CALIFORNIA HIGH-SPEED RAIL
NORTHERN CALIFORNIA REGION

Staff-Recommended State's Preferred Alternative

San Jose City Council
August 20, 2019

OBJECTIVE

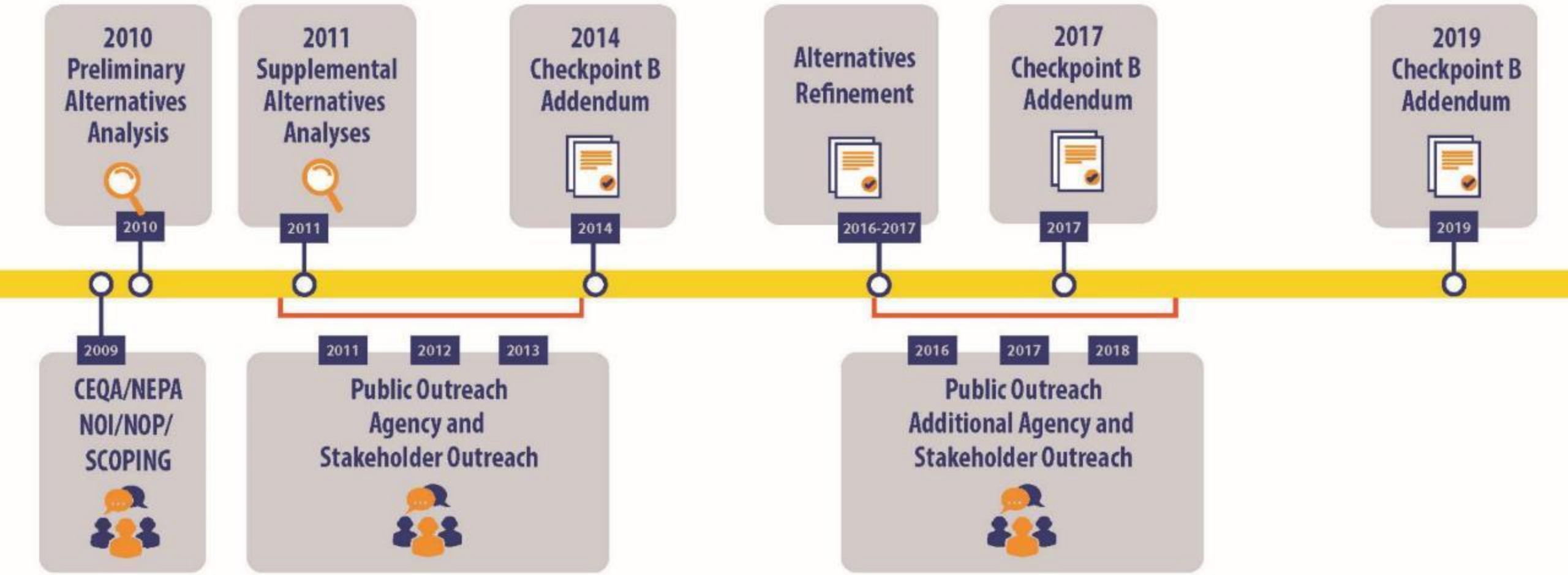
Share **staff-recommended State's Preferred Alternative** and process for identifying the State's Preferred Alternative.

- 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.

SAN JOSE TO MERCED PROJECT SECTION

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

ALTERNATIVES DEVELOPMENT PROCESS



STATE'S PREFERRED ALTERNATIVE

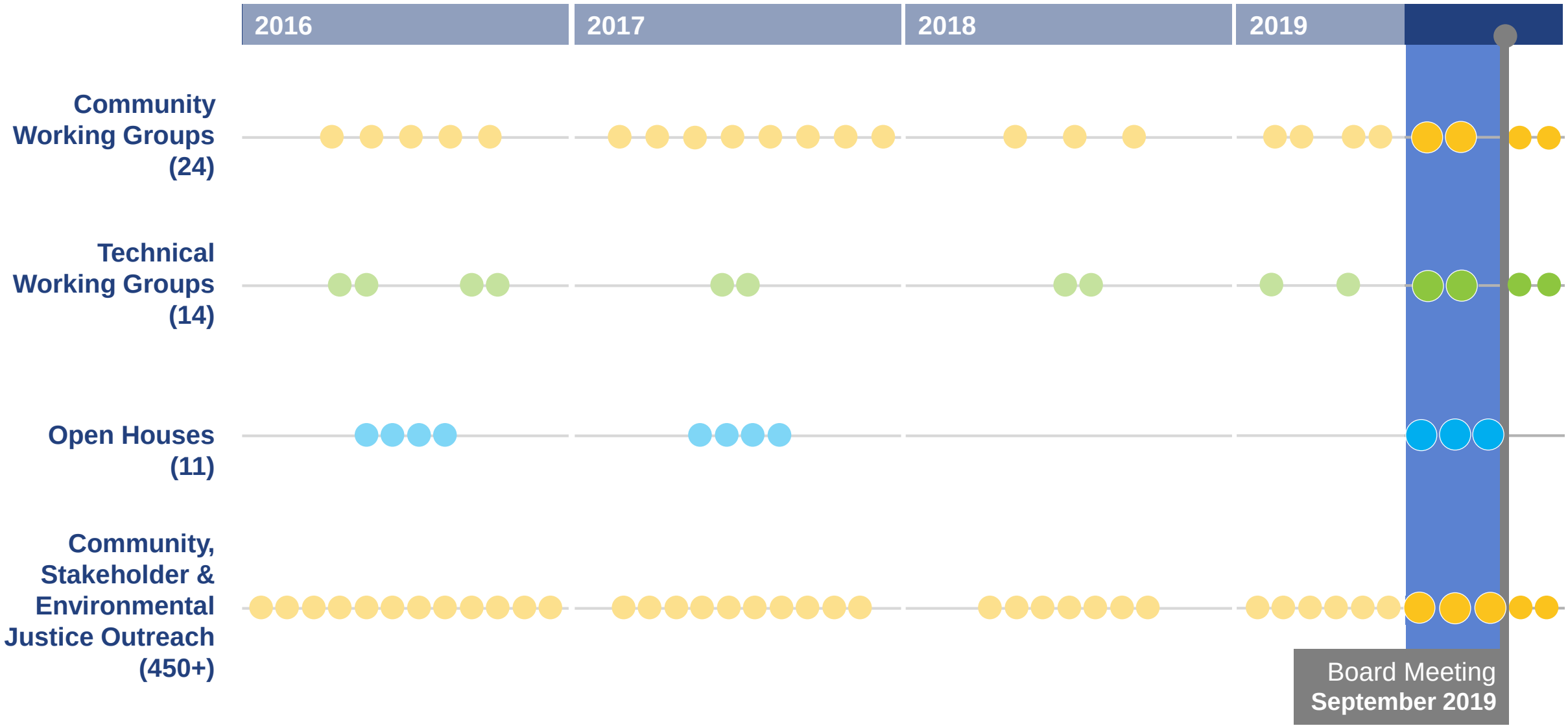
INTERFACING WITH NORTHERN CALIFORNIA AGENCIES

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	●		●	●		●		●

SAN JOSE TO MERCED COMMUNITY OUTREACH

2016 – 2019



OUTREACH IN GREATER GARDNER CORRIDOR

San Jose CWG Membership

14 Meetings since 2016

- Gardner Neighborhood Association
- Willow Glen Neighborhood Association
- Delmas Park Neighborhood Association

Outreach in the Community

11 Meetings since 2016

- Gardner Neighborhood Leaders
- Gardner Neighborhood Association
- Willow Glen Neighborhood Leaders
- Willow Glen Neighborhood Association
- Delmas Park Neighborhood Association
- Gregory Plaza Neighborhood Association
- San Jose Community Open Houses

Coordination with Partner Agencies

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

SAN JOSE DIRIDON STATION AREA COMMUNITY ENGAGEMENT

Caltrain

Valley Transportation Authority
Solutions that move you

OUTREACH IN MONTEREY CORRIDOR

San Jose CWG Membership

14 Meetings since 2016

- Los Paseos Neighborhood Association
- Senter Monterey Neighborhood Association
- Tulare Hill Homeowner's Association
- D10 Leadership Coalition
- Hayes Neighborhood Association
- Guadalupe Washington Neighborhood Association
- Oak Grove Neighborhood Association
- Flowers Neighborhood Association

