

# 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.

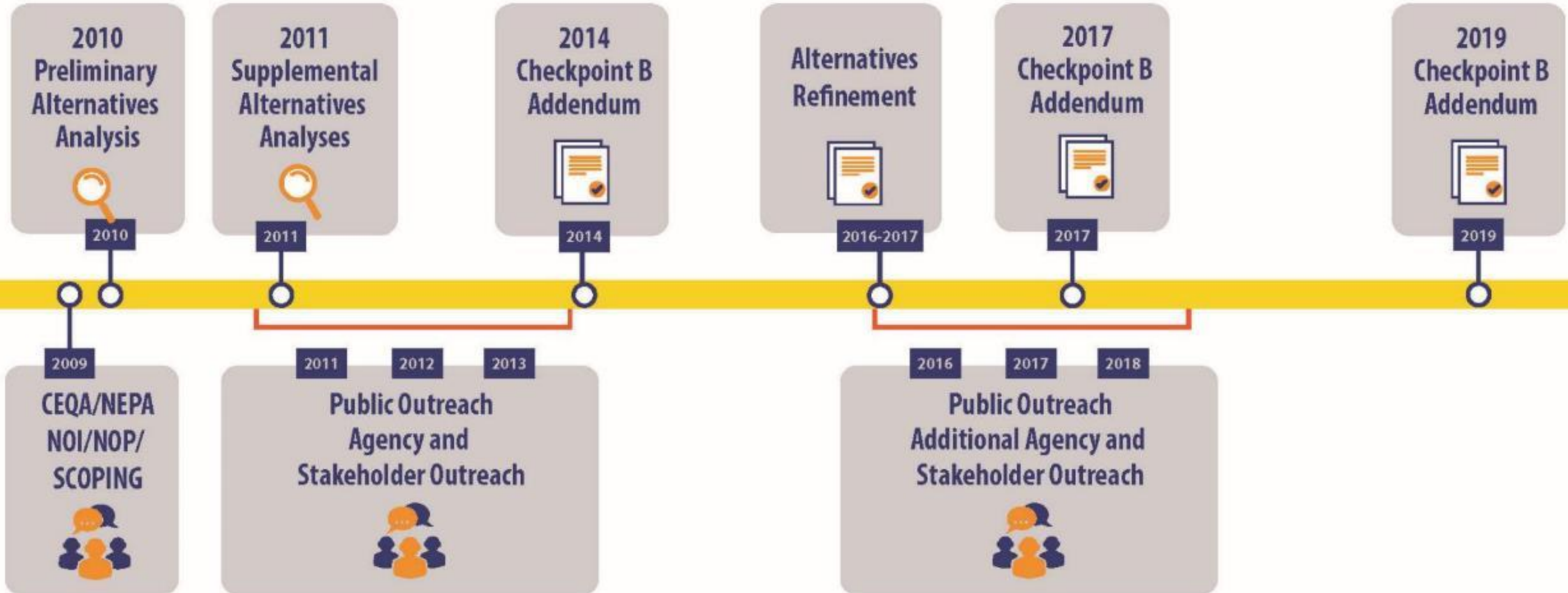


# SAN JOSE TO MERCED PROJECT SECTION

**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

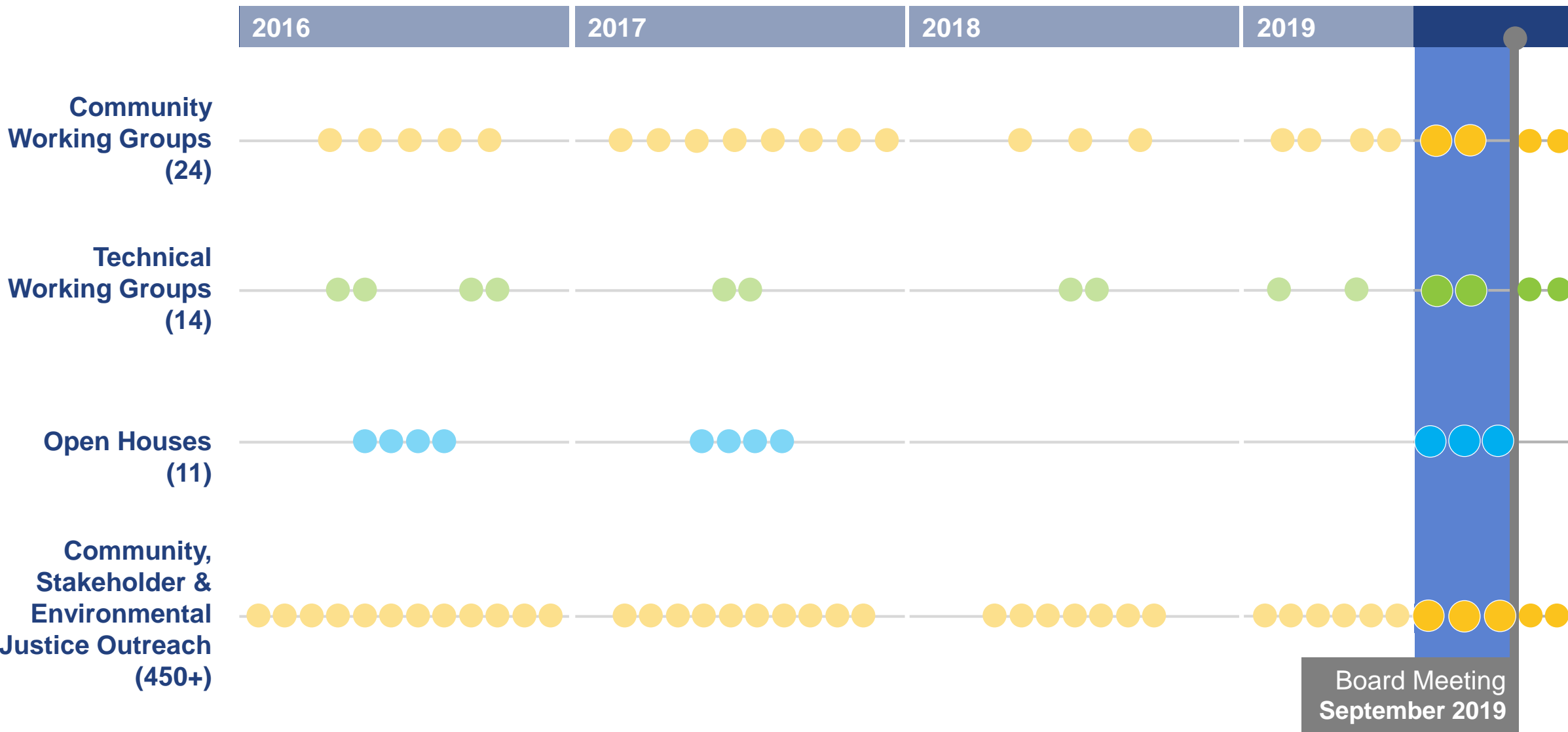
2018 – 2019

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



Board Meeting  
September 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





# 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



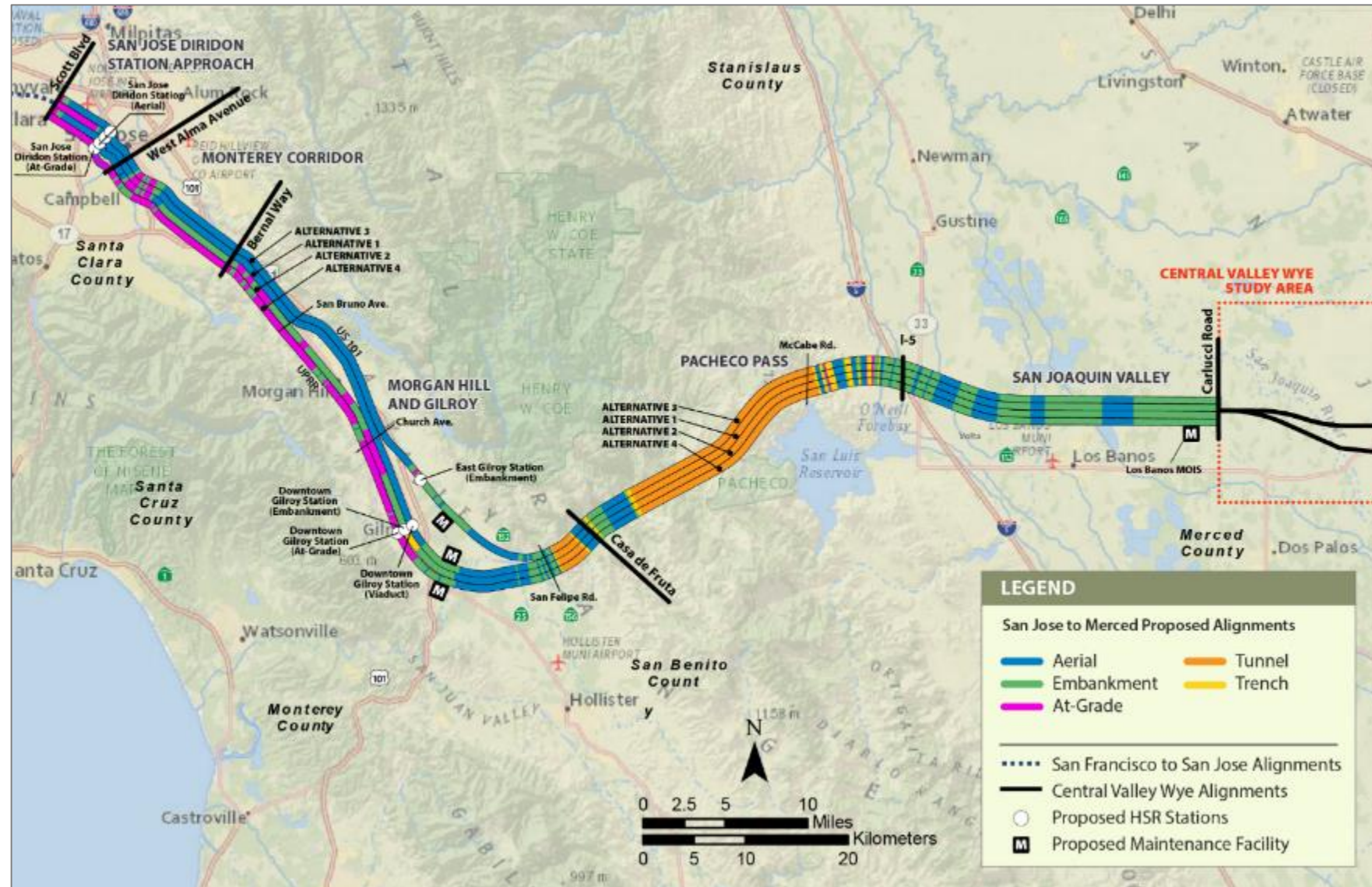
# **SAN JOSE TO MERCED PROJECT SECTION**

## **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

**SUMMER 2019**  
**CALIFORNIA High-Speed Rail Authority**  
**SAN JOSE TO MERCED PROJECT SECTION STATE'S PREFERRED ALTERNATIVE**

**OVERVIEW**  
High-speed rail offers an unprecedented opportunity to modernize California's transportation system and tie together the state's economies. The San Jose to Merced Project Section will be the crucial connection between the Bay Area and the Central Valley. This fact sheet discusses the staff recommendation for the State's Preferred Alternative to be considered by the California High-Speed Rail Authority (Authority) Board of Directors.

**WHAT IS A PREFERRED ALTERNATIVE?**  
Since 2008, numerous alternatives have been considered for the high-speed rail alignment traveling within and outside of the Bay Area. Ultimately, four alternatives are being analyzed for the Draft Environmental Impact Report/Statement (EIR/EIS). The alternative determined to best balance tradeoffs between environmental, community, and performance, operations, and cost factors will be identified as the State's Preferred Alternative. Planning, design, and analysis of the four alternatives, collaboration with landowners and agencies, and input from the public and stakeholders has led Authority staff to recommend Alternative 4 as the State's Preferred Alternative. Authority staff is seeking feedback on this recommendation before it is presented to the Authority Board of Directors in September 2019.

