Local Policy Maker Working Group
Thursday, July 25, 2019
San Carlos, CA
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.
SAN FRANCISCO TO SAN JOSE
PROJECT SECTION

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

**2005 - 2008**
- Programmatic Documents

**2009**
- NOP/NOI Issued for 4-Track System
- Public Scoping
- Technical Working Group Meetings
- Community Open House Meetings
- Stakeholder Engagement

**2010**
- Preliminary Alternatives Analysis Report
- Supplemental Alternatives Analysis Report
- Stakeholder Engagement

**2012**
- 2012 Business Plan Adopted, calling for a Blended System along the Peninsula
- Senate Bill 1029 Passed, Providing Funding for Caltrain Electrification as part of the Blended System
- Nine-Party MOU
- Final Programmatic Documents

**2013**
- New MOU with PCJPB Committing to Blended System

**2016**
- New NOI/NOP Issued for Blended System
- Public Scoping
- Supplement to 2012 Nine-Party MOU

**2018**
- 2018 Business Plan

**2015 - ONGOING**
- Community Open House Meetings
- Environmental Justice Outreach
- Community/Technical Working Group Meetings

REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public
SAN FRANCISCO TO SAN JOSE COMMUNITY OUTREACH
2016 – 2019

Community Working Groups (14)
CSCG/LPMG (82)
Open Houses (11)
Community, Stakeholder & Environmental Justice Outreach (360+)

REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public
## INTERFACING WITH NORTHERN CALIFORNIA AGENCIES

Topics covered in 2018 - 2019

<table>
<thead>
<tr>
<th>Organization</th>
<th>Alignments</th>
<th>Water Management</th>
<th>Transportation/Roads</th>
<th>Engineering/Design</th>
<th>Land Use</th>
<th>Joint Outreach</th>
<th>2018 Business Plan</th>
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**REFINING THE ALTERNATIVES:** Collaboration with Partner Agencies, Stakeholders, and Members of the Public
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

REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public
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 Project Section
  - Alternative A Features
    - East Option Light Maintenance Facility
    - No Additional Passing Tracks
  - Alternative B Features
    - West Option Light Maintenance Facility
    - Additional Passing Tracks

- HSR Stations
- San Jose to Merced Alignments
- Downtown Extension

Light Maintenance Facility
East Option (Alt A)
West Option (Alt B)

No Additional Passing Tracks (Alt A)
Additional Passing Tracks (Alt B)
Relocation of San Carlos Station
SAN FRANCISCO TO SAN JOSE
Common Project Elements – Alternatives A & B

• High-Speed Rail stations¹
  » 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

- Channelization
- Quad road barriers
- 8ft high right-of-way fence
PREFERRED ALTERNATIVE CRITERIA

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

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

Environmental Factors
- Biological and Aquatic Resources

Preferred Alternative Criteria

IDENTIFYING A PREFERRED ALTERNATIVE
ALTERNATIVE A – STAFF-RECOMMENDED STATE’S PREFERRED ALTERNATIVE

IDENTIFYING A PREFERRED ALTERNATIVE
**Bold text** in tables indicates best-performing alternative(s).

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT A</th>
<th>ALT B</th>
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<tbody>
<tr>
<td>Alignment length (miles)</td>
<td>42.9</td>
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<tr>
<td>Maximum Operating Speed (mph)</td>
<td>Up to 110</td>
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<tr>
<td>HSR Peak Hour Average Representative Travel Time San Francisco to San Jose (minutes)</td>
<td>47</td>
<td>45</td>
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<tr>
<td>Proposition 1A Service Travel Time Compliance</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Estimated Capital Costs (2017$)</td>
<td>$2.6 billion</td>
<td>$3.5 billion</td>
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<tr>
<td>Estimated Annual Operations and Maintenance Costs (2017$)</td>
<td>$78 million</td>
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<tr>
<td>Caltrain Peak Hour Average Representative Travel Time (minutes)</td>
<td>63</td>
<td>65</td>
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1. SYSTEM PERFORMANCE, OPERATIONS AND COSTS

