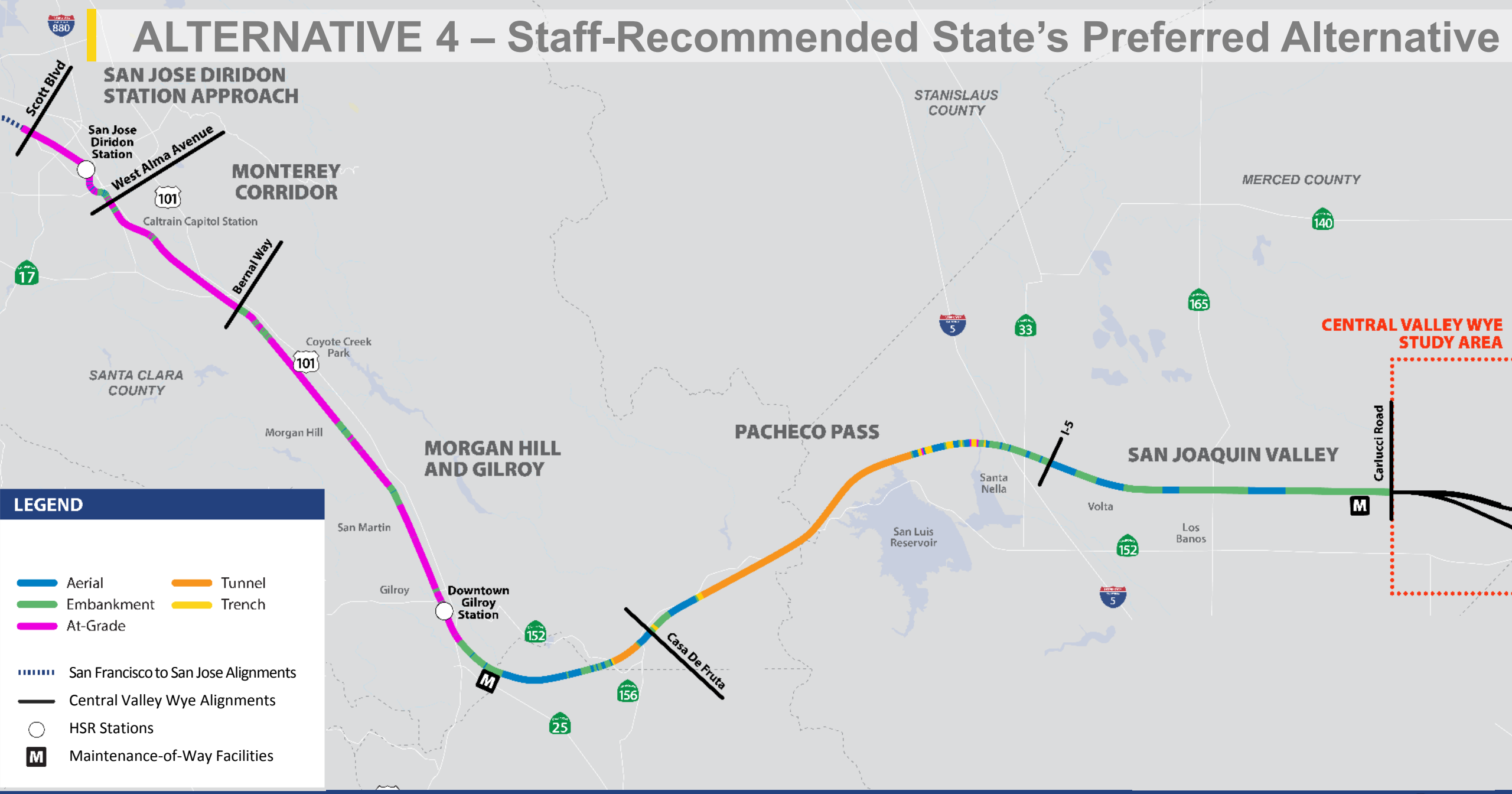
Environmental Factors

- Biological Resources and Wetlands and Other Waters of the U.S.
- Parks and Recreation Areas
- Built Environment Historic Resources

Community Factors

- Displacements
- Agricultural Lands
- Aesthetics and Visual Quality
- Land Use and Development
- Noise
- Transportation
- Emergency Vehicle Access/ Response Time
- Environmental Justice

ALTERNATIVE 4 – Staff-Recommended State's Preferred Alternative



SYSTEM PERFORMANCE, OPERATIONS, AND COSTS

Bold text in tables indicates best-performing alternative(s).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Alignment length (miles)	89	89	**87**	89
Operational speed (mph) — San Jose to Gilroy	Up to 175	**Up to 195**	Up to 175	Up to 110
Operational speed (mph) — Gilroy to Central Valley Wye	Up to 220			
Proximity to existing transit corridors (miles)	43	**50**	35	**50**
Peak hour average representative travel time between San Jose and Gilroy (minutes)[1]	17-18	17-18	**16-17**	23
Proposition 1A service travel time compliance	✓	✓	✓	✓
Estimated capital costs (2017$ billions)[2]	$20.5	$17.7	$20.8	**$13.6**
Estimated annual operations and maintenance costs (2017$ millions)[3]	$162			

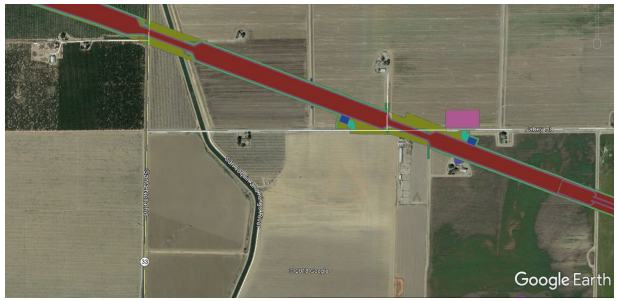
[1]Times include Gilroy stop. East Gilroy station for Alt. 3 is approximately one mile further north than the Downtown Gilroy station for Alts. 1, 2, and 4.
[2]Conceptual cost estimates prepared for the project alternatives were developed by utilizing recent bid data from large transportation projects in the western United States and by developing specific, bottom-up unit pricing to reflect common HSR elements and construction methods with an adjustment for Bay Area and Central Valley labor and material costs.
[3]Based on level of design sufficient to analyze potential environmental impacts.