**WHAT IS THE PUBLIC'S ROLE IN DEVELOPING AND RECOMMENDING ALTERNATIVES?**  
The Authority coordinates closely with individuals, local governments, tribes, public agencies, and organizations to gather local knowledge and input on project alternatives. Over the last three years, the Authority participated in nearly 500 meetings with stakeholders and members of the public. Now the Authority is seeking public feedback on the staff-recommended State's Preferred Alternative. A summary of feedback provided at community meetings and open houses – as well as via telephone or written correspondence – will be presented to the Authority Board of Directors in September 2019.

**HOW TO PROVIDE FEEDBACK**  
By email: [san\\_jose\\_merced@hsrc.ca.gov](mailto:san_jose_merced@hsrc.ca.gov)  
By phone: 800-455-8166  
By mail: Northern California Regional Office, California High-Speed Rail Authority, 100 Paseo De San Antonio, Suite 300, San Jose, CA 95113  
In person: Attend a Community Open House  
• August 5 in Gilroy  
• August 15 in San Jose  
• August 21 in Los Banos  
• September 17 in San Jose  
Attend the Board Meeting

**Alternative 4**  
Alternative 4 was developed to address feedback from stakeholders on Alternatives 1, 2, and 3: minimize property displacements, limit natural resource impacts, retain local community development patterns, improve the efficiency and safety of the existing railroad corridor, and set the stage for extending regional electrified passenger rail service to Southern Santa Clara County. Alternative 4 is different from the others because it would enable both Caltrain and High-Speed Rail to operate on the same alignment (this is called a blended system). The alongside one conventional freight track predominantly within the existing Caltrain and UPRR rights-of-way. The maximum train speed would be 110 mph where operations would be blended between San Jose and Gilroy. South and east of Gilroy, speeds would increase up to 220 mph in the dedicated High-Speed Rail portion of the alignment. Alternative 4 will require the successful completion of negotiations with UPRR for the use of their rail corridor between San Jose and Gilroy.