Outreach in Community

9 Meetings since 2016

- District 2 Leadership
- Los Paseos Neighborhood Association
- Senter Monterey Neighborhood Association
- Oak Grove Neighborhood Association
- Edenvale Great Oaks Plan Implementation Coalition

Coordination with Partner Agencies

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Caltrain

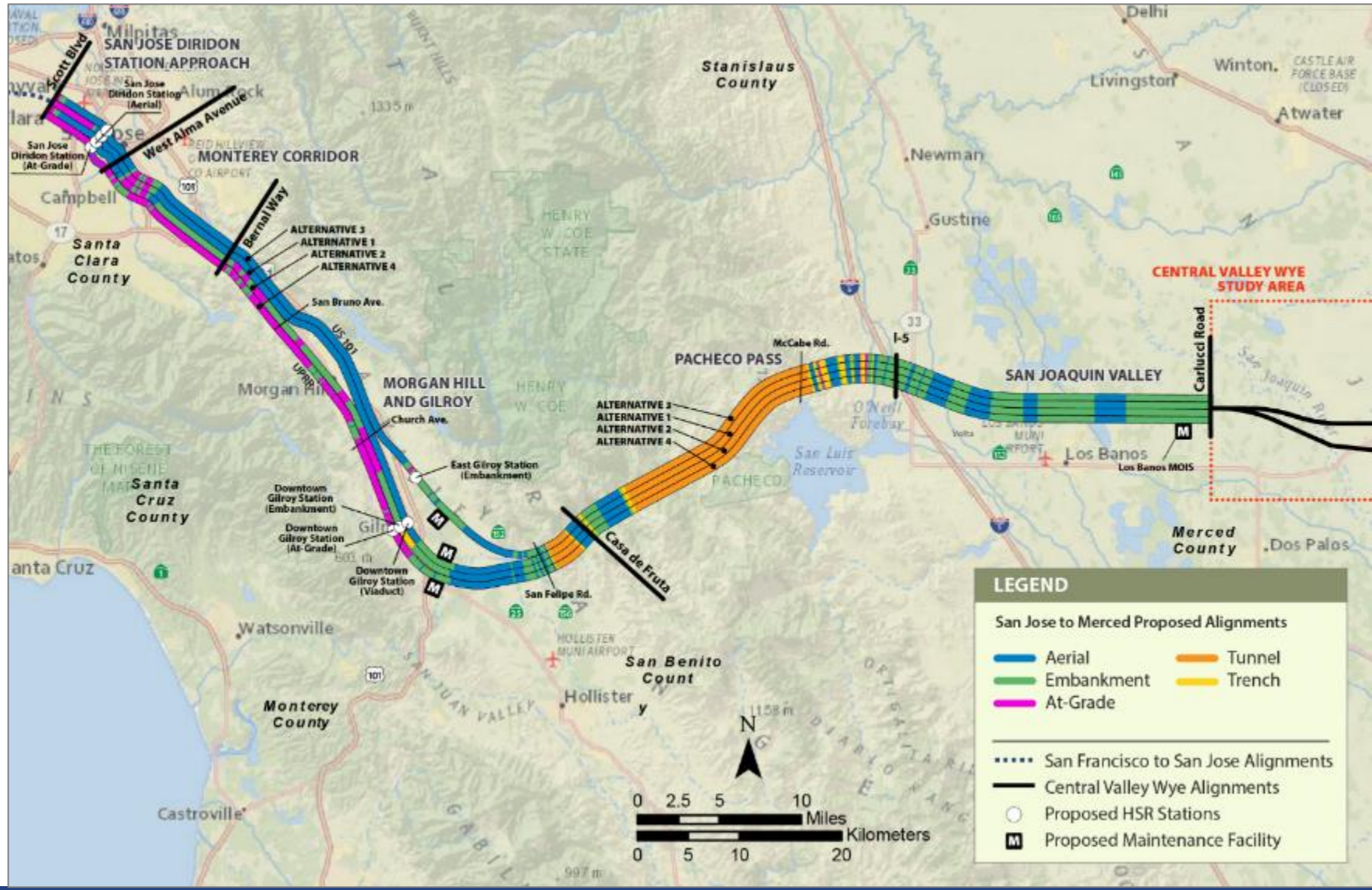
Valley Transportation Authority
Solutions that move you

SAN JOSE TO MERCED PROJECT SECTION

RANGE OF ALTERNATIVES

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



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

CALIFORNIA HIGH-SPEED RAIL

HSR ALIGNMENT ALTERNATIVES IN SAN JOSE AT MONTEREY ROAD AND BRANHAM LANE

AERIAL VIEW

CONNECTING AND TRANSFORMING CALIFORNIA

SAN JOSE TO MERCED PROJECT SECTION

IDENTIFYING A PREFERRED ALTERNATIVE

STATE'S 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
- Traffic
- Emergency Vehicle Access/ Response Time

FACT SHEETS: TECHNICAL ANALYSIS

CALIFORNIA High-Speed Rail Authority

ALTERNATIVES EVALUATION FOR SAN JOSE TO MERCED PROJECT SECTION

WHY IS STAFF RECOMMENDING ALTERNATIVE 4 AS THE STATE'S PREFERRED ALTERNATIVE?

Teams of rail and environmental planners, engineers, and other specialists in the design and operation of high-speed rail services have undertaken a complex analysis of the four alternatives. The results indicate that all of the alternatives have tradeoffs – advantages and disadvantages. Nevertheless, Alternative 4 was identified as the staff-recommended State's Preferred Alternative because it provides the best overall balance between system performance, community, and environmental factors. The factors that differentiate the four alternatives are presented in the tables below.

HOW WERE THE ALTERNATIVES EVALUATED?

Alternatives 1, 2, 3, and 4 were evaluated by comparing the four alternatives across three sets of criteria:[1]

System Performance, Operations, and Costs. The best-performing alternative is **bold**.

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)[2]	43	**50**	35	**50**
Travel time — San Jose and Gilroy[3] (minutes)	17-18	17-18	**16-17**	23
Proposition 1A service travel time compliance	✓	✓	✓	✓
Estimated capital costs[4] (2017$ billions)	$20.5	$17.7	$20.8	**$13.6**
Estimated annual operations and maintenance costs[5] (2017$ millions)	$162			

SAN JOSE SUBSECTION – KEY DIFFERENTIATORS

- Displacements
- Agricultural Farmland
- Aesthetics and Visual Quality
- Land Use and Development
- Noise
- Environmental Justice
- Biological Resources
- Build Environment Historic Resources
- Emergency Vehicle Access/Response Time