DISPLACEMENTS

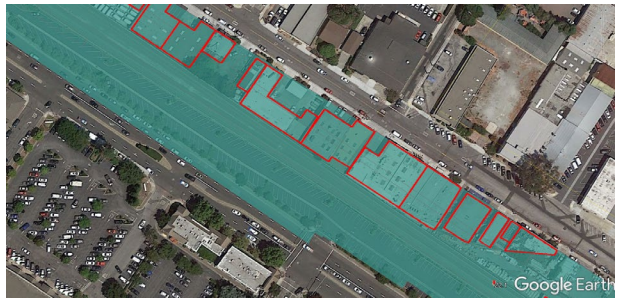
Bold text in tables indicates best-performing alternative(s) (fewest community impacts).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Residential displacements (# of units)	147	603	157	**68**
Commercial displacements (# of businesses)	217	348	157	**66**
Agricultural displacements (# structural improvements)	49	53	49	**40**
Community or public facilities displacement (# of units)	7	8	5	**1**
Commercial displacements (square footage)	**411,000**	1,800,000	994,000	448,000
Agricultural structure displacements (square footage)	**407,000**	1,206,000	1,489,000	542,000

Example: overlay of footprint in rural area



Example: overlay of footprint in urban area



AGRICULTURAL LANDS

Bold text in tables indicates best-performing alternative(s) (fewest community impacts).

CRITERION	ALT 1	ALT 2	ALT 3	ALT 4
Permanent conversion of Important Farmland (i.e. Prime Farmland, Farmland of State Importance, and Farmland of Local Importance (acres))	1,036	1,181	1,193	**1,033**

Alternatives 1 and 3 traction power facility on agricultural land

AESTHETICS AND VISUAL QUALITY

Bold text in tables indicates best-performing alternative(s) (least community impacts).

CRITERION	ALT 1	ALT 2	ALT 3	ALT 4
Visual Quality Effects	• Viaduct • Elevated Stations	• Embankment and Viaduct • Elevated Stations • Roadway Grade Separations	• Viaduct • Elevated Stations • Alignment in Rural Area (East Gilroy)	• **At-Grade Alignment** • **Existing Railroad Right-of-Way**

Alternatives 1 and 3: Viaduct

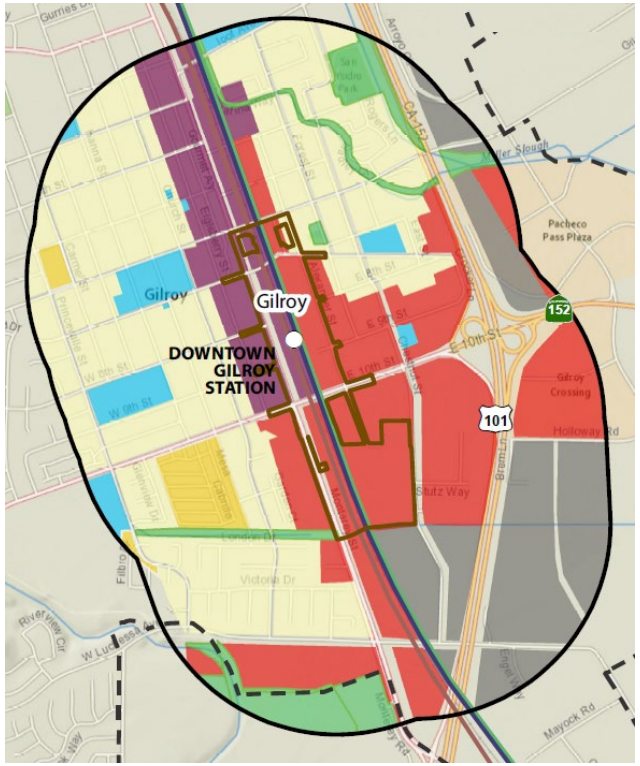
Alternative 4: At-Grade

LAND USE AND DEVELOPMENT

Community Factors

Bold text in tables indicates best-performing alternative(s) (least community impacts).

CRITERION	ALT 1	ALT 2	ALT 3	ALT 4
Consistency with City of Gilroy General Plan policy to encourage transit-oriented development (TOD) in downtown	**Yes**	**Yes**	No	**Yes**



Low/ Medium Density Residential
High Density Residential
Mixed Use
Commercial
Industrial
Parks/ Recreation/ Open Space
Public Facilities
Agriculture

Planned Land Use (Current Zoning)

