

7 Evaluation of Alternatives

In accordance with NEPA (42 USC Section 4321 et seq.), CEQ regulations implementing NEPA (40 CFR Parts 1501–1508), FRA’s Procedures for Considering Environmental Impacts (64 FR 28545, May 26, 1999) and CEQA, a reasonable range of alternatives were evaluated in this Tier 1/Program EIS/EIR.

The alternatives include the No Build Alternative, which is used as a baseline for comparison purposes and describes the impacts if the Program is not implemented. In addition, the Build Alternative is described with three implementation options, which are described in Chapter 2, Program Alternatives, of this Tier 1/Program EIS/EIR. The alternatives selection process is summarized in Chapter 2, Program Alternatives, of this Tier 1/Program EIS/EIR. The 2016 AA Report included an evaluation of a reasonable range of alternatives for implementation of daily intercity passenger rail service in the Program Corridor.

This chapter describes the preferred alternative and the environmentally superior alternative for the Tier 1/Program EIS/EIR for purposes of NEPA and CEQA, respectively. This chapter also summarizes the potential effects of implementation of the Build Alternative Options based on the analysis of the social, economic, and environmental resources documented in Chapter 3, Environmental Analysis, Consequences, and Mitigation. The potential effects, and differences in effects among Build Alternative Options, are described in each resource section and are summarized below. Station locations have not yet been selected, but general considerations regarding station effects are discussed.

The potential for effects and comparison of effects among the Build Alternative Options are summarized in Table 7-1 and based on an initial survey of resources within the Tier 1/Program EIS/EIR Study Area for each Build Alternative Option.

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Table 7-1. Summary of Resource Effects by the No Build Alternative and Build Alternative Options

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
Land Use and Planning	<p>Land Use Compatibility</p> <p>Under the No Build Alternative, passenger rail service between Coachella and Los Angeles would not be established, and land would not be allocated for rail infrastructure or station facilities. Although this may prevent potential displacements of existing and planned land uses, it would increase the likelihood for displacing land uses adjacent to existing highways, such as I-10, SR 60, and SR 111, which would likely need to be widened to accommodate the projected demands for capacity as population in the region increases. In addition, the No Build Alternative would be inconsistent with federal, state, and regional plans and policies that promote expansion of existing transportation options, as well as multimodal connectivity throughout the region.</p> <p>Agricultural Resources</p> <p>No effects on agricultural resources are anticipated under the No Build Alternative.</p>	<p>Land Use Compatibility</p> <p><i>Construction:</i> Negligible effects within Western Section as no construction activities required. Potentially moderate effects could occur within the Eastern Section due to temporary construction effects and permanent ROW acquisitions beyond the extent of the existing railroad ROW.</p> <p><i>Operation:</i> Negligible effects within Western Section as no additional stations or rail infrastructure are required or land use changes anticipated. Potentially moderate effects could occur within the Eastern Section due to the land use changes associated with the addition of new stations and track infrastructure.</p> <p>Agricultural Resources</p> <p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial effects could occur within the Eastern Section associated with conversion of designated agricultural land to non-agricultural use.</p> <ul style="list-style-type: none"> • Prime farmland: 560.40 acres • Unique farmland: 96.70 acres • Farmland of statewide importance: 22.60 acres • Farmland of local importance: 2,623.90 acres • Grazing land: 1,923.20 acres • Agricultural preserve: 760.82 acres <p><i>Operation:</i> Negligible effects in Western Section and Eastern Section once construction activities are completed.</p>	<p>Land Use Compatibility</p> <p><i>Construction:</i> Negligible effects within Western Section as no construction activities required. Potentially moderate effects could occur within the Eastern Section due to temporary construction effects and permanent ROW acquisitions beyond the extent of the existing railroad ROW.</p> <p><i>Operation:</i> Negligible effects within Western Section as no additional stations or rail infrastructure are required or land use changes anticipated. Potentially moderate effects could occur within the Eastern Section due to the land use changes associated with the addition of new stations and track infrastructure.</p> <p>Agricultural Resources</p> <p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial effects could occur within the Eastern Section associated with conversion of designated agricultural land to non-agricultural use.