CALIFORNIA High-Speed Rail Authority

SAN JOSE TO MERCED PROJECT SECTION

Review of Key Differentiators by Subsection

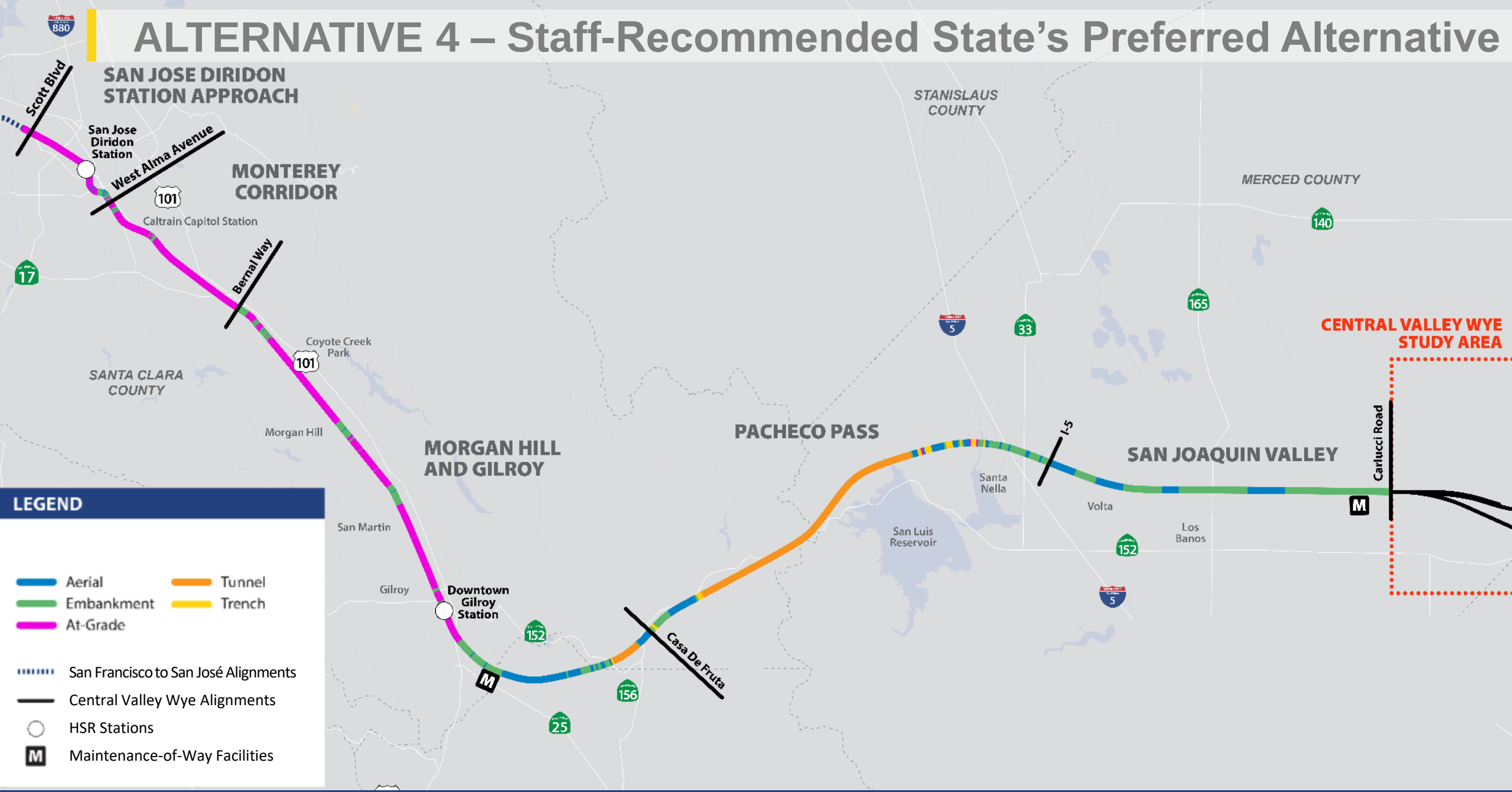
This section describes key community and environmental factors that differentiate the alternatives within each subsection of the project extent: Alternatives 1, 2, 3, and 4 vary in the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections. Because the alternatives are identical in the Pacheco Pass and San Joaquin Valley Subsections, those subsections are not discussed. Community and environmental factors that do not substantially differentiate alternatives in a given subsection are not included in the discussion. For example, because there are no agricultural lands in the San Jose Diridon Station Approach Subsection, that resource is not discussed for that subsection.

San Jose Diridon Station Subsection

- **Displacements**—Alternative 4 would have the lowest number of displacements (24) because of the alignment's primary location within the Caltrain right-of-way and its at-grade profile, whereas Alternatives 2 and 3 would have the most displacements (142 and 141 respectively for each Alternative) because of the viaduct design outside of the existing rail right-of-way. Alternative 1 would have more displacements (88) than Alternative 4 but less than Alternatives 2 and 3 because the viaduct section would end at I-880 instead of Scott Boulevard.
- **Aesthetics and visual quality**—Alternative 4 would have the lowest operational impact on aesthetics and visual quality because it would be located at grade mostly within the Caltrain right-of-way. Alternative 1 would have more impacts on visual quality than Alternative 4 because it would be on an elevated viaduct (to I-880) outside existing rail rights-of-way through most of San Jose. Alternatives 2 and 3 would have the highest impacts on visual quality because they would be on elevated viaduct outside existing rail rights-of-way through Santa Clara and downtown San Jose (approximately 2 more miles of viaduct than Alternative 1).
- **Noise**—Alternative 4 would have higher operational noise impacts than the other alternatives because it would result in the sounding of HSR train horns at two at-grade crossings south of the San Jose Diridon Station, while the other project alternatives would not. Alternative 4 and Alternative 1 would also result in sounding of HSR train horns when passing through the Santa Clara Station while Alternatives 2 and 3 would not.
- **Environmental justice**—Alternative 4 and Alternative 1 would have the lowest operational aesthetics and visual quality, community cohesion, and displacement impacts on minority and low-income populations in Santa Clara because they would be at grade, mostly within the Caltrain right-of-way. Alternatives 2 and 3 would have the highest impacts on aesthetics and visual quality because they would be on an elevated viaduct from Tamien to Scott Boulevard. Alternative 4 and Alternative 1 would result in HSR sounding horns when going through the Santa Clara Caltrain station, while Alternatives 2 and 3 would not.

Alternative 4 would have lowest impacts relative to aesthetics and visual quality and displacement on minority and low-income populations in and south of downtown San Jose because it would be located at grade, mostly within the Caltrain right-of-way. Alternatives 1, 2 and 3 would have more aesthetic and visual quality and displacement impacts than Alternative 4 because they would be on an elevated viaduct (to I-880) outside existing rail rights-of-way through most of San Jose. Alternative 4 would have higher noise impacts than the other alternatives because it would result in the sounding of HSR train horns at two at-grade roadway crossings south of the San Jose Diridon Station while the other project alternatives would not. Alternative 4 would have greater effects on community cohesion in the North Willow Glen and Gardner neighborhood of the alternatives, while Alternatives 1, 2 and 3 would have greater effects than Alternative 4 on community cohesion of the neighborhood east of the Caltrain right of way along Auzerais Avenue.

ALTERNATIVE 4 – Staff-Recommended State's Preferred Alternative



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			●	

*Environmental Justice

● Best-performing alternative (fewest community 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)