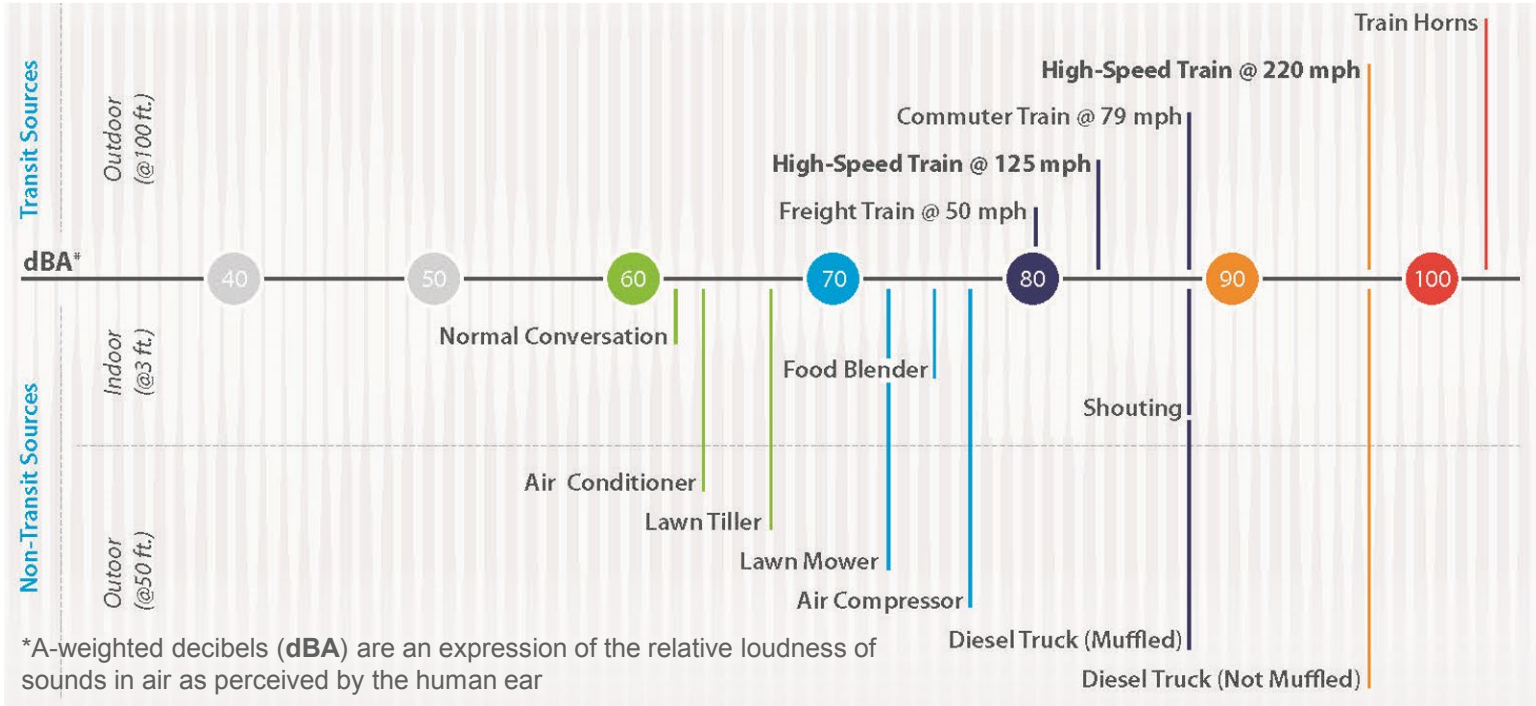
Downtown Gilroy Station

East Gilroy Station

NOISE

Bold text in tables indicates best-performing alternative(s) (fewest community impacts).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Severe noise impacts with noise barrier mitigation (# of sensitive receptors)	231	194	**173**	275
Severe noise impacts with noise barrier mitigation and if local municipalities implement quiet zones (# of sensitive receptors)	223	194	**173**	179



The Sound of High-Speed Train Travel
Typical Maximum Noise Levels Before Mitigation

TRANSPORTATION

Bold text in tables indicates best-performing alternative(s) (fewest community impacts).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Permanent road closures — San Jose to Gilroy	10	19	**8**	**8**
Permanent road closures — Gilroy to Carlucci Rd	7			

Alternatives 1, 2, and 3:
Simulated view of I-280 in San Jose

EMERGENCY VEHICLE ACCESS/RESPONSE TIME

Bold text in tables indicates best-performing alternative(s) (lowest level of mitigation required).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Increase in 2040 peak travel time on Monterey Road (northbound AM/PM, southbound AM/PM, minutes)	NB 8/20 SB 6/12	NB 27/5 SB 16/17	NB 8/20 SB 6/12	**NB 0/5** **SB 1/8**
Areas of potential delay to emergency vehicle response times	**Monterey Corridor due to Monterey Road narrowing**			Monterey Corridor, Morgan Hill, Gilroy due to gate-down time
Types of mitigation needed to minimize emergency vehicle delays	**Vehicle detection equipment**			Vehicle detection equipment, additional emergency equipment for existing fire stations, new fire stations, and potentially additional ambulance services

ENVIRONMENTAL JUSTICE

Bold text in tables indicates best-performing alternative(s) (fewest community impacts).

CRITERIA (within low-income or minority communities)	ALT 1	ALT 2	ALT 3	ALT 4
EJ proportion of total significant and unavoidable impacts on local views[1]	50%	**N/A[2]**	67%	**N/A[2]**
EJ proportion of total residential displacements	60%	66%	**50%**	**50%**
EJ proportion of total business displacements	87%	92%	**82%**	83%
Amount of mitigation required to address effects on emergency vehicle response times (lower number is less mitigation needed)	**1**	3	**1**	4
EJ proportion of total moderate and severe noise impacts[3]	49%	65%	**45%**	76%

[1]As indicated by impacts on visual landscape units.
[2]These alternatives have no significant and unavoidable impacts on visual landscape units.
[3]Noise impacts after noise barrier mitigation.

BIOLOGICAL RESOURCES AND WETLANDS AND OTHER WATERS OF THE U.S.

Bold text in tables indicates best-performing alternative(s) (fewest environmental impacts).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Permanent impacts on jurisdictional waters and wetlands (acres)	104	111	116	**101**
Permanent impacts on habitat for listed plant species (non-overlapping acres)	1,171	1,178	1,183	**1,146**
Permanent impacts on habitat for listed wildlife species with the most impacts overall (California tiger salamander, acres)	2,273	2,329	2,470	**2,146**
Wildlife corridor impacts	**Avoids east Gilroy; fewer Soap Lake floodplain impacts**	**Avoids east Gilroy; fewer Soap Lake floodplain impacts**	Impacts east Gilroy; more Soap Lake floodplain impacts	**Avoids east Gilroy; fewer Soap Lake floodplain impacts**
Permanent impacts on conservation areas (acres)	**427**	432	481	**427**

PARKS AND RECREATION AREAS

Bold text in tables indicates best-performing alternative(s) (fewest environmental impacts).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Permanent use of 4(f)/6(f) park resources (#)	4	6	5	**3**
(acres)	4.8	7.4	5.0	**1.4**

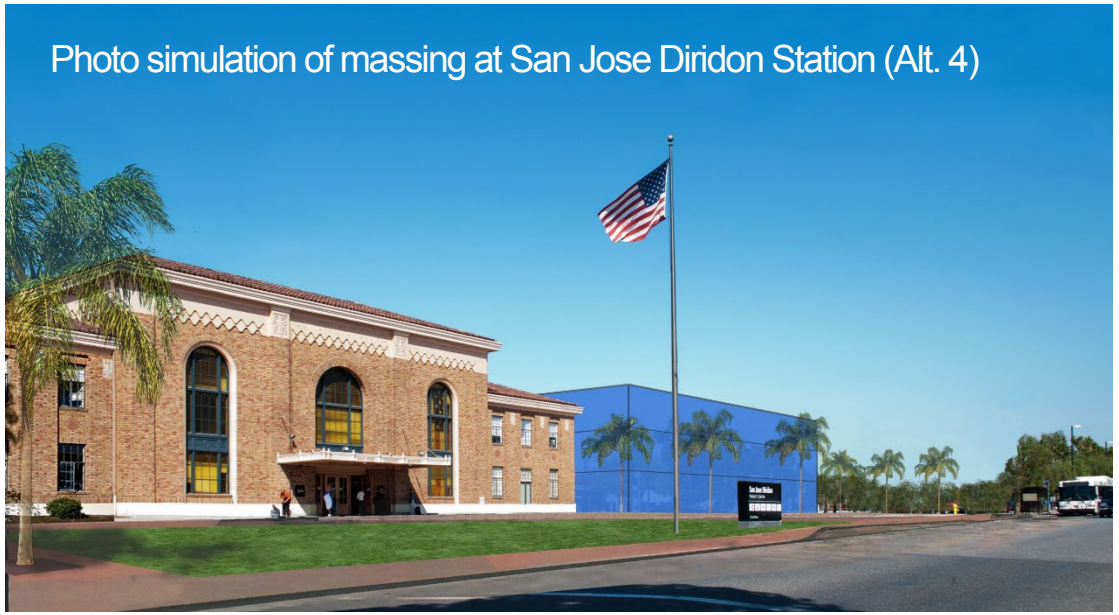
Upper Unit at Cottonwood Creek Wildlife Area (CADFW)

Coyote Creek Parkway (Santa Clara County Parks)

BUILT ENVIRONMENT HISTORIC RESOURCES

Bold text in tables indicates best-performing alternative(s) (fewest environmental impacts).