</p> <ul style="list-style-type: none"> • Prime farmland: 362.50 acres • Unique farmland: 96.70 acres • Farmland of statewide importance: 22.60 acres • Farmland of local importance: 2,549.90 acres • Grazing land: 1,923.20 acres • Agricultural preserve: 760.82 acres <p><i>Operation:</i> Negligible effects in Western Section and Eastern Section once construction activities are completed.</p>	<p>Land Use Compatibility</p> <p><i>Construction:</i> Negligible effects within Western Section as no construction activities required. Potentially moderate effects could occur within the Eastern Section due to temporary construction effects and permanent ROW acquisitions beyond the extent of the existing railroad ROW.</p> <p><i>Operation:</i> Negligible effects within Western Section as no additional stations or rail infrastructure are required or land use changes anticipated. Potentially moderate effects could occur within the Eastern Section due to the land use changes associated with the addition of new stations and track infrastructure.</p> <p>Agricultural Resources</p> <p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial effects could occur within the Eastern Section associated with conversion of designated agricultural land to non-agricultural use.</p> <ul style="list-style-type: none"> • Prime farmland: 362.50 acres • Unique farmland: 96.70 acres • Farmland of statewide importance: 22.60 acres • Farmland of local importance: 2,549.90 acres • Grazing land: 1,923.20 acres • Agricultural preserve: 760.82 acres <p><i>Operation:</i> Negligible effects in Western Section and Eastern Section once construction activities are completed.</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
Transportation	<p>Under the No Build Alternative, longer travel times and increased VMT would be anticipated as regional growth within the Program Corridor continues and roadway congestion increases. Therefore, the No Build Alternative could result in air quality effects and potential additional noise effects on the surrounding land uses, which could affect sensitive receptors adjacent to existing transportation corridors.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Moderate to substantial effects in Eastern Section associated with rail operations, railroad/roadway crossings, and traffic due to potential temporary closure of lanes, sidewalks, bicycle lanes and routes, driveways, streets, and freeway lanes.</p> <p><i>Operation:</i> Build Alternative Option 1 is anticipated to shift auto trips to intercity rail passenger trips, thereby reducing vehicle trips and VMT on the regional highways.</p> <p><i>Annual Auto Trips and VMT Reduction by Horizon Year:</i></p> <p>Opening Year (2024) auto trip reduction: 107,344 trips Opening Year (2024) VMT reduction: 10,498,246 miles Future Year (2044) auto trip reduction: 178,045 trips Future Year (2044) VMT reduction: 17,412,809 miles</p> <p><i>Ridership:</i> Expected to increase by 66 percent from 204,107 one-way trips in Opening Year (2024) to 338,540 one-way trips in Future Year (2044).</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Moderate to substantial effects in Eastern Section associated with rail operations, railroad/roadway crossings, and traffic due to potential temporary closure of lanes, sidewalks, bicycle lanes and routes, driveways, streets, and freeway lanes.</p> <p><i>Operation:</i> Build Alternative Option 2 is anticipated to shift auto trips to intercity rail passenger trips, thereby reducing vehicle trips and VMT on the regional highways.</p> <p><i>Annual Auto Trips and VMT Reduction by Horizon Year:</i></p> <p>Opening Year (2024) auto trip reduction: 99,026 trips Opening Year (2024) VMT reduction: 9,682,718 miles Future Year (2044) auto trip reduction: 164,248 trips Future Year (2044) VMT reduction: 16,060,152 miles</p> <p><i>Ridership:</i> Expected to increase by 66 percent from 188,290 one-way trips in Opening Year (2024) to 312,306 one-way trips in Future Year (2044).</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Moderate to substantial effects in Eastern Section associated with rail operations, railroad/roadway crossings, and traffic due to potential temporary closure of lanes, sidewalks, bicycle lanes and routes, driveways, streets, and freeway lanes.</p> <p><i>Operation:</i> Build Alternative Option 3 is anticipated to shift auto trips to intercity rail passenger trips, thereby reducing vehicle trips and VMT on the regional highways.</p> <p><i>Annual Auto Trips and VMT Reduction by Horizon Year:</i></p> <p>Opening Year (2024) auto trip reduction: 99,026 trips Opening Year (2024) VMT reduction: 9,682,718 miles Future Year (2044) auto trip reduction: 164,248 trips Future Year (2044) VMT reduction: 16,060,152 miles</p> <p><i>Ridership:</i> Expected to increase by 66 percent from 188,290 one-way trips in Opening Year (2024) to 312,306 one-way trips in Future Year (2044).</p>