## ALTERNATIVES EVALUATION FOR SAN JOSE TO MERCED PROJECT SECTION

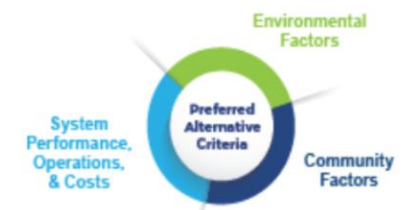
CALIFORNIA High-Speed Rail Authority

### 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:



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	<b>87</b>	89
Operational Speed (mph) — San Jose to Gilroy	Up to 175	<b>Up to 195</b>	Up to 175	Up to 110
Operational Speed (mph) — Gilroy to Central Valley Wye	Up to 220			
Proximity to existing transit corridors (miles) <sup>2</sup>	43	<b>50</b>	35	<b>50</b>
Travel time — San Jose and Gilroy <sup>3</sup> (minutes)	17-18	17-18	<b>16-17</b>	23
Proposition 1A service travel time compliance	✓	✓	✓	✓
Estimated capital costs <sup>4</sup> (2017\$ billions)	\$20.5	\$17.7	\$20.8	<b>\$13.6</b>
Estimated annual operations and maintenance costs <sup>5</sup> (2017\$ millions)	\$162			

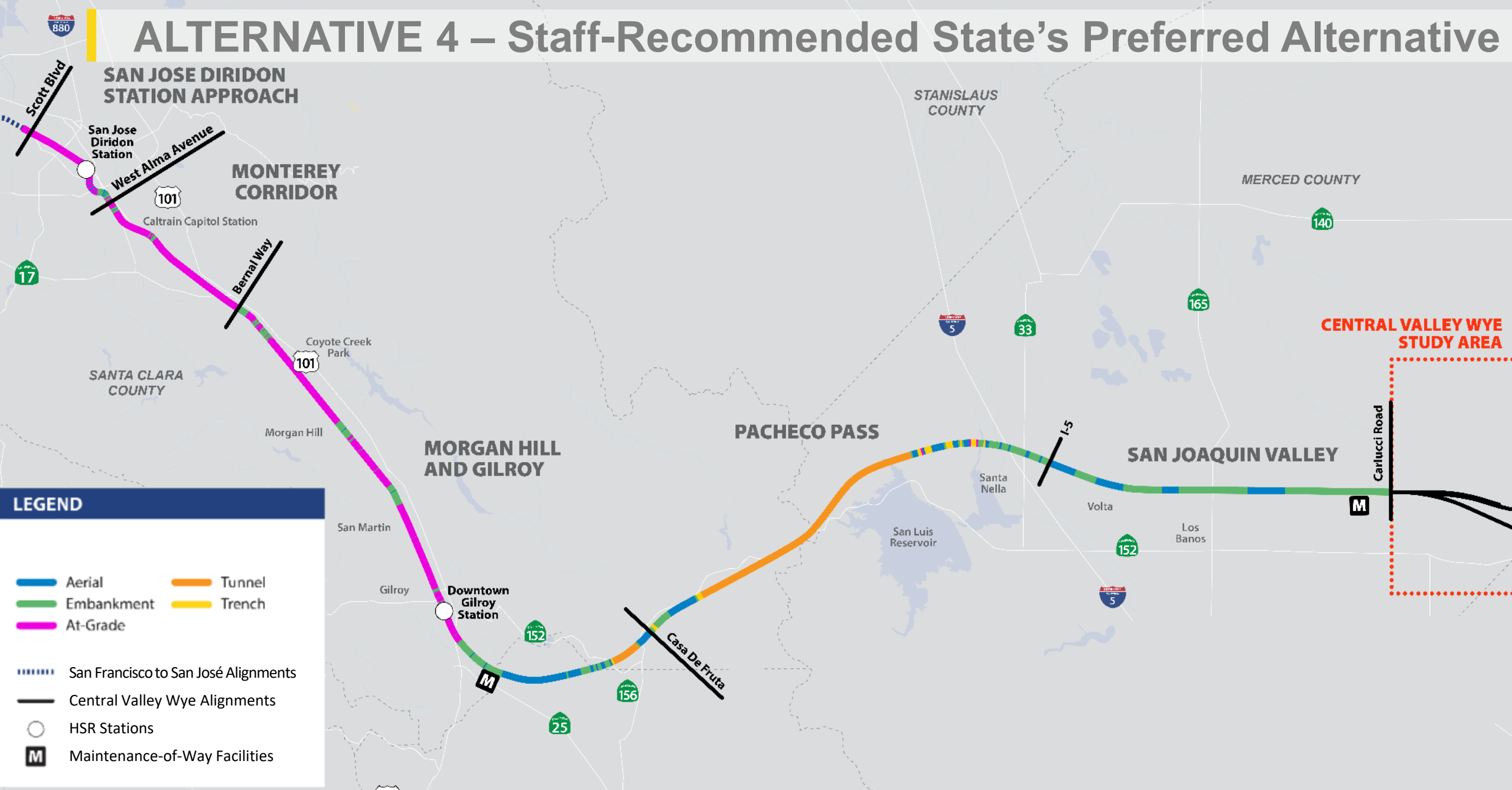


# SAN JOSE SUBSECTION – KEY DIFFERENTIATORS

- 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



# ALTERNATIVE 4 – Staff-Recommended State’s Preferred Alternative



# SUMMARY OF ALTERNATIVES EVALUATION – SYSTEM PERFORMANCE, OPERATIONS, & 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	<i>No difference</i>			
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	<i>No difference</i>			