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Number of permanent adverse effects on NRHP-listed/eligible resources (# of resources)	8	9	7	**5**
Number of permanent significant impacts on CEQA-only historic resources (# of resources)	2	4	**1**	**1**



SUMMARY OF ALTERNATIVES EVALUATION – SYSTEM PERFORMANCE, OPERATIONS, & COSTS

System Performance, Operations and Costs

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Alignment length			●	
Operational Speed — San Jose to Gilroy		●		
Operational Speed — Gilroy to Central Valley Wye	*No difference*			
Proximity to existing transit corridors		●		●
Travel time — San Jose and Gilroy			●	
Proposition 1A service travel time compliance	✓	✓	✓	✓
Estimated capital costs				●
Estimated annual operations and maintenance costs	*No difference*			

● Best-performing alternative

SUMMARY OF ALTERNATIVES EVALUATION – COMMUNITY FACTORS

Community Factors

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Residential displacements				●
Commercial displacements (#)				●
Agricultural displacements (#)				●
Community or public facilities displacements				●
Commercial displacements (square footage)	●			
Agricultural structure displacements (square footage)	●			
Permanent conversion of important farmland				●
Visual quality effects				●
Consistency with Gilroy General Plan	●	●		●
Noise impacts with noise barrier mitigation			●	

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Increase in 2040 peak travel time on Monterey Road (NB — AM/PM, SB — AM/PM)				●
Permanent road closures			●	●
Amount of mitigation needed to minimize emergency vehicle delays	●	●	●	
EJ proportion of total impacts on local views		●		●
EJ proportion of total residential displacements			●	●
EJ proportion of total business displacements			●	
Amount of mitigation required to address effects on emergency vehicle response times (EJ)	●		●	
EJ proportion of total noise impacts			●	

SUMMARY OF ALTERNATIVES EVALUATION – ENVIRONMENTAL FACTORS

Environmental Factors

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Waters and wetlands				●
Habitat for listed plant species				●
Habitat for listed wildlife species (California tiger salamander)				●
Wildlife corridor impacts	●	●		●
Conservation areas	●			●
Permanent use of 4(f)/6(f) park resources				●
Permanent adverse effects on NRHP-listed/eligible resources				●
Permanent significant impacts on CEQA-only historic resources			●	●

● Best-performing alternative (fewest environmental impacts)

CALTRAIN BUSINESS PLAN

Growth Scenarios

2040 Baseline Growth Scenario (6 Caltrain + 4 HSR)

Features

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

Passing Track Needs

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

Options & Considerations

- Service approach is co
- Opportunity to consider later in Business Plan p

Moderate Growth Scenario (8 Caltrain + 4 HSR)

Features

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

Passing Track Needs

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

Options & Considerations

- To minimize passing track requirements, each local pattern can only stop twice between San Bruno and Hillsdale
- Each local pattern can only stop once between Hillsdale and Redwood City
- Atherton, College Park, and San Martin served on an hourly or exception basis

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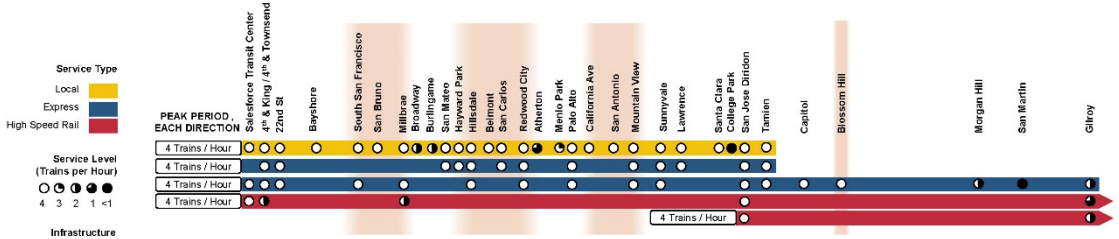
High Growth Scenarios (12 Caltrain + 4 HSR)



Features

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

Passing Track Needs

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

Options & Considerations

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

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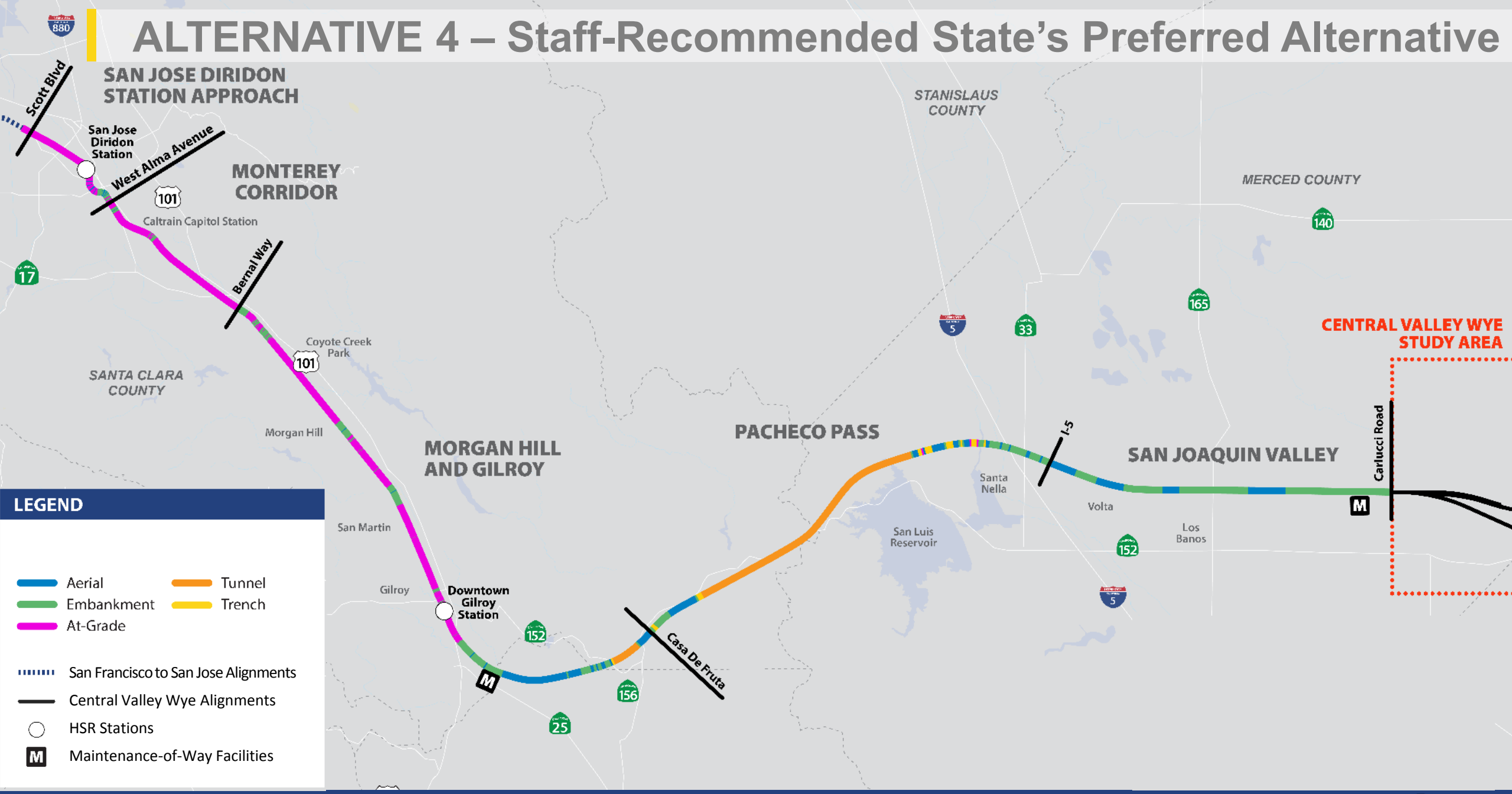
ALTERNATIVE 4 – Staff-Recommended State's Preferred Alternative