Visual Quality and Aesthetics	<p>Because no physical changes would occur, no effects on views of visual resources, visual character or quality, or light and glare conditions are anticipated under the No Build Alternative.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Negligible effects on visual quality and aesthetics within the Eastern Section as construction activities would not permanently obstruct views of the landscape, change the visual character, result in degradation of visual quality, or add significant new sources of light or glare.</p> <p><i>Operation:</i> Negligible effects in Western Section as trains would operate within existing ROW and the addition of two daily roundtrips would not result in notable changes to visual quality and aesthetics. Potentially moderate effects could occur in the Eastern Section if the improvements would remove structures, remove landscaping, or introduce visual elements that are out of scale or otherwise visually incompatible with the existing visual character, and/or add increased light levels or spillover lighting into adjacent areas.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Negligible effects on visual quality and aesthetics within the Eastern Section as construction activities would not permanently obstruct views of the landscape, change the visual character, result in degradation of visual quality, or add significant new sources of light or glare.</p> <p><i>Operation:</i> Negligible effects in Western Section as trains would operate within existing ROW and the addition of two daily roundtrips would not result in notable changes to visual quality and aesthetics. Potentially moderate effects could occur in the Eastern Section if the improvements would remove structures, remove landscaping, or introduce visual elements that are out of scale or otherwise visually incompatible with the existing visual character, and/or add increased light levels or spillover lighting into adjacent areas.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Negligible effects on visual quality and aesthetics within the Eastern Section as construction activities would not permanently obstruct views of the landscape, change the visual character, result in degradation of visual quality, or add significant new sources of light or glare.</p> <p><i>Operation:</i> Negligible effects in Western Section as trains would operate within existing ROW and the addition of two daily roundtrips would not result in notable changes to visual quality and aesthetics. Potentially moderate effects could occur in the Eastern Section if the improvements would remove structures, remove landscaping, or introduce visual elements that are out of scale or otherwise visually incompatible with the existing visual character, and/or add increased light levels or spillover lighting into adjacent areas.</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
		<p><i>Visual Resources:</i></p> <p>Park/trail: 27</p> <p>Designated scenic highway: 0</p> <p>NRHP site: 7</p> <p>NRHP district: 1</p>	<p><i>Visual Resources:</i></p> <p>Park/trail: 25</p> <p>Designated scenic highway: 0</p> <p>NRHP site: 7</p> <p>NRHP district: 1</p>	<p><i>Visual Resources:</i></p> <p>Park/trail: 25</p> <p>Designated scenic highway: 0</p> <p>NRHP site: 7</p> <p>NRHP district: 1</p>
Air Quality and Greenhouse Gases	<p>Projected future growth in the Program Corridor would result in a corresponding increase in traffic and VMT as more cars would be on the roadways. Therefore, traffic congestion is likely to worsen with the No Build Alternative, resulting in air quality effects. Similarly, with the continued trend in increases of VMT within the Program Corridor, fossil fuel consumption and associated GHG emissions would likely increase under the No Build Alternative. Similarly, while no Program-related construction or increase in service would occur, freight and intercity rails trips from other planned and future projects would result in air quality effects within the Program Corridor under the No Build Alternative.</p>	<p><i>Construction:</i> Negligible air quality and GHG effects in the Western Section as no construction activities are proposed. Substantial air quality effects in the Eastern Section could occur due to construction air quality emissions exceeding localized air quality standards.</p> <p><i>Operation:</i> Localized air quality effects could be substantial; however, operation of the Program would generally result in long-term net benefits to air quality through reduction of criteria pollutants through a decrease in regional VMT. Substantial GHG benefits are anticipated as operation would reduce regional vehicle trips and VMT, resulting in a reduction of GHG emissions.</p>	<p><i>Construction:</i> Negligible air quality and GHG effects in the Western Section as no construction activities are proposed. Substantial air quality effects in the Eastern Section could occur due to construction air quality emissions exceeding localized air quality standards.</p> <p><i>Operation:</i> Localized air quality effects could be substantial; however, operation of the Program would generally result in long-term net benefits to air quality through reduction of criteria pollutants through a decrease in regional VMT. Substantial GHG benefits are anticipated as operation would reduce regional vehicle trips and VMT, resulting in a reduction of GHG emissions.</p>	<p><i>Construction:</i> Negligible air quality and GHG effects in the Western Section as no construction activities are proposed. Substantial air quality effects in the Eastern Section could occur due to construction air quality emissions exceeding localized air quality standards.</p> <p><i>Operation:</i> Localized air quality effects could be substantial; however, operation of the Program would generally result in long-term net benefits to air quality through reduction of criteria pollutants through a decrease in regional VMT. Substantial GHG benefits are anticipated as operation would reduce regional vehicle trips and VMT, resulting in a reduction of GHG emissions.</p>