● Best-performing alternative

# SUMMARY OF ALTERNATIVES EVALUATION – 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

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

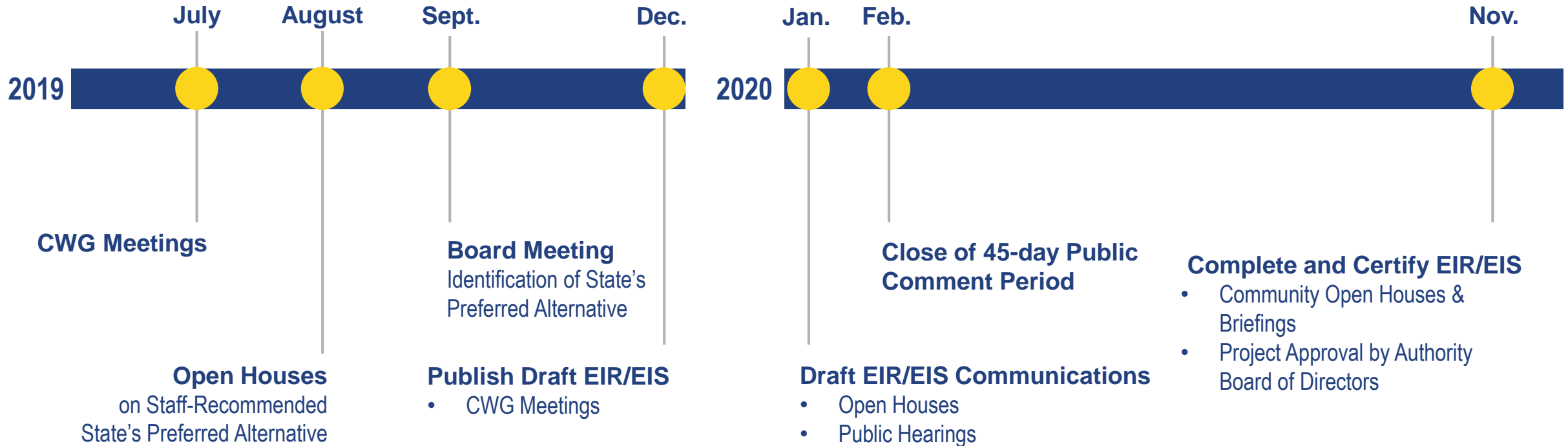




# NEXT STEPS



# NEXT STEPS



# 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](mailto: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.**

# THANK YOU



## Headquarters

California High-Speed Rail Authority

770 L Street, Suite 620

Sacramento, CA 95814

[www.hsr.ca.gov](http://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



Alternatives 1, 2, 3

Alternatives 1, 2, 3

Potential Parking Deck for Displaced Parking

Minimum Modifications at Diridon Station to Accommodate High-Speed Rail

Pedestrian Overcrossing

PARK AVE

Shifting Tracks to East for Curve Straightening Requires ROW

Shifting Tracks to East Within ROW

Alternative 4

Leave Existing Rail Bridge Over Los Gatos Creek

Alternative 4

THE ALAMEDA

SAN FERNANDO ST

SAN CARLOS ST

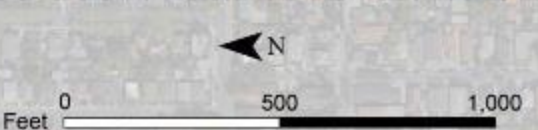