**IDENTIFYING A PREFERRED ALTERNATIVE**
**DISPLACEMENTS**

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

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<tr>
<th>CRITERIA</th>
<th>ALT A</th>
<th>ALT B</th>
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<tbody>
<tr>
<td>Residential displacements (number of units)</td>
<td>10</td>
<td>19</td>
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<tr>
<td>Commercial and industrial displacements</td>
<td></td>
<td></td>
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<tr>
<td>(# of businesses)</td>
<td>29</td>
<td>108</td>
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<tr>
<td>(square feet)</td>
<td>211,261</td>
<td>466,084</td>
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<tr>
<td>Community and public facilities displacement</td>
<td>2</td>
<td>4</td>
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<tr>
<td>(number of units)</td>
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</table>

Example: overlay of footprint in urban area

**IDENTIFYING A PREFERRED ALTERNATIVE**
AESTHETICS AND VISUAL QUALITY

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

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<thead>
<tr>
<th>CRITERION</th>
<th>ALT A</th>
<th>ALT B</th>
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<tbody>
<tr>
<td>Number of key viewpoints with decreased visual quality</td>
<td>3</td>
<td>5</td>
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</table>

San Carlos Station

El Camino Real at 39th Avenue, San Mateo
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

IDENTIFYING A PREFERRED ALTERNATIVE

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

Alternative B
Impacts 90 acres planned commercial and 21 acres planned mixed use (with residential permitted)
**TRANSPORTATION**

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

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

**IDENTIFYING A PREFERRED ALTERNATIVE**
**EMERGENCY VEHICLE ACCESS/RESPONSE TIME**

**Bold text** in tables indicates best-performing alternative.

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>ALT A</th>
<th>ALT B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary increases in emergency vehicle access/response time in south</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>San Mateo, Belmont, San Carlos, and northern Redwood City due to short-</td>
<td></td>
<td></td>
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<tr>
<td>term road closures and construction traffic associated with passing track</td>
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<tr>
<td>construction</td>
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</table>
**ENVIRONMENTAL JUSTICE**

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<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT A</th>
<th>ALT B</th>
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<tbody>
<tr>
<td>Construction-related disruption to Caltrain Service</td>
<td>Less than Alt. B due to no passing track construction</td>
<td>More than Alt. A due to passing track construction</td>
</tr>
<tr>
<td>Permanent Effect on Planned Mixed Use Development (residential uses allowed) in Brisbane (acres)</td>
<td>2</td>
<td>21</td>
</tr>
</tbody>
</table>

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**IDENTIFYING A PREFERRED ALTERNATIVE**

- EJ Populations + Impacts
- EJ Populations
- Adverse & Beneficial Impacts
**BIOLOGICAL AND AQUATIC RESOURCES**

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<table>
<thead>
<tr>
<th>CRITERIA</th>
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<th>ALT B</th>
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<tbody>
<tr>
<td>Total permanent impacts on wetlands and other waters of the U.S. (acres)</td>
<td>8.8</td>
<td>12.8</td>
</tr>
<tr>
<td>Permanent Impacts on endangered callippe silverspot butterfly habitat (acres)</td>
<td>0.0</td>
<td>8.0</td>
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</tbody>
</table>
### SUMMARY OF ALTERNATIVES EVALUATION – SYSTEM PERFORMANCE, OPERATIONS, AND COST FACTORS

<table>
<thead>
<tr>
<th>CRITERIA</th>
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<tbody>
<tr>
<td>Alignment length (miles)</td>
<td>No Difference</td>
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<tr>
<td>Maximum Operating Speed (mph)</td>
<td>No Difference</td>
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<tr>
<td>HSR Peak Hour Average Representative Travel Time San Francisco to San Jose (minutes)</td>
<td></td>
<td>![Best-performing alternative]</td>
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<tr>
<td>Proposition 1A Service Travel Time Compliance</td>
<td>![Best-performing alternative]</td>
<td>![Best-performing alternative]</td>
</tr>
<tr>
<td>Estimated Capital Costs (2017$)</td>
<td>![Best-performing alternative]</td>
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<tr>
<td>Estimated Annual Operations and Maintenance Costs (2017$)</td>
<td>No Difference</td>
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<tr>
<td>Caltrain Peak Hour Average Representative Travel Time (minutes)</td>
<td>![Best-performing alternative]</td>
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</table>