Noise and Vibration	<p>No Program-related construction or increase in service would occur; however, freight and intercity train trips would increase in frequency due to regional growth and demand from other projects. Under the No Build Alternative, ambient noise and vibration levels from existing train operations and local traffic would continue. While no Program-related construction or increase in service would occur, rail noise is anticipated to increase within the Program Corridor.</p>	<p><i>Construction:</i> Negligible noise and vibration effects in the Western Section as no construction activities are proposed. Substantial noise effects and moderate vibration effects in the Eastern Section due to construction noise and vibration levels exceeding FTA or local standards at sensitive receptors.</p> <p><i>Operation:</i> Negligible noise and vibration effects associated with continued operation of trains and stations within Western Section. Moderate noise effects within the Eastern Section due to addition of new station locations and new rail infrastructure, which could have an effect on adjacent noise sensitive uses. Negligible vibration effects within the Eastern Section.</p>	<p><i>Construction:</i> Negligible noise and vibration effects in the Western Section as no construction activities are proposed. Substantial noise effects and moderate vibration effects in the Eastern Section due to construction noise and vibration levels exceeding FTA or local standards at sensitive receptors.</p> <p><i>Operation:</i> Negligible noise and vibration effects associated with continued operation of trains and stations within Western Section. Moderate noise effects within the Eastern Section due to addition of new station locations and new rail infrastructure, which could have an effect on adjacent noise sensitive uses. Negligible vibration effects within the Eastern Section.</p>	<p><i>Construction:</i> Negligible noise and vibration effects in the Western Section as no construction activities are proposed. Substantial noise effects and moderate vibration effects in the Eastern Section due to construction noise and vibration levels exceeding FTA or local standards at sensitive receptors.</p> <p><i>Operation:</i> Negligible noise and vibration effects associated with continued operation of trains and stations within Western Section. Moderate noise effects within the Eastern Section due to addition of new station locations and new rail infrastructure, which could have an effect on adjacent noise sensitive uses. Negligible vibration effects within the Eastern Section.</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
<p>Jurisdictional Waters and Wetland Resources</p>	<p>No effects on jurisdictional waters and wetland resources are anticipated under the No Build Alternative.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to temporary construction activities in proximity to jurisdictional waters and wetlands.</p> <p><i>Operation:</i> Negligible effects in Western Section associated with continued operation of trains and stations within existing ROW. Potentially moderate effects in the Eastern Section associated with maintenance of culverts, bridges, embankments, and station areas.</p> <p><i>Waterbodies:</i> 38 waterbodies</p> <p><i>Wetlands:</i> 355 wetlands (731 acres)</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to temporary construction activities in proximity to jurisdictional waters and wetlands.</p> <p><i>Operation:</i> Negligible effects in Western Section associated with continued operation of trains and stations within existing ROW. Potentially moderate effects in the Eastern Section associated with maintenance of culverts, bridges, embankments, and station areas.</p> <p><i>Waterbodies:</i> 38 waterbodies</p> <p><i>Wetlands:</i> 353 wetlands (729.78 acres)</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to temporary construction activities in proximity to jurisdictional waters and wetlands.</p> <p><i>Operation:</i> Negligible effects in Western Section associated with continued operation of trains and stations within existing ROW. Potentially moderate effects in the Eastern Section associated with maintenance of culverts, bridges, embankments, and station areas.</p> <p><i>Waterbodies:</i> 38 waterbodies</p> <p><i>Wetlands:</i> 353 wetlands (729.78 acres)</p>