## LEGEND

San Jose to Merced Alternatives

Station and Features

Additional ROW

All design elements are shown for Alternative 4 only





# GARDNER NEIGHBORHOOD



# CAPITOL CALTRAIN STATION

Alternatives  
1, 2, 3

Alternative 4

Maintain Existing Park and Ride Lot

Curve Straightening and  
Relocated Caltrain Station  
Requires Additional ROW

ATC Site


Pedestrian Overcrossing


Relocated Capitol Caltrain Station

Pedestrian Overcrossing

## LEGEND

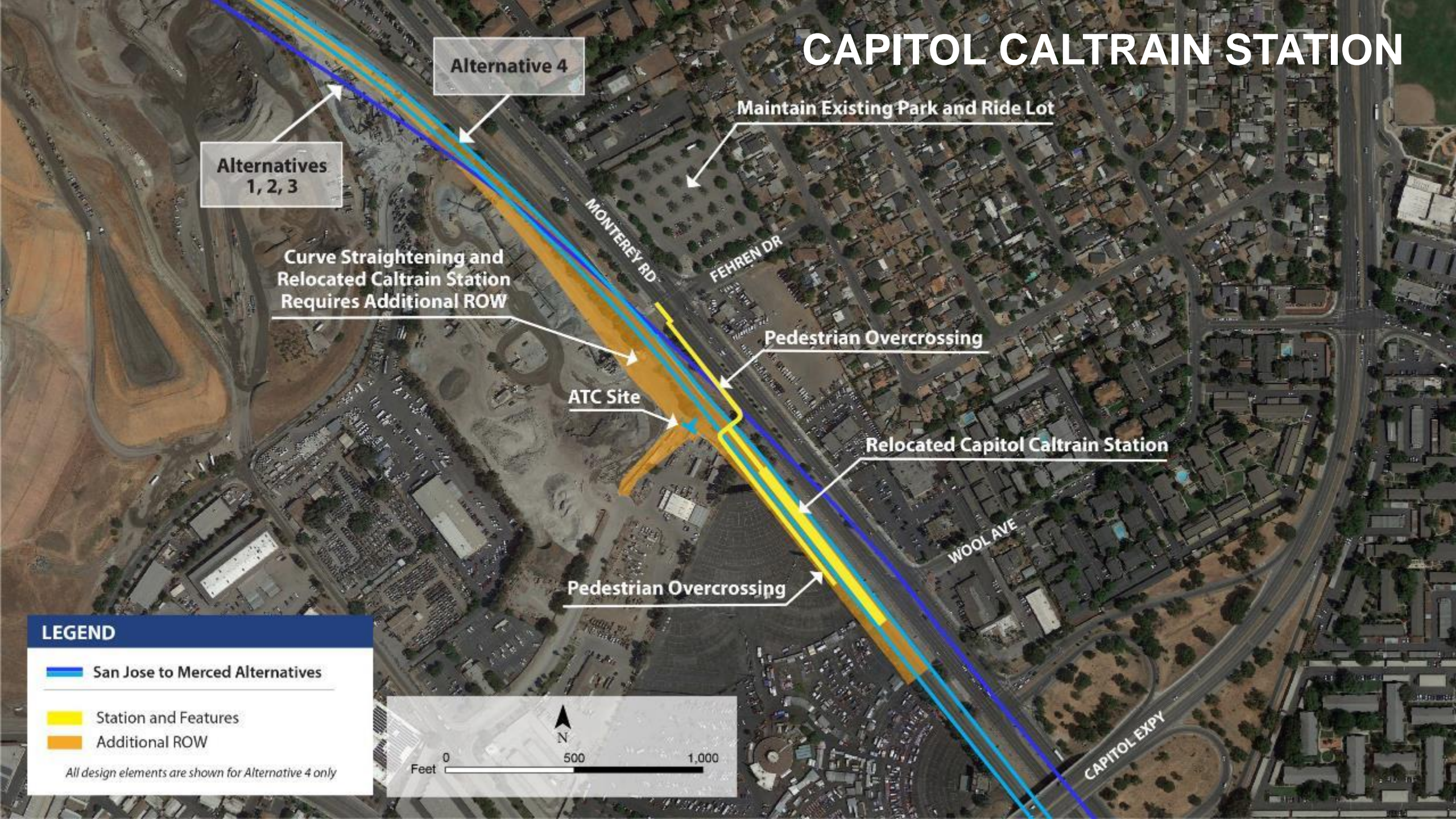
 San Jose to Merced Alternatives

 Station and Features

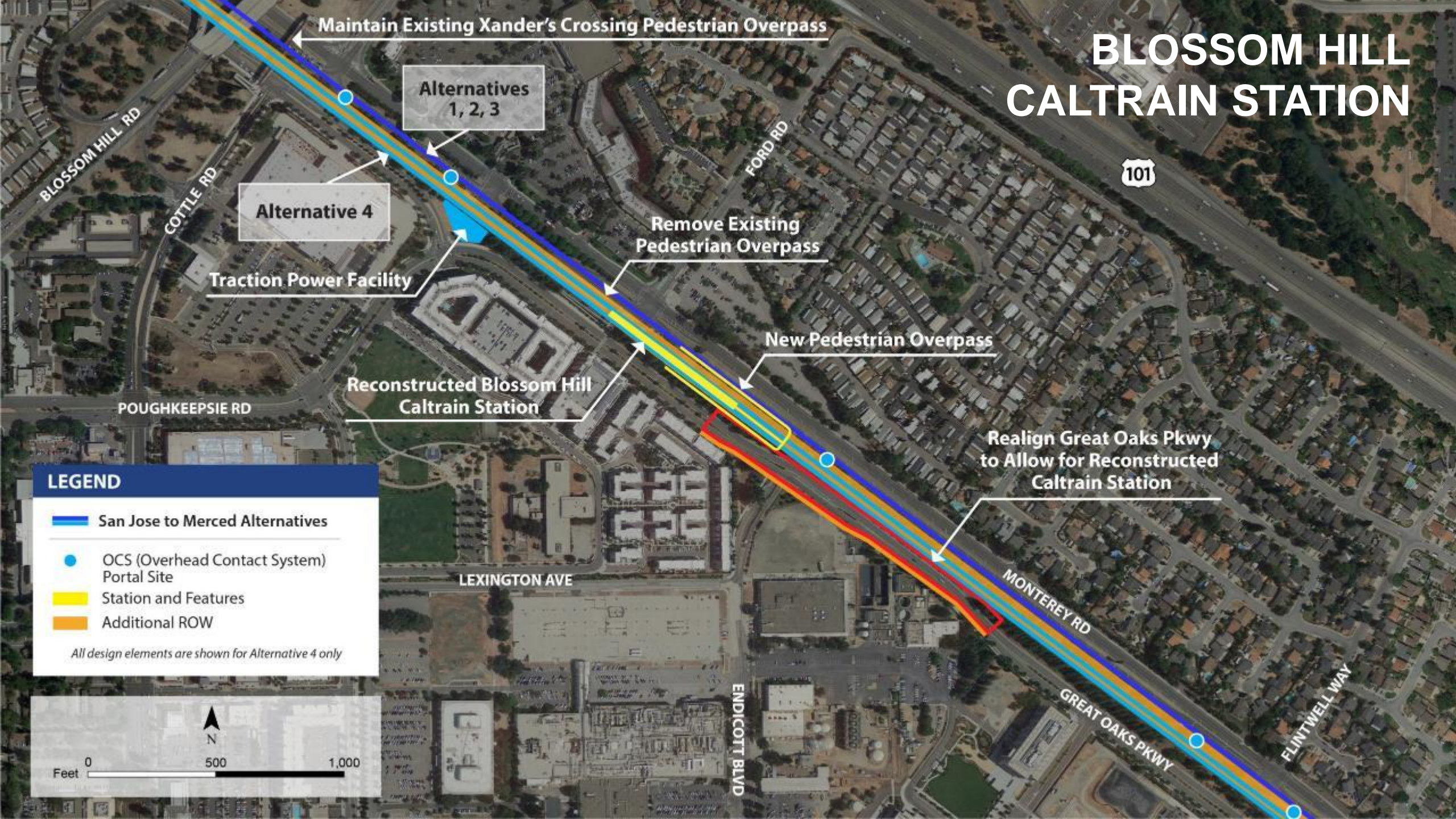
 Additional ROW

*All design elements are shown for Alternative 4 only*

0 500 1,000  
Feet

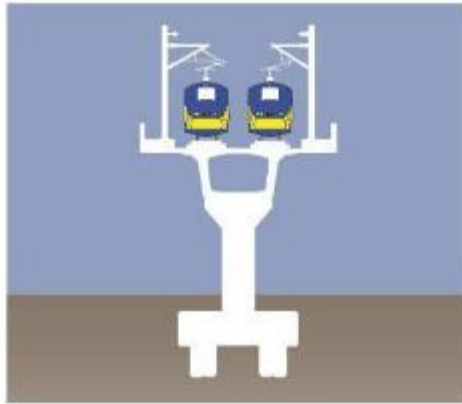


# BLOSSOM HILL CALTRAIN STATION



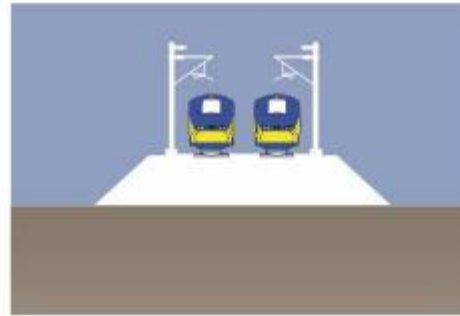
# CROSS SECTIONS IN SAN JOSE

## Viaduct



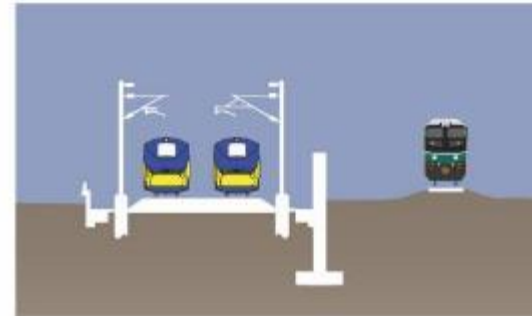
Two high-speed rail tracks on an aerial structure

## Embankment



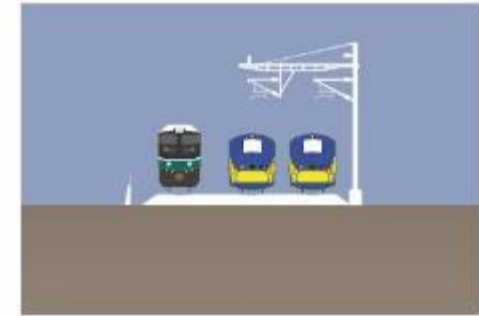
Two high-speed rail tracks on an earthen embankment