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

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

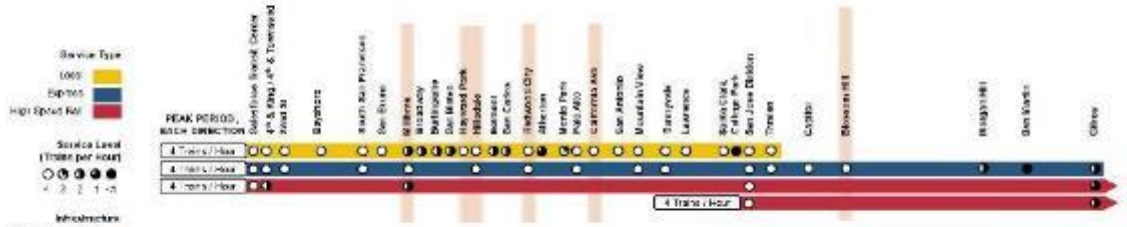
Passing Track Needs

- 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

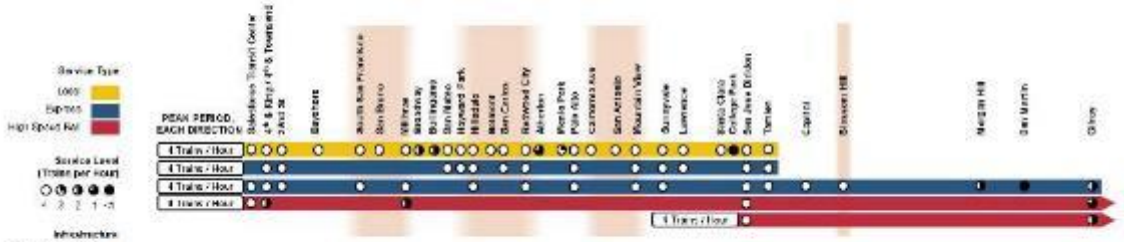
Passing Track Needs

- 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

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

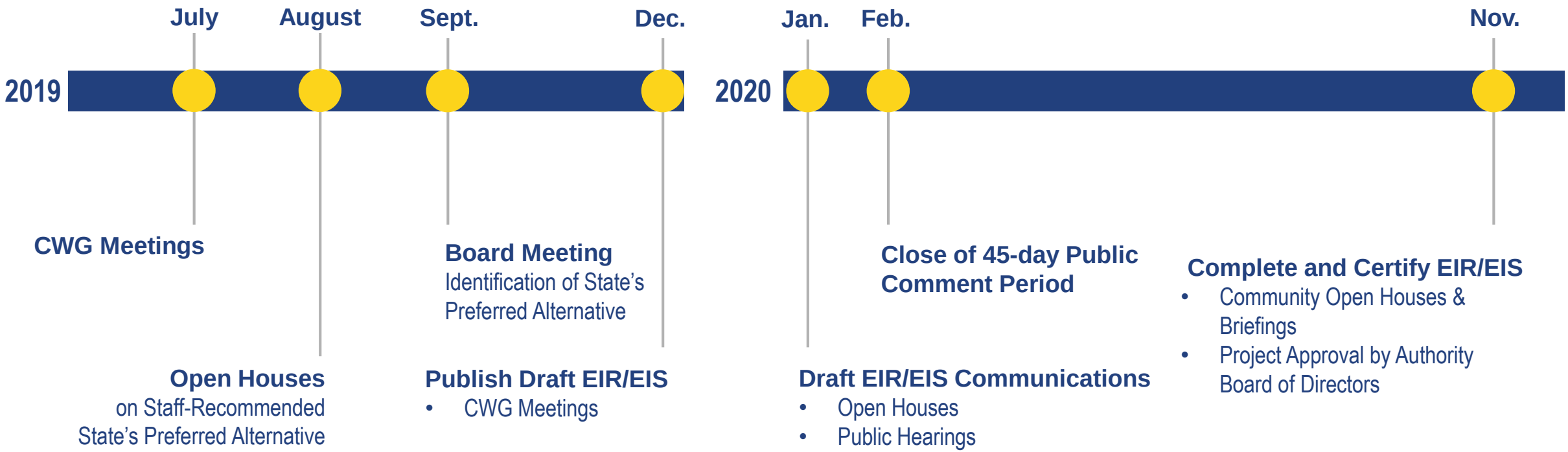
- Requires up to 15 miles of new 4 track segments: South San Francisco to Millbrae, Hayward Park to Redwood City, and northern Santa Clara County between Palo Alto and Mountain View stations (shown: California Avenue to north of Mountain View)

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

NEXT STEPS

NEXT STEPS


July
August
Sept.
Dec.
Jan.
Feb.
Nov.
2019
2020
CWG Meetings
Board Meeting
Identification of State's Preferred Alternative
Close of 45-day Public Comment Period
Complete and Certify EIR/EIS
• Community Open Houses & Briefings
• Project Approval by Authority Board of Directors
Open Houses
on Staff-Recommended State's Preferred Alternative
Publish Draft EIR/EIS
• CWG Meetings
Draft EIR/EIS Communications
• Open Houses
• Public Hearings

SAN JOSE CWG FEEDBACK

JULY 17, 2019

- Diverse views from broad range of stakeholders
- Positive feedback on at-grade alignment in Monterey corridor (i.e. not viaduct)
- Interest in grade separations throughout corridor including community suggestion for trench in Monterey Corridor
- Noise impacts and mitigations for communities along the rail corridor
- Emergency vehicle access to Gregory Plaza
- Interest in more details of analysis and the Draft EIR/EIS

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

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

Gilroy Open House
August 22, 5:00 to 8:00 p.m.
Gilroy Portuguese Hall
Gilroy, CA
*rescheduled from August 8

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.Jose_Merced@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**.

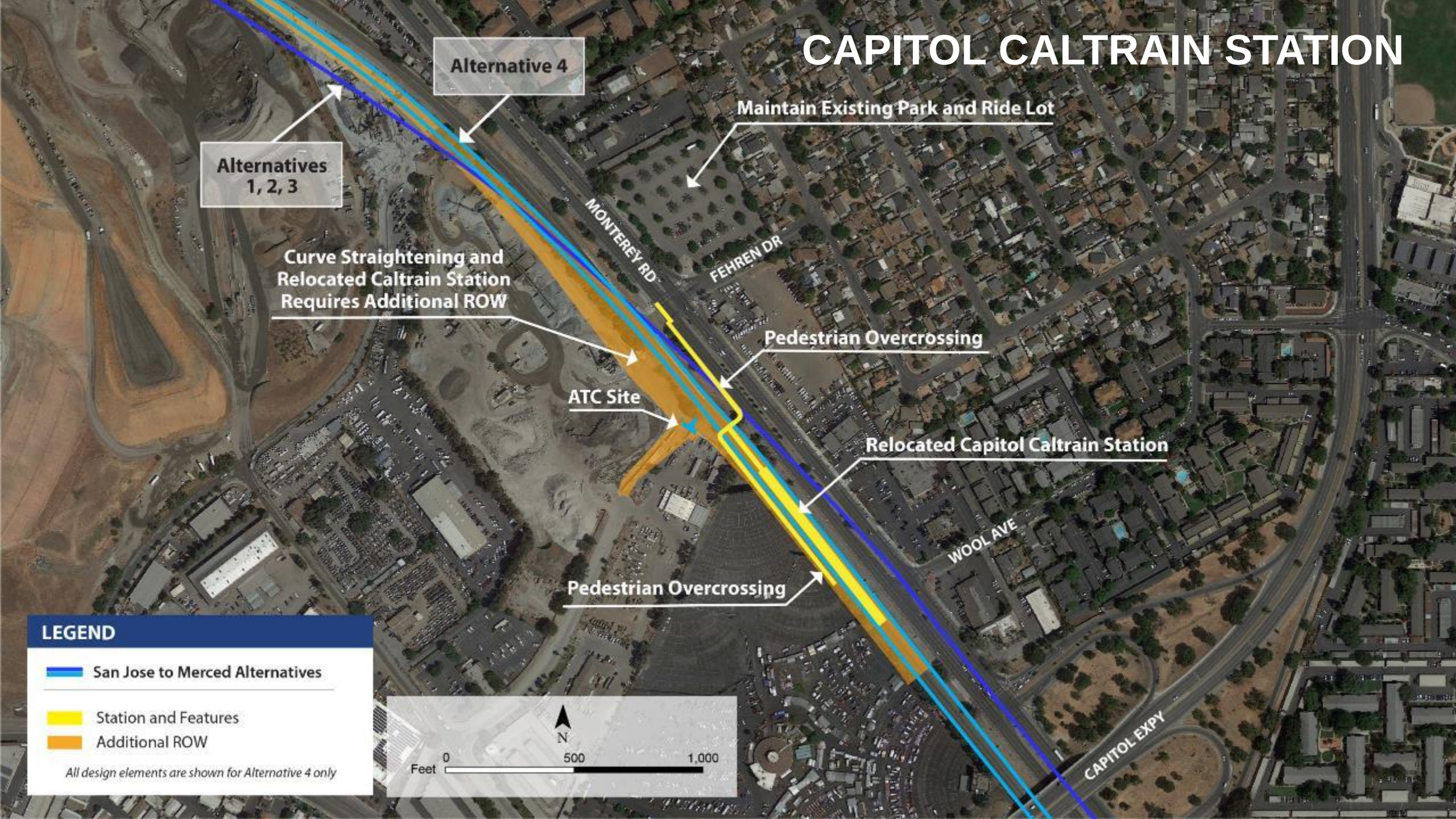
Headquarters
California High-Speed Rail Authority
770 L Street, Suite 620
Sacramento, CA 95814
www.hsr.ca.gov

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

APPENDIX A – SAN JOSE DETAIL

DIRIDON STATION


GARDNER NEIGHBORHOOD
Alternative 4
Alternatives 1, 2, 3
280
AUZERAIS AVE
Shifting Tracks to West Requires Additional ROW
New Single-Track Rail Bridge- Leave Existing Rail Bridge
BIRD AVE
W VIRGINIA ST
DELMAS AVE
87
Replace Existing Rail Bridge
New Single-Track Rail Bridge - Leaving Existing Rail Bridge
PREVOST ST
Avoid Fuller Park
Shifting Tracks to West Requires Additional ROW
LEGEND
San Jose to Merced Alternatives
Quad Gates
Station and Features
Additional ROW
All design elements are shown for Alternative 4 only
N
Feet
0
500
1,000