Conclusions of Technical Analysis

- Fewest displacements
- Fewest road closures
- Fewest impacts on wetlands and habitats
- Good access to transit systems and services
- Fewest impacts on natural resources
- Fewest visual impacts
- Marginal increase in system travel time
- More noise (if no quiet zones)
- Lowest capital cost
- Allows for extension of electrified Caltrain service to Gilroy

ALTERNATIVE 4 – Staff-Recommended State's Preferred Alternative



NEXT STEPS

STATE'S PREFERRED ALTERNATIVE

COMMUNITY WORKING GROUP MEETINGS

Morgan Hill-Gilroy CWG
July 10, 6:00 – 8:00 pm
Morgan Hill Community and Cultural Center
Morgan Hill, CA

San Jose CWG
July 16, 6:00 – 8:00 pm
Leininger Center
San Jose, CA

San Francisco CWG
July 22, 6:00 – 8:00 pm
Bay Area Metro Center
San Francisco, CA

San Mateo County CWG
July 24, 6:00 – 8:00 pm
Burlingame Library
Burlingame, CA

One-on-one briefings will be scheduled by request with South Peninsula CWG members

OPEN HOUSES

South Peninsula Open House
August 6, 5:00 to 8:00 p.m.
Adrian Wilcox High School
Santa Clara, CA

San Francisco Open House
August 12, 5:00 to 8:00 p.m.
Bay Area Metro Center
San Francisco, CA

San Mateo Open House
August 19, 5:00 to 8:00 p.m.
Sequoia High School
Redwood City, CA

Gilroy Open House
August 8, 5:00 to 8:00 p.m.
Gilroy Portuguese Hall
Gilroy, CA

San Jose Open House
August 15, 5:00 to 8:00 p.m.
City Hall Council Chambers
San Jose, CA

Los Banos Open House
August 21, 5:00 to 8:00 p.m.
Los Banos Community Center
Los Banos, CA

UPCOMING CITY/COUNTY PRESENTATIONS

San Mateo County Board of Supervisors
July 9, 9:30 a.m.

Santa Clara Valley & Pacheco Pass Conservation Community Update
July 10, 10:00 a.m.

Grasslands Ecological Area Stakeholder Group
July 15, 1:00 p.m.

Morgan Hill City Council
July 17, 6:00 p.m.

Brisbane City Council
July 18, 6:30 p.m.

SFCTA Board of Directors
July 23, 10:00 a.m.

Millbrae City Council
July 23, 7:00 p.m.

Local Policy Maker Working Group
July 25, 5:30 p.m.

Transbay Joint Powers Authority
August 8, 9:30 a.m.

Gilroy City Council
August 5, 6:00 p.m.

Santa Clara South County Joint Planning Advisory Committee
August TBD

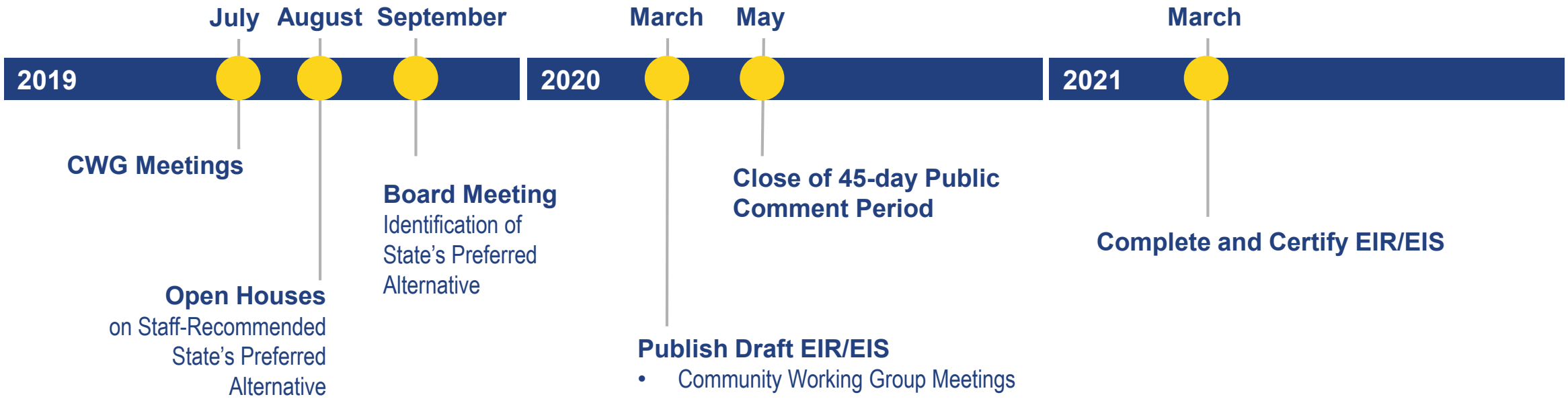
San Jose City Council
August 20, 1:30 p.m.

Santa Clara City Council
August 20, 6:30 p.m.

Santa Clara County Board of Supervisors
August 27, 9:30 a.m.