○ = Best-performing alternative
## SUMMARY OF ALTERNATIVES EVALUATION – COMMUNITY FACTORS

<table>
<thead>
<tr>
<th>CRITERIA</th>
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<tbody>
<tr>
<td>Residential displacements</td>
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<td>Commercial and industrial displacements</td>
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<tr>
<td>Temporary increases emergency response time in south San Mateo, Belmont, San Carlos, and northern Redwood City due to short-term road closures</td>
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<tr>
<td>Construction-related disruption to Caltrain Service</td>
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<tr>
<td>Permanent Effect on Planned Mixed Use Development (residential uses allowed) in Brisbane</td>
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⬤ = Best-performing alternative (fewest/least community impacts)

IDENTIFYING A PREFERRED ALTERNATIVE
### SUMMARY OF ALTERNATIVES EVALUATION – ENVIRONMENTAL FACTORS

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○ = Best-performing alternative (fewest environmental impacts)
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 Ravenswood and Lawrence

Options & Considerations

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

ALTERNATIVE A – STAFF-RECOMMENDED STATE’S PREFERRED ALTERNATIVE

LEGEND
San Francisco to San Jose Alignments
- Alternative A

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

Note: FRA has not yet concurred with the Preferred Alternative
REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public
REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public

ALTERNATIVES DEVELOPMENT PROCESS

2010 Preliminary Alternatives Analysis

2011 Supplemental Alternatives Analyses

2014 Checkpoint B Addendum

Alternatives Refinement

2017 Checkpoint B Addendum

2019 Checkpoint B Addendum

2009 CEQA/NEPA NOI/NOP/SCOPING

Public Outreach
Agency and Stakeholder Outreach

Public Outreach
Additional Agency and Stakeholder Outreach
SAN JOSE TO MERCED COMMUNITY OUTREACH
2016 – 2019

Community Working Groups (24)

Technical Working Groups (14)

Open Houses (11)

Community, Stakeholder & Environmental Justice Outreach (450+)

REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public
## INTERFACING WITH NORTHERN CALIFORNIA AGENCIES

### 2018 – 2019

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<th>ALIGNMENTS</th>
<th>WATER MANAGEMENT</th>
<th>WILDLIFE CROSSINGS</th>
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<th>ENGINEERING/DESIGN</th>
<th>LAND USE</th>
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<td>Santa Clara County Roads &amp; Airports</td>
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</tr>
<tr>
<td>The Nature Conservancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

REFINING THE ALTERNATIVES: Collaboration with Partner Agencies, Stakeholders, and Members of the Public
SAN JOSE TO MERCED PROJECT SECTION

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

**SAN JOSE TO MERCED RANGE OF ALTERNATIVES**
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

IDENTIFYING A PREFERRED ALTERNATIVE
PREFERRED ALTERNATIVE CRITERIA

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

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

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

Identifying a Preferred Alternative
ALTERNATIVE 4 – Staff-Recommended State’s Preferred Alternative

IDENTIFYING A PREFERRED ALTERNATIVE
**SYSTEM PERFORMANCE, OPERATIONS, AND COSTS**

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

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

---

1Times 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.

2Conceptual 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.

3Based on level of design sufficient to analyze potential environmental impacts.
### DISPLACEMENTS

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

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

Example: overlay of footprint in rural area

Example: overlay of footprint in urban area

**IDENTIFYING A PREFERRED ALTERNATIVE**
**AGRICULTURAL LANDS**

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

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent conversion of Important Farmland (i.e. Prime Farmland, Farmland of State Importance, and Farmland of Local Importance (acres))</td>
<td>1,036</td>
<td>1,181</td>
<td>1,193</td>
<td><strong>1,033</strong></td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Quality Effects</td>
<td>Viaduct</td>
<td>Embankment and Viaduct</td>
<td>Viaduct</td>
<td>At-Grade Alignment</td>
</tr>
<tr>
<td></td>
<td>Elevated Stations</td>
<td>Elevated Stations</td>
<td>Elevated Stations</td>
<td>Existing Railroad Right-of-Way</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roadway Grade Separations</td>
<td>Alignment in Rural Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(East Gilroy)</td>
<td></td>
</tr>
</tbody>
</table>