CAPITOL CALTRAIN STATION
Alternative 4
Alternatives 1, 2, 3
Maintain Existing Park and Ride Lot
MONTEREY RD
FEHREN DR
Curve Straightening and Relocated Caltrain Station Requires Additional ROW
Pedestrian Overcrossing
ATC Site
Relocated Capitol Caltrain Station
WOOL AVE
Pedestrian Overcrossing
CAPITOL EXPY
LEGEND
San Jose to Merced Alternatives
Station and Features
Additional ROW
All design elements are shown for Alternative 4 only
N
0
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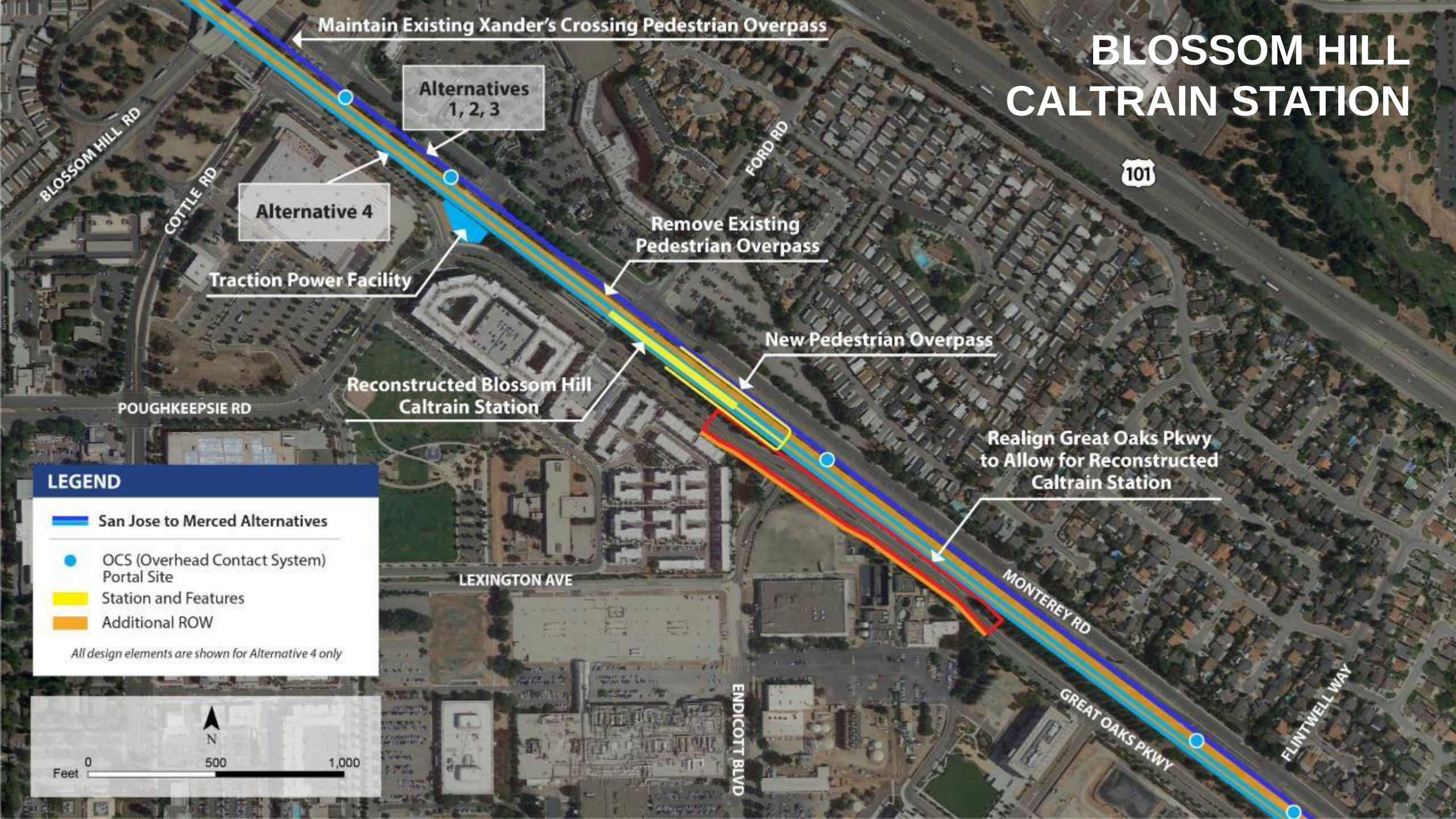
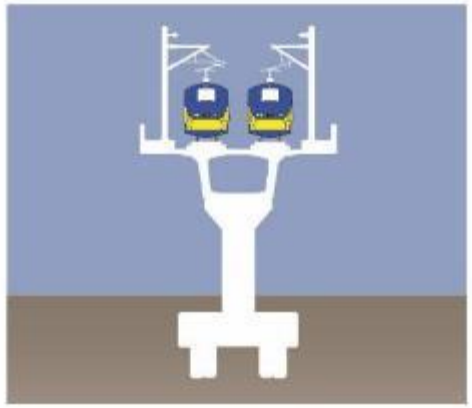
Feet


BLOSSOM HILL CALTRAIN STATION
Maintain Existing Xander's Crossing Pedestrian Overpass
Alternatives 1, 2, 3
Alternative 4
Traction Power Facility
Remove Existing Pedestrian Overpass
New Pedestrian Overpass
Reconstructed Blossom Hill Caltrain Station
Realign Great Oaks Pkwy to Allow for Reconstructed Caltrain Station
BLOSSOM HILL RD
COTTLE RD
FORD RD
101
POUGHKEEPSIE RD
LEXINGTON AVE
ENDICOTT BLVD
MONTEREY RD
GREAT OAKS PKWY
FLINTWELL WAY
LEGEND
San Jose to Merced Alternatives
OCS (Overhead Contact System) Portal Site
Station and Features
Additional ROW
All design elements are shown for Alternative 4 only
N
Feet
0
500
1,000

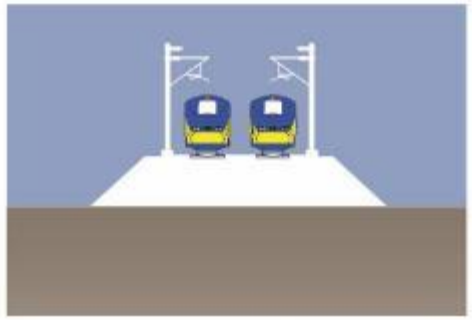
CROSS SECTIONS IN SAN JOSE

Viaduct



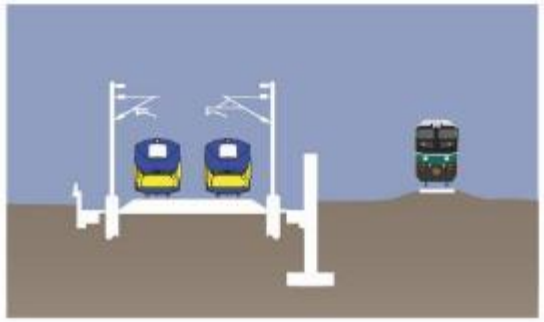
Two high-speed rail tracks on an aerial structure

Embankment



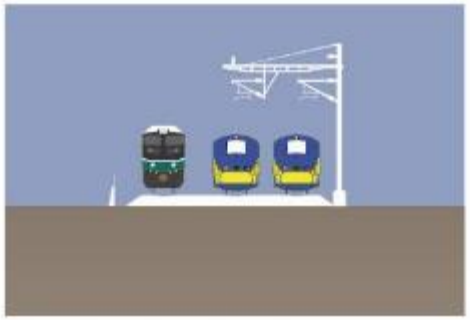
Two high-speed rail tracks on an earthen embankment