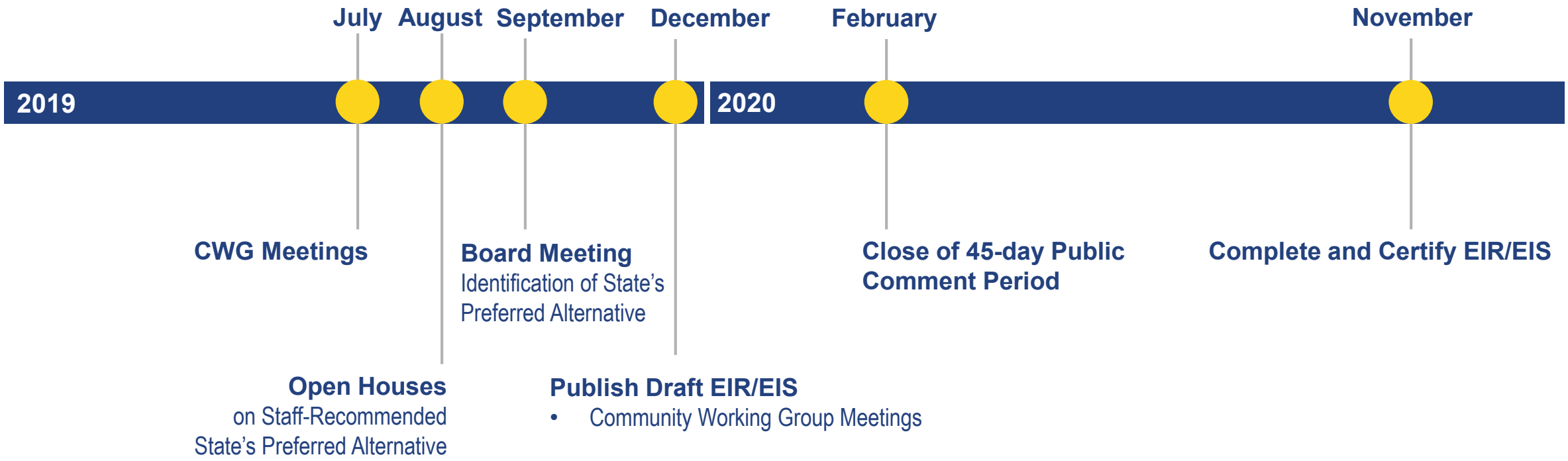
NEXT STEPS

SAN FRANCISCO TO SAN JOSE PROJECT SECTION



NEXT STEPS

SAN JOSE TO MERCED PROJECT SECTION



REQUEST FOR COMMUNITY FEEDBACK

CALIFORNIA HIGH-SPEED RAIL

Please share the information presented today with your communities and give us your feedback.

- Comments will be accepted through **August 22, 2019** to be included in the staff report to the Authority Board.

- Comments can be submitted via email to San.Francisco_San.Jose@hsr.ca.gov or via mail to: Northern California Regional Office
  California High-Speed Rail Authority
  100 Paseo De San Antonio, Suite 300
  San Jose, CA 95113

OR

- Share feedback in person at an upcoming Open House or at the **Authority Board meeting on September 17 in San Jose, CA**.

Headquarters
California High-Speed Rail Authority
770 L Street, Suite 620
Sacramento, CA 95814
www.hsr.ca.gov

Northern California Regional Office
California High-Speed Rail Authority
100 Paseo De San Antonio, Suite 300
San Jose, CA 95113