**Alternatives 1 and 3: Viaduct**

**Alternative 4: At-Grade**

---

**IDENTIFYING A PREFERRED ALTERNATIVE**
**LAND USE AND DEVELOPMENT**

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

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistency with City of Gilroy General Plan policy to encourage transit-oriented development (TOD) in downtown</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**IDENTIFYING A PREFERRED ALTERNATIVE**

Planned Land Use (Current Zoning)

- **Downtown Gilroy Station**
- **East Gilroy Station**
### NOISE

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

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe noise impacts with noise barrier mitigation (# of sensitive receptors)</td>
<td>231</td>
<td>194</td>
<td>173</td>
<td>275</td>
</tr>
<tr>
<td>Severe noise impacts with noise barrier mitigation and if local municipalities implement quiet zones (# of sensitive receptors)</td>
<td>223</td>
<td>194</td>
<td>173</td>
<td>179</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent road closures — San Jose to Gilroy</td>
<td>10</td>
<td>19</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Permanent road closures — Gilroy to Carlucci Rd</td>
<td></td>
<td></td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

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).

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

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

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

\(^1\)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).

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

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

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent use of 4(f)/6(f) park resources (#)</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>(acres)</td>
<td>4.8</td>
<td>7.4</td>
<td>5.0</td>
<td>1.4</td>
</tr>
</tbody>
</table>

**Upper Unit at Cottonwood Creek Wildlife Area (CADFW)**

**Coyote Creek Parkway (Santa Clara County Parks)**

**IDENTIFYING A PREFERRED ALTERNATIVE**
### BUILT ENVIRONMENT HISTORIC RESOURCES

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

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of permanent adverse effects on NRHP-listed/eligible resources</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>(# of resources)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of permanent significant impacts on CEQA-only historic resources</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(# of resources)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

**IDENTIFYING A PREFERRED ALTERNATIVE**
## SUMMARY OF ALTERNATIVES EVALUATION – SYSTEM PERFORMANCE, OPERATIONS, & COSTS

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alignment length</td>
<td></td>
<td></td>
<td></td>
<td>∙</td>
</tr>
<tr>
<td>Operational Speed — San Jose to Gilroy</td>
<td></td>
<td></td>
<td></td>
<td>∙</td>
</tr>
<tr>
<td>Operational Speed — Gilroy to Central Valley Wye</td>
<td>No difference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity to existing transit corridors</td>
<td></td>
<td>∙</td>
<td></td>
<td>∙</td>
</tr>
<tr>
<td>Travel time — San Jose and Gilroy</td>
<td></td>
<td></td>
<td>∙</td>
<td></td>
</tr>
<tr>
<td>Proposition 1A service travel time compliance</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Estimated capital costs</td>
<td></td>
<td></td>
<td></td>
<td>∙</td>
</tr>
<tr>
<td>Estimated annual operations and maintenance costs</td>
<td>No difference</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Best-performing alternative
<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential displacements</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Commercial displacements (#)</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Agricultural displacements (#)</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Community or public facilities displacements</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Commercial displacements (square footage)</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural structure displacements (square footage)</td>
<td></td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent conversion of important farmland</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Visual quality effects</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Consistency with Gilroy General Plan</td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Noise impacts with noise barrier mitigation</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in 2040 peak travel time on Monterey Road (NB — AM/PM, SB — AM/PM)</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Permanent road closures</td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Amount of mitigation needed to minimize emergency vehicle delays</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>EJ proportion of total impacts on local views</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>EJ proportion of total residential displacements</td>
<td></td>
<td></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>EJ proportion of total business displacements</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Amount of mitigation required to address effects on emergency vehicle response times (EJ)</td>
<td></td>
<td></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>EJ proportion of total noise impacts</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
</tbody>
</table>
## SUMMARY OF ALTERNATIVES EVALUATION – ENVIRONMENTAL FACTORS