## Dedicated At-Grade



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

## Blended At-Grade

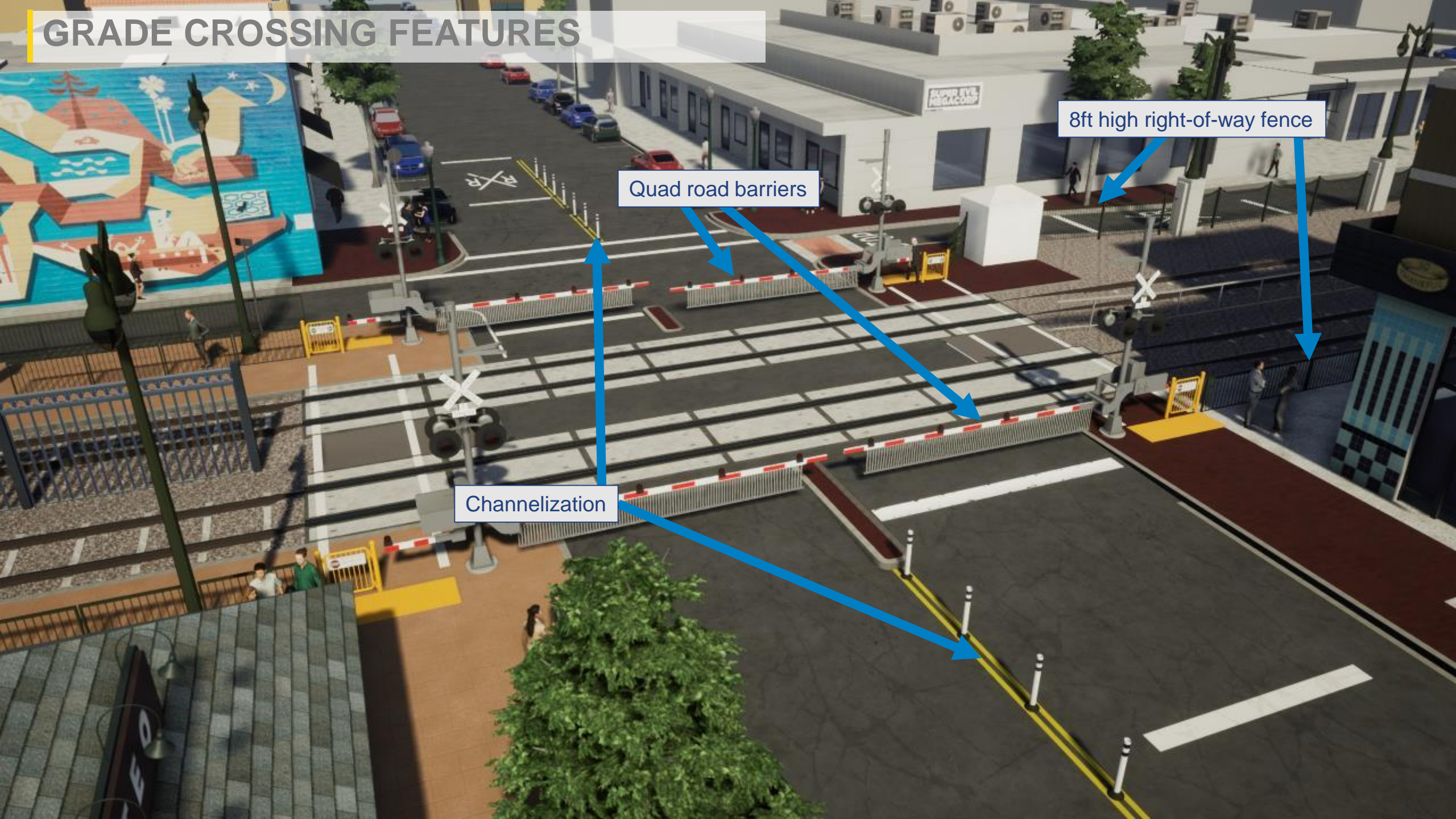


Two electrified, blended passenger tracks (with Caltrain) and one non-electrified freight track at ground level

Alternatives 1, 2 & 3

Alternative 4

# GRADE CROSSING FEATURES

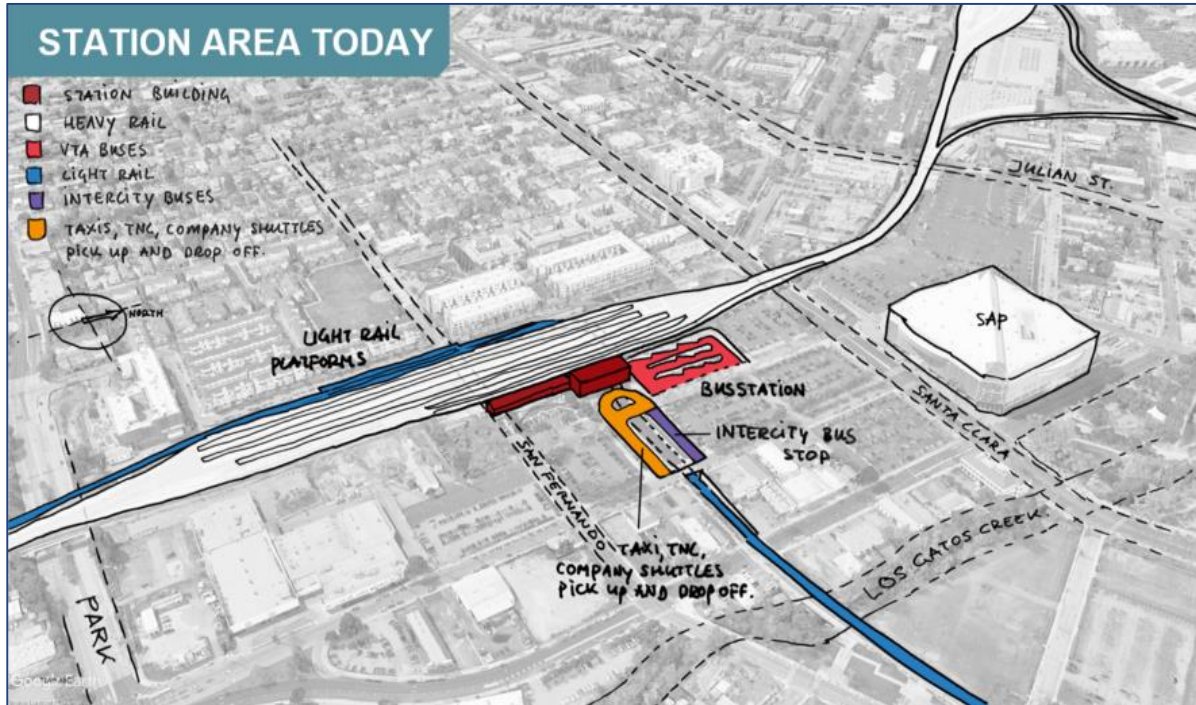


Quad road barriers

8ft high right-of-way fence

Channelization

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

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>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	<b>68</b>
Commercial displacements (# of businesses)	217	348	157	<b>66</b>
Agricultural displacements (# structural improvements)	49	53	49	<b>40</b>
Community or public facilities displacement (# of units)	7	8	5	<b>1</b>
Commercial displacements (square footage)	<b>411,000</b>	1,800,000	994,000	448,000
Agricultural structure displacements (square footage)	<b>407,000</b>	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	<b>1,033</b>



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	<ul style="list-style-type: none"> <li>• Viaduct</li> <li>• Elevated Stations</li> </ul>	<ul style="list-style-type: none"> <li>• Embankment and Viaduct</li> <li>• Elevated Stations</li> <li>• Roadway Grade Separations</li> </ul>	<ul style="list-style-type: none"> <li>• Viaduct</li> <li>• Elevated Stations</li> <li>• Alignment in Rural Area (East Gilroy)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>At-Grade Alignment</b></li> <li>• <b>Existing Railroad Right-of-Way</b></li> </ul>



Alternatives 1 and 3: Viaduct



Alternative 4: At-Grade

# LAND USE AND DEVELOPMENT



**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	<b>Yes</b>	<b>Yes</b>	No	<b>Yes</b>



*Downtown  
Gilroy Station*

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

Planned Land Use (Current Zoning)