APPENDIX A
SAN FRANCISCO TO SAN JOSE

CHARACTERISTICS OF ALTERNATIVES

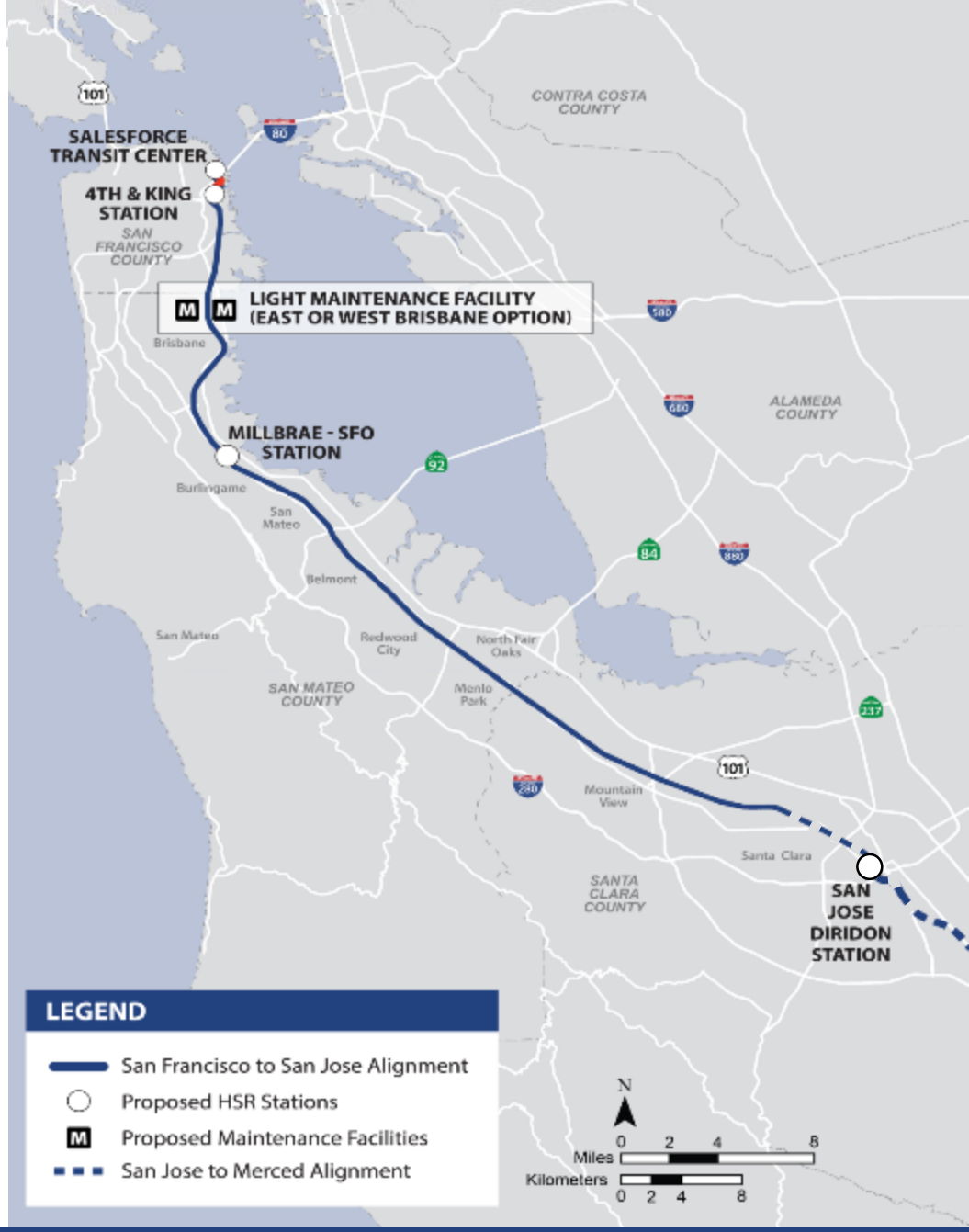
LIGHT MAINTENANCE FACILITY

Alternatives Carried Forward

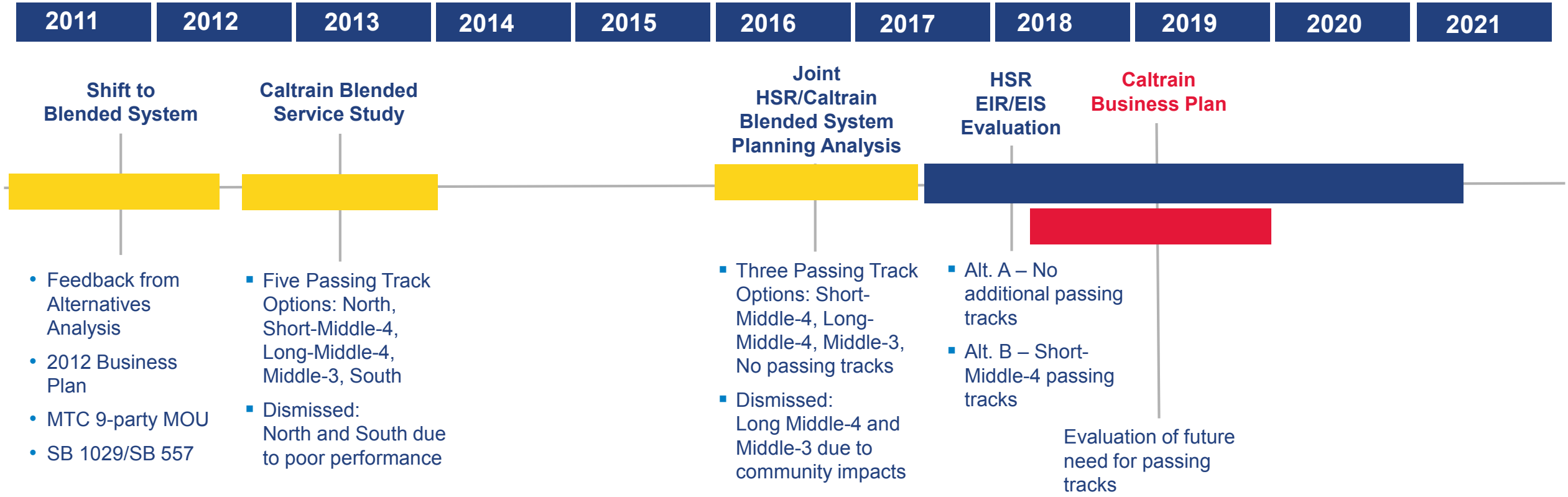
Brisbane

Alternative A
M East

Alternative B
M West



PASSING TRACKS EVALUATION TIMELINE



PASSING TRACKS

Alternatives Eliminated

- **Long Middle 3-Track Passing Track Option (16 miles)**
  - » San Mateo to Palo Alto
  - » Greatest community impacts and costs
  - » Impacts 16 at-grade crossings
  - » Adjacent to 8.3 miles of residential uses

- **Long Middle 4-Track Passing Track Option (8 miles)**
  - » San Mateo to Southern Redwood City
  - » Moderate community impacts and costs
  - » Impacts 6 at-grade crossings
  - » Adjacent to 2.3 miles of residential uses

Note: "Middle" means middle of the corridor

PASSING TRACKS

Alternatives Carried Forward

- **Alternative A: No Additional Passing Track Option**

- **Alternative B: Short-Middle 4-Track Passing Track Option (6 miles)**
  - » San Mateo to Redwood City
  - » Adjacent to 1.8 miles of residential uses
  - » Relocates San Carlos Caltrain station

Note: "Middle" means middle of the corridor

APPENDIX B
SAN JOSE TO MERCED

CHARACTERISTICS OF ALTERNATIVES

SAN JOSE DIRIDON STATION APPROACH

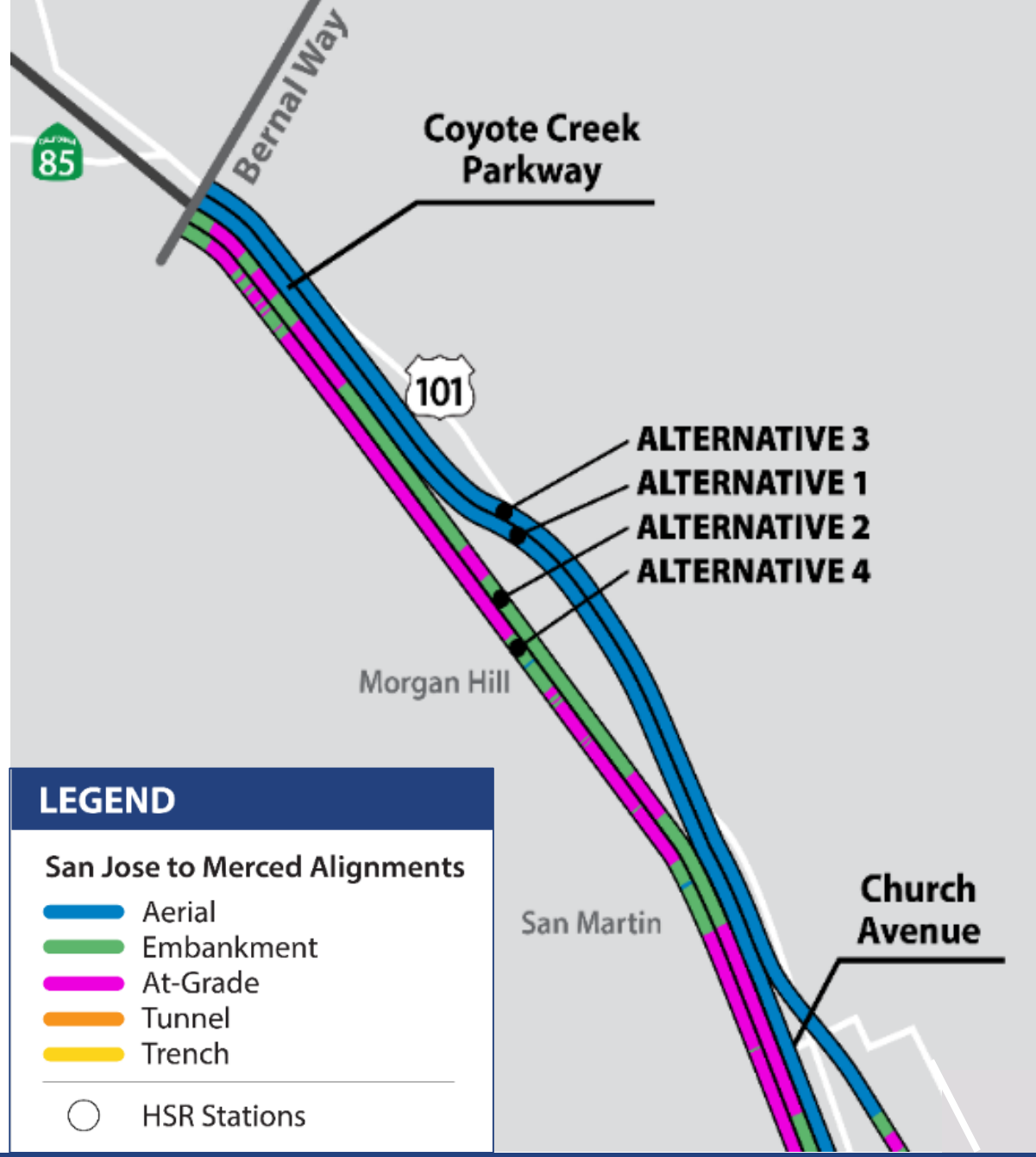
- **Alternative 1**
  - » Short Viaduct to I-880
  - » Aerial Diridon Station
- **Alternatives 2 and 3**
  - » Long Viaduct to Scott Blvd.
  - » Aerial Diridon Station
- **Alternative 4**
  - » At-grade alignment predominantly in existing railroad right-of-way
  - » At-grade Diridon Station