Dedicated At-Grade



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

Blended At-Grade

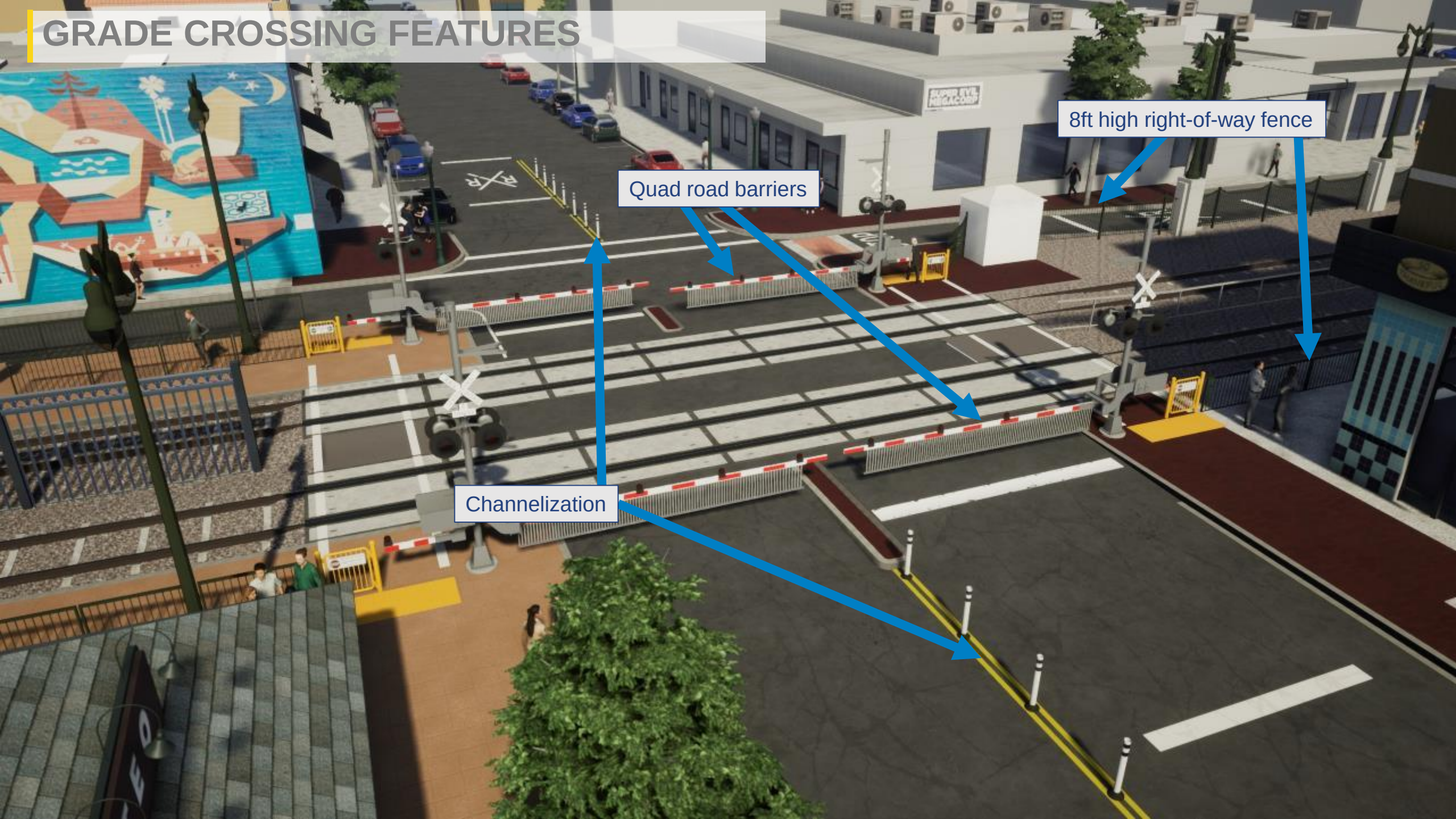


Two electrified, blended passenger tracks (with Caltrain) and one non-electrified freight track at ground level

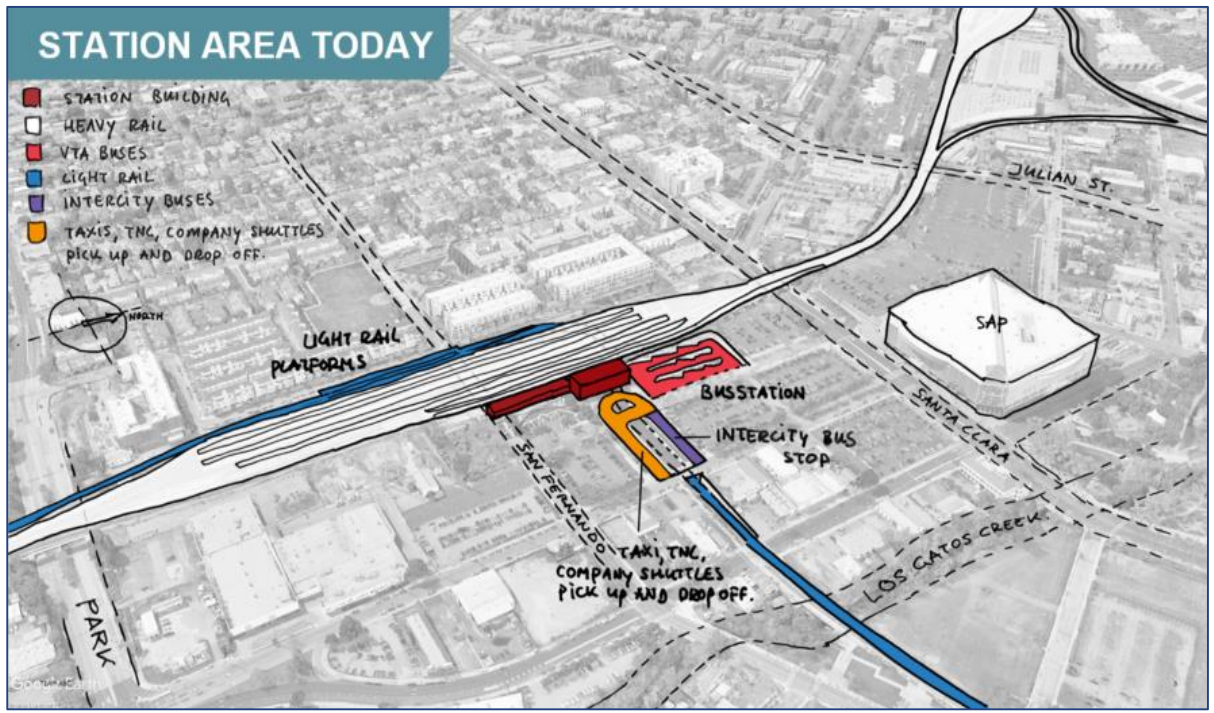
Alternatives 1, 2 & 3

Alternative 4

GRADE CROSSING FEATURES



DIRIDON INTERATED STATION CONCEPT PLAN



PROGRAM DEVELOPMENT AND STATUS

Project					
	1970's-1990's	1999-2005	2003-09, 2010-15	2000–04, 2015	2010 – 2018
Transbay Terminal	Conceptual Planning	Program Planning	Project Planning	EIR/EIS	Construction
	1999 - 2004	2002-2004	2004-2008	2009 – 2015	2017 – 2022
Caltrain Electrification	Conceptual Planning	Program Planning	Project Planning	EIR/EIS	Construction
	1984 – 2000	2000 – 2012	2009-12, 2016-18	2004-11, 2016-18	2020 – 2024
BART Extension to San Jose	Conceptual Planning	Program Planning	Project Planning	EIR/EIS	Construction
	1980s – 1996	1996 – 2005	2005 – 2009	2009 – 2020	
Introduction of High-Speed Rail	Conceptual Planning	Program Planning	Project Planning	EIR/EIS	Construction
	2018 – 2019				
Caltrain Business Plan	Conceptual Planning	Program Planning	Project Planning	EIR/EIS	Construction
	2018 – 2019	2019 – 2020			
DISC	Conceptual Planning	Program Planning	Project Planning	EIR/EIS	Construction