*East Gilroy  
Station*

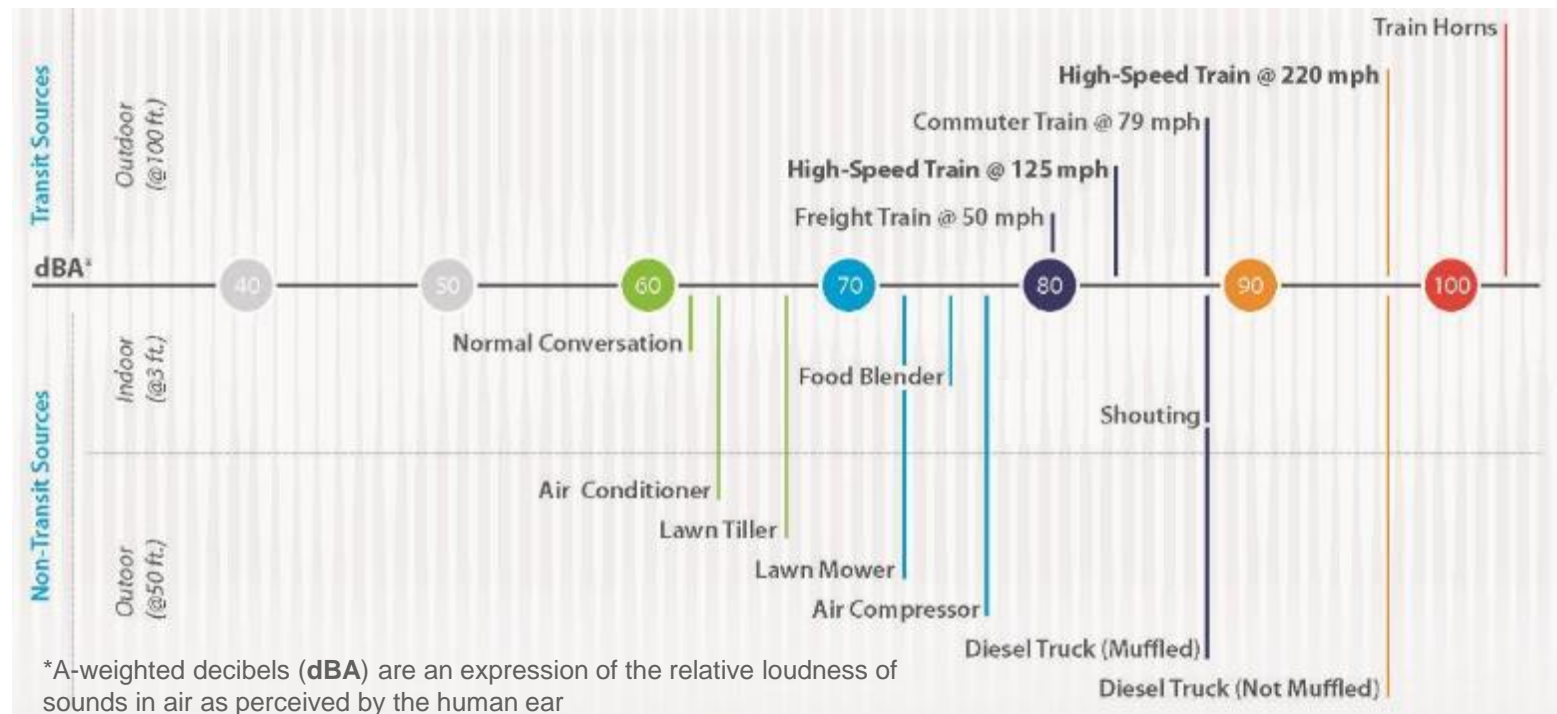
# NOISE



**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	<b>173</b>	275
Severe noise impacts with noise barrier mitigation and if local municipalities implement quiet zones (# of sensitive receptors)	223	194	<b>173</b>	179

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





**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	<b>NB-0/5</b> <b>SB-1/8</b>
Permanent road closures — San Jose to Gilroy	10	19	<b>8</b>	<b>8</b>
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	<b>NB 0/5  SB 1/8</b>
Areas of potential delay to emergency vehicle response times	<b>Monterey Corridor due to Monterey Road narrowing</b>		Monterey Corridor, Morgan Hill, Gilroy due to gate-down time	
Types of mitigation needed to minimize emergency vehicle delays	<b>Vehicle detection equipment</b>		Vehicle detection equipment, additional emergency equipment for existing fire stations, new fire stations, and potentially additional ambulance services	







**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 <sup>1</sup>	50%	<b>N/A<sup>2</sup></b>	67%	<b>N/A<sup>2</sup></b>
EJ proportion of total residential displacements	60%	66%	<b>50%</b>	<b>50%</b>
EJ proportion of total business displacements	87%	92%	<b>82%</b>	83%
Amount of mitigation required to address effects on emergency vehicle response times (lower number is less mitigation needed)	<b>1</b>	3	<b>1</b>	4
EJ proportion of total moderate and severe noise impacts <sup>3</sup>	49%	65%	<b>45%</b>	76%

<sup>1</sup>As indicated by impacts on visual landscape units.

<sup>2</sup>These alternatives have no significant and unavoidable impacts on visual landscape units.

<sup>3</sup>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	<b>101</b>
Permanent impacts on habitat for listed plant species (non-overlapping acres)	1,171	1,178	1,183	<b>1,146</b>
Permanent impacts on habitat for listed wildlife species with the most impacts overall (California tiger salamander, acres)	2,273	2,329	2,470	<b>2,146</b>
Wildlife corridor impacts	<b>Avoids east Gilroy; fewer Soap Lake floodplain impacts</b>	<b>Avoids east Gilroy; fewer Soap Lake floodplain impacts</b>	Impacts east Gilroy; more Soap Lake floodplain impacts	<b>Avoids east Gilroy; fewer Soap Lake floodplain impacts</b>
Permanent impacts on conservation areas (acres)	<b>427</b>	432	481	<b>427</b>

# 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	<b>3</b>
(acres)	4.8	7.4	5.0	<b>1.4</b>



# 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	<b>5</b>
Number of permanent significant impacts on CEQA-only historic resources (# of resources)	2	4	<b>1</b>	<b>1</b>