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALT 1</th>
<th>ALT 2</th>
<th>ALT 3</th>
<th>ALT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waters and wetlands</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Habitat for listed plant species</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Habitat for listed wildlife species (California tiger salamander)</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Wildlife corridor impacts</td>
<td>●</td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Conservation areas</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Permanent use of 4(f)/6(f) park resources</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Permanent adverse effects on NRHP-listed/eligible resources</td>
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<td>Permanent significant impacts on CEQA-only historic resources</td>
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● 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 Milbrae associated with HSR station plus use of existing passing tracks at Bayshore and Lawrence

Options & Considerations
- Service approach is currently under consideration
- Opportunity to consider less service in later in Business Plan

Moderate Growth Scenario (8 Caltrain + 4 HSR)

Features
- A majority of stations served by 4 TPH local stop line, but Mid-Peninsula stations are served 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 Atherton, College Park, and San Martin served on an hourly or exception basis)

Options & Considerations
- To minimize passing track requirements, each local pattern can only stop once 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 Milbrae, 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
- SF-Milbrae 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 track 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
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
IDENTIFYING A PREFERRED ALTERNATIVE

ALTERNATIVE 4 – Staff-Recommended State’s Preferred Alternative

San Francisco to San Jose Alignments
Central Valley Wye Alignments
HSR Stations
Maintenance-of-Way Facilities

IDENTIFYING A PREFERRED ALTERNATIVE
NEXT STEPS
STATE’S PREFERRED ALTERNATIVE

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

STEP ONE
Range of Alternatives

STEP TWO
Evaluation of Alternatives

STEP THREE
Authority collects stakeholder feedback on Staff-Recommended State’s Preferred Alternative

Board Identification of the 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

2019
- July: CWG Meetings
- August: Open Houses on Staff-Recommended State’s Preferred Alternative
- September: Board Meeting Identification of State’s Preferred Alternative

2020
- March: Close of 45-day Public Comment Period
- May: Publish Draft EIR/EIS
  - Community Working Group Meetings

2021
- March: Complete and Certify EIR/EIS
NEXT STEPS
SAN JOSE TO MERCED PROJECT SECTION

2019
- CWG Meetings

2020
- Board Meeting: Identification of State’s Preferred Alternative
- Close of 45-day Public Comment Period
- Complete and Certify EIR/EIS

July
- CWG Meetings

August
- Open Houses on Staff-Recommended State’s Preferred Alternative

September
- Publish Draft EIR/EIS
  - Community Working Group Meetings

December
- Board Meeting

February

November
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.
APPENDIX A
SAN FRANCISCO TO SAN JOSE

CHARACTERISTICS
OF ALTERNATIVES
LIGHT MAINTENANCE FACILITY
Alternatives Carried Forward

Brisbane

Alternative A  
East

Alternative B  
West

IDENTIFYING A PREFERRED ALTERNATIVE
PASSING TRACKS EVALUATION TIMELINE

- **Shift to Blended System**
  - Feedback from Alternatives Analysis
  - 2012 Business Plan
  - MTC 9-party MOU
  - SB 1029/SB 557

- **Caltrain Blended Service Study**
  - Five Passing Track Options: North, Short-Middle-4, Long-Middle-4, Middle-3, South
  - Dismissed: North and South due to poor performance

- **Joint HSR/Caltrain Blended System Planning Analysis**
  - Three Passing Track Options: Short-Middle-4, Long-Middle-4, Middle-3, No passing tracks
  - Dismissed: Long Middle-4 and Middle-3 due to community impacts

- **HSR EIR/EIS Evaluation**
  - Alt. A – No additional passing tracks
  - Alt. B – Short-Middle-4 passing tracks

- **Caltrain Business Plan**
  - Evaluation of future need for passing tracks

ALTERNATIVES CONSIDERED
• 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

CHARACTERISTICS OF ALTERNATIVES
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

CHARACTERISTICS OF ALTERNATIVES
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
PACHECO PASS

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