APPENDIX B – TECHNICAL ANALYSIS

SAN JOSE TO MERCED PROJECT SECTION

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

Community Factors

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

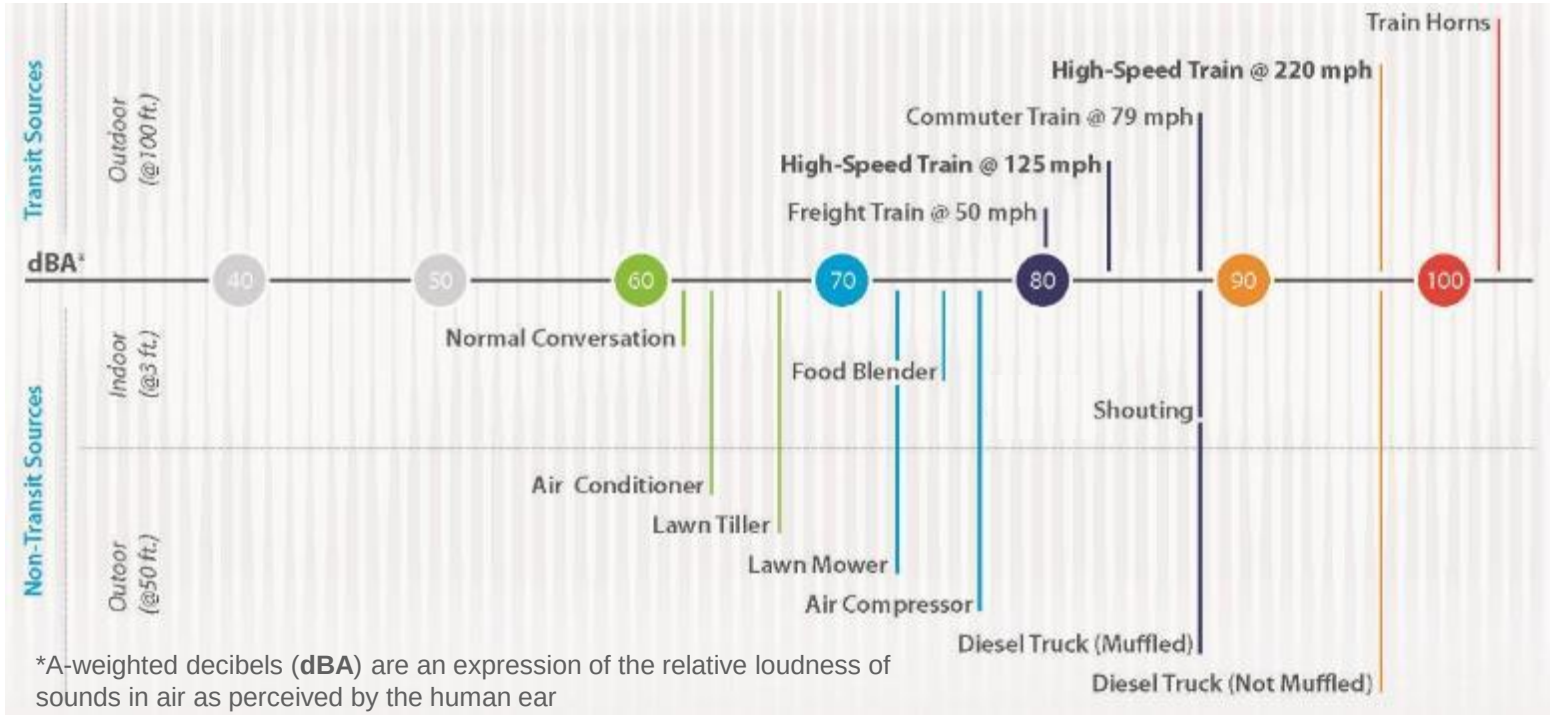
East Gilroy Station

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



*A-weighted decibels (**dBA**) are an expression of the relative loudness of sounds in air as perceived by the human ear

TRAFFIC

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

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**
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

Community Factors

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.

Environmental Factors

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**

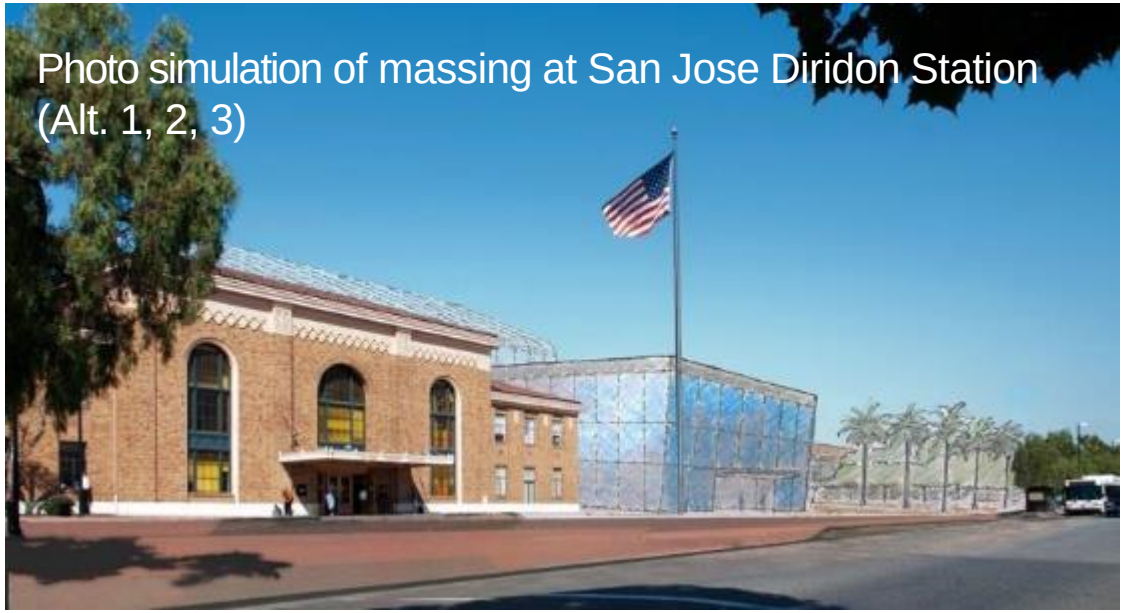


Photo simulation of massing at San Jose Diridon Station (Alt. 1, 2, 3)