MONTEREY CORRIDOR

- **Alternatives 1 and 3**
  - » Viaduct in median of Monterey Road
  - » Narrowing of Monterey Road
- **Alternative 2**
  - » Grade-separated embankment between UPRR and Monterey Road
  - » Narrowing of Monterey Road
- **Alternative 4**
  - » At-grade predominantly in existing railroad right-of-way

MORGAN HILL TO SAN MARTIN

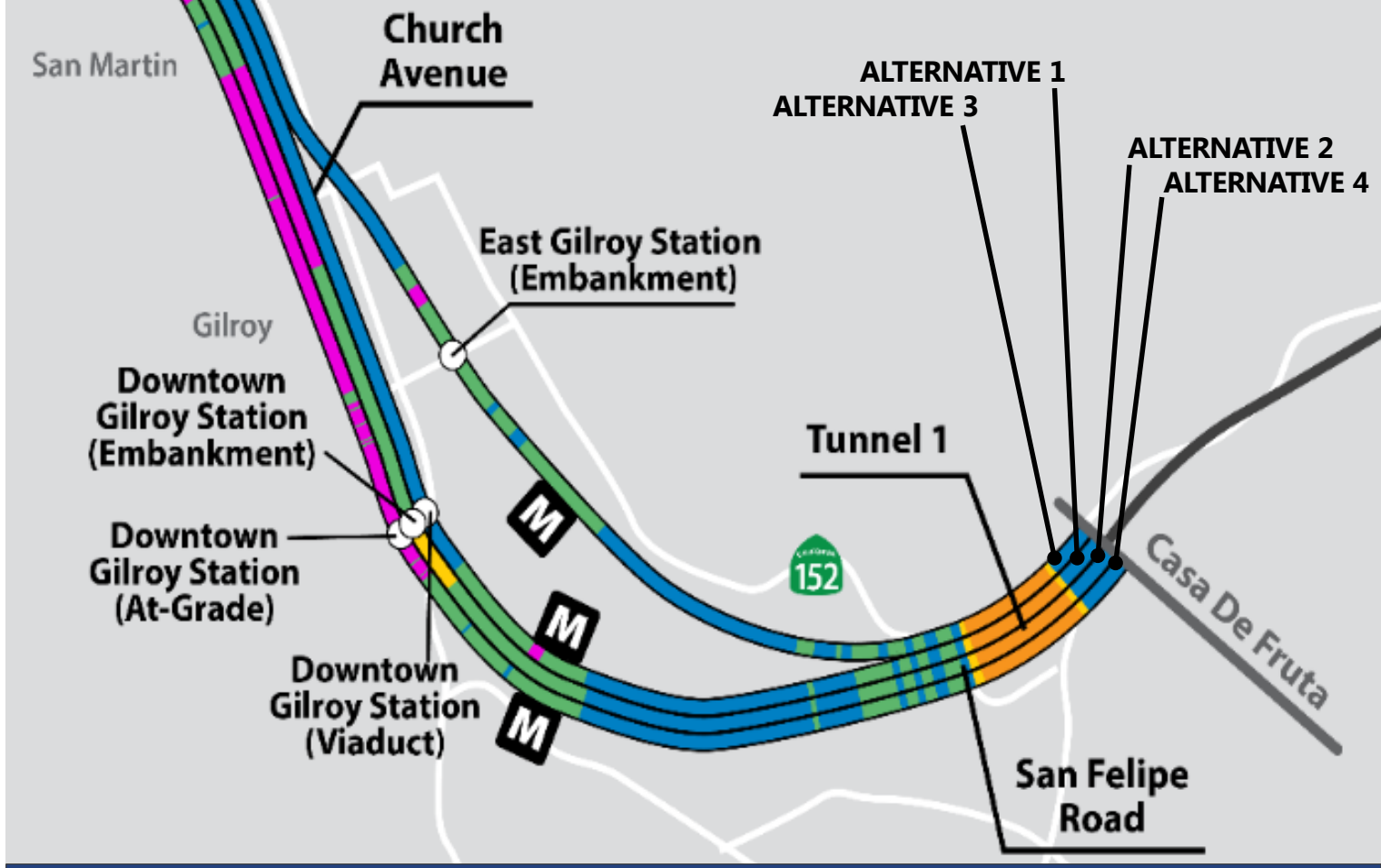
- **Alternatives 1 and 3**
  - » Viaduct
  - » Bypass downtown Morgan Hill
- **Alternative 2**
  - » Grade-separated embankment
  - » Through downtown Morgan Hill
- **Alternative 4**
  - » At-grade
  - » Predominantly in existing UPRR right-of-way



SAN MARTIN TO GILROY

- **Alternative 1 – Downtown Gilroy**
  - » Viaduct
- **Alternative 2 – Downtown Gilroy**
  - » Grade-separated embankment
- **Alternative 3 – East Gilroy**
  - » Viaduct to grade-separated embankment
- **Alternative 4 – Downtown Gilroy**
  - » At-grade
  - » Predominantly in existing UPRR right-of-way

Alternatives converge at 1.6-mile Tunnel 1 west of Casa De Fruta



LEGEND

San Jose to Merced Alignments

- Aerial
- Embankment
- At-Grade
- Tunnel
- Trench
- HSR Stations
- M Maintenance-of-Way Facility

PACHECO PASS

- **All alternatives have the same alignment**
  - 13.5-mile Tunnel
  - Embankment
  - Viaduct

SAN JOAQUIN VALLEY

- **All alternatives have the same alignment**
  - » Embankment
  - » Viaduct