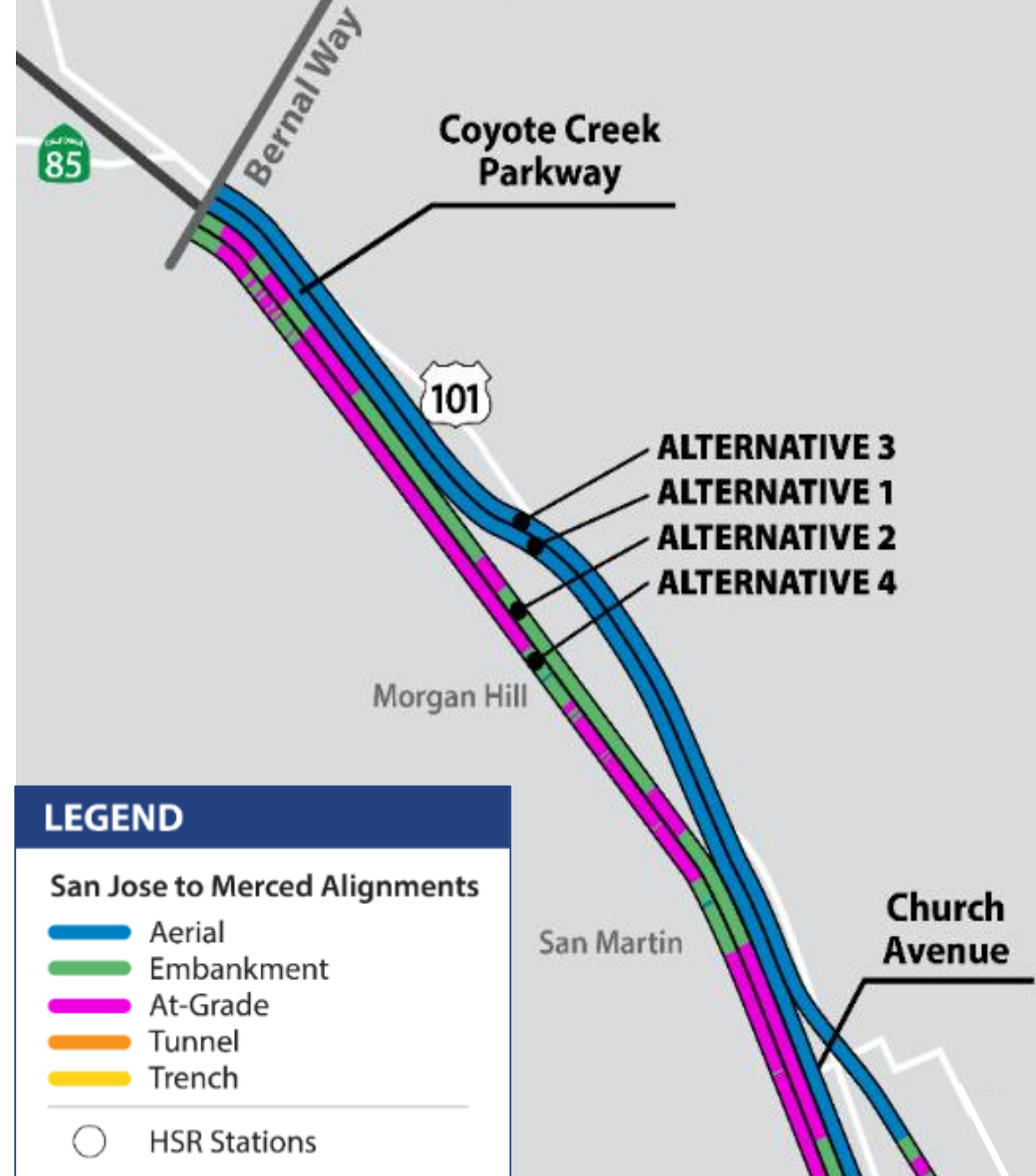
# APPENDIX C – SUPPLEMENTAL

## SAN JOSE TO MERCED PROJECT SECTION



# MORGAN HILL TO SAN MARTIN

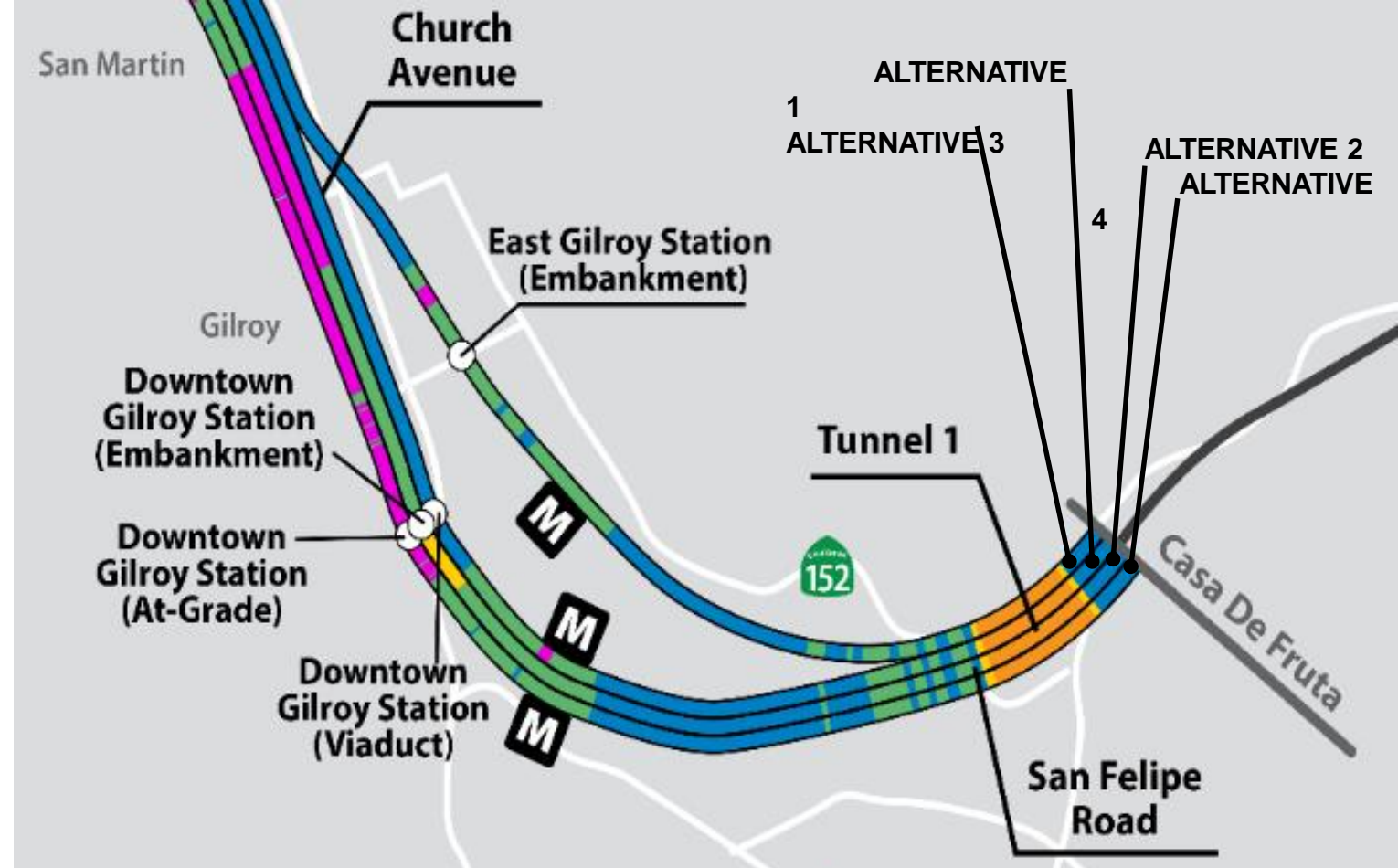
- **Alternatives 1 and 3**
  - » Viaduct
  - » Bypass downtown Morgan Hill
- **Alternative 2**
  - » Grade-separated embankment
  - » Through downtown Morgan Hill
- **Alternative 4**
  - » At-grade
  - » Predominantly in existing UPRR right-of-way



# 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



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