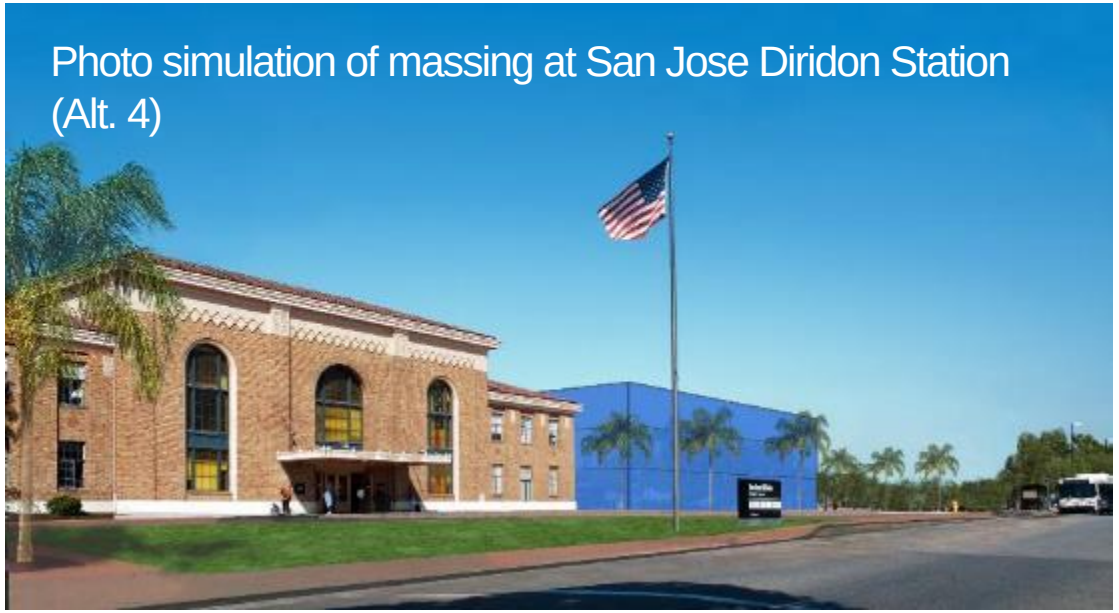


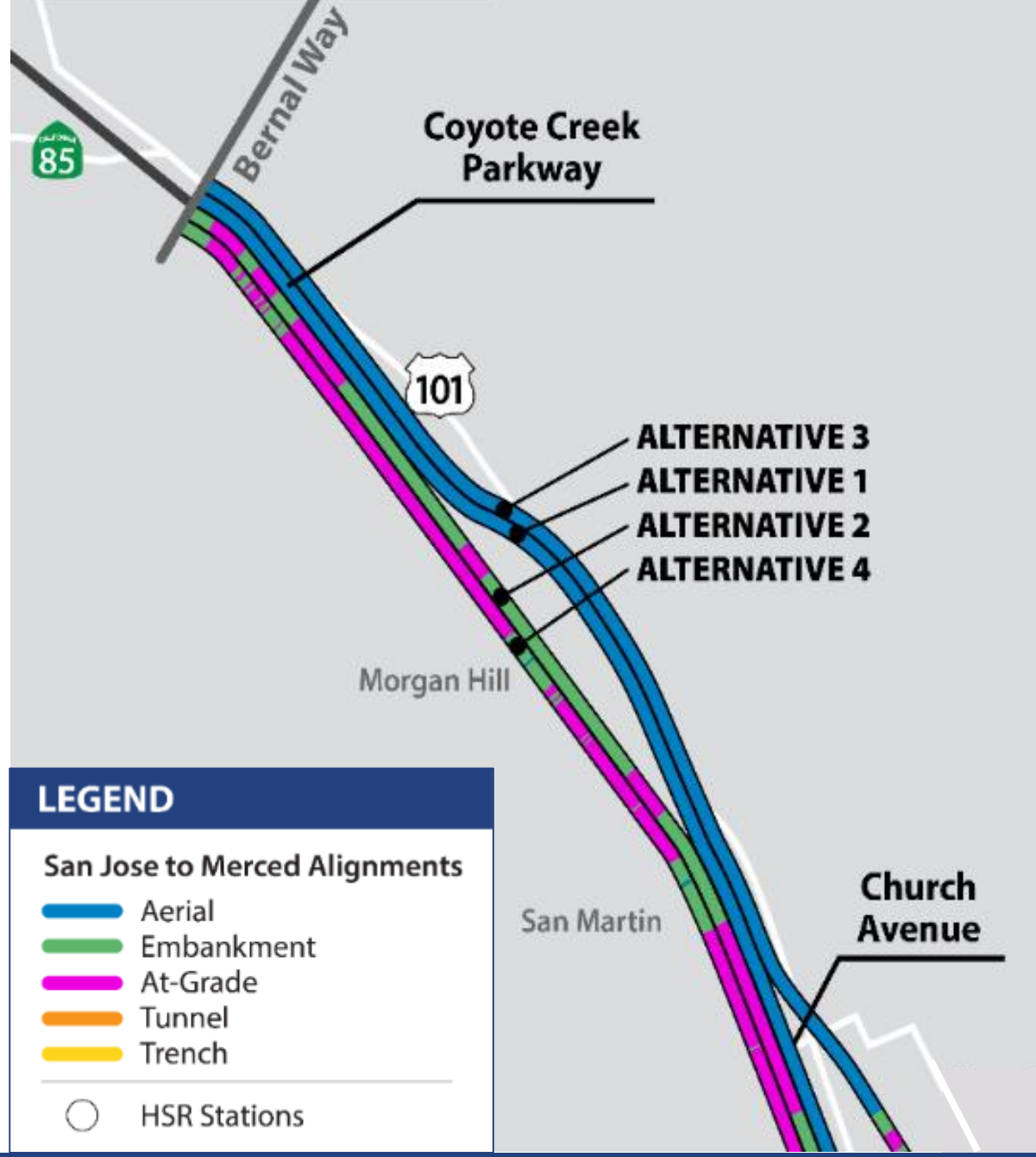
Photo simulation of massing at San Jose Diridon Station (Alt. 4)

APPENDIX C – SUPPLEMENTAL

SAN JOSE TO MERCED PROJECT SECTION

MORGAN HILL TO SAN MARTIN

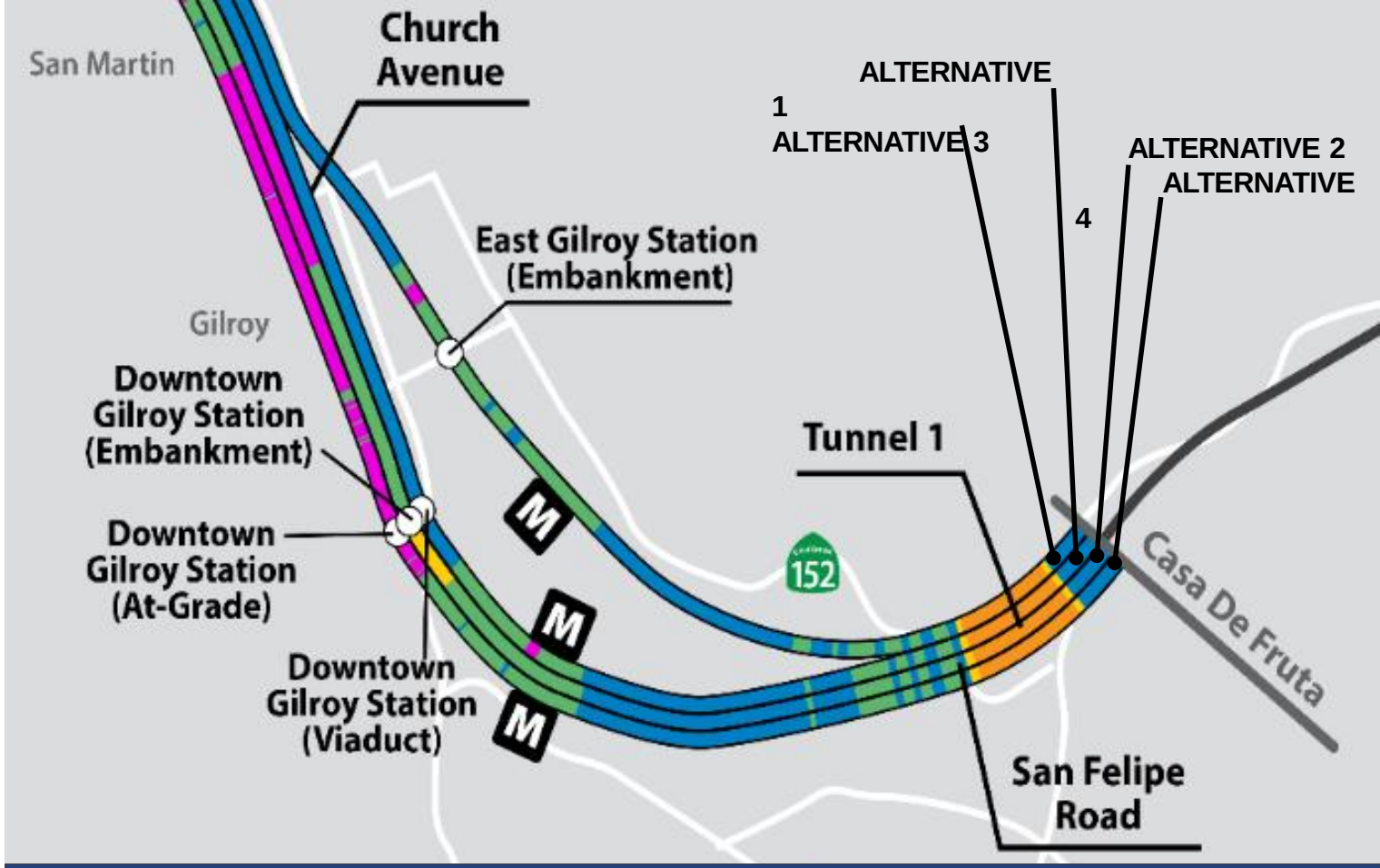
- **Alternatives 1 and 3**
  - » Viaduct
  - » Bypass downtown Morgan Hill
- **Alternative 2**
  - » Grade-separated embankment
  - » Through downtown Morgan Hill
- **Alternative 4**
  - » At-grade
  - » Predominantly in existing UPRR right-of-way



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

LEGEND

San Jose to Merced Alignments

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