<p>Biological Resources</p>	<p>No effects on biological resources are anticipated under the No Build Alternative.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial construction effects within the Eastern Section due to the numerous biological resources within the Program’s potential construction footprint.</p> <p><i>Operation:</i> Negligible effects in Western Section associated with continued operation of trains and stations within existing ROW. Potentially moderate effects in the Eastern Section associated with maintenance activities (e.g., application of pesticides and herbicides, addition of light sources that could disrupt wildlife habitat/movement and increased human activity).</p> <p><i>Sensitive Vegetation Communities:</i> 5 sensitive communities with potential to occur</p> <p><i>Special-Status Plant Species:</i> 22 species with potential to occur</p> <p><i>Special-Status Wildlife Species:</i> 66 species with potential to occur</p> <p><i>Wildlife Movement Corridors:</i> 1 (San Bernardino-San Jacinto Connection)</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial construction effects within the Eastern Section due to the numerous biological resources within the Program’s potential construction footprint.</p> <p><i>Operation:</i> Negligible effects in Western Section associated with continued operation of trains and stations within existing ROW. Potentially moderate effects in the Eastern Section associated with maintenance activities (e.g., application of pesticides and herbicides, addition of light sources that could disrupt wildlife habitat/movement and increased human activity).</p> <p><i>Sensitive Natural Communities:</i> 5 sensitive communities with potential to occur</p> <p><i>Special-Status Plant Species:</i> 22 species with potential to occur</p> <p><i>Special-Status Wildlife Species:</i> 66 species with potential to occur</p> <p><i>Wildlife Movement Corridors:</i> 1 (San Bernardino-San Jacinto Connection)</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial construction effects within the Eastern Section due to the numerous biological resources within the Program’s potential construction footprint.</p> <p><i>Operation:</i> Negligible effects in Western Section associated with continued operation of trains and stations within existing ROW. Potentially moderate effects in the Eastern Section associated with maintenance activities (e.g., application of pesticides and herbicides, addition of light sources that could disrupt wildlife habitat/movement and increased human activity).</p> <p><i>Sensitive Natural Communities:</i> 5 sensitive communities with potential to occur</p> <p><i>Special-Status Plant Species:</i> 22 species with potential to occur</p> <p><i>Special-Status Wildlife Species:</i> 66 species with potential to occur</p> <p><i>Wildlife Movement Corridors:</i> 1 (San Bernardino-San Jacinto Connection)</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
Floodplains, Hydrology, and Water Quality	No effects on floodplains, hydrology, or water quality are anticipated under the No Build Alternative.	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects within the Eastern Section on floodplains, hydrology, and water quality would occur as a result of construction activities in proximity to these water resources.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections due to compliance with legislation governing impacts on water resources.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects within the Eastern Section on floodplains, hydrology, and water quality would occur as a result of construction activities in proximity to these water resources.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections due to compliance with legislation governing impacts on water resources.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects within the Eastern Section on floodplains, hydrology, and water quality would occur as a result of construction activities in proximity to these water resources.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections due to compliance with legislation governing impacts on water resources.</p>
Geology, Soils, Seismicity, and Paleontological Resources	Because no physical changes associated with the Program would occur, no effects on geology, soils, seismicity, and paleontological and mineral resources are anticipated under the No Build Alternative. However, due to the seismic nature of Southern California, geologic hazards such as seismically induced fault rupture, ground shaking, landslides, and liquefaction may still occur under the No Build Alternative.	<p><i>Seismic and Geologic Hazards</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to construction in areas within seismic zones and areas geologically ill-suited (e.g., prone to landslides, underlain by expansive soils, etc.) to railroad infrastructure.</p> <p><i>Operation.</i> Negligible effects in Western Section as no additional infrastructure proposed. Potentially moderate effects in the Eastern Section due to the proposed route alternative traversing a seismically active region.</p> <p><i>Paleontological Resources</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section due to excavation within paleontologically sensitive areas.</p> <p><i>Operation.</i> Negligible effects as operation in the Western and Eastern Sections would not involve sub-surface excavations.</p> <p><i>Mineral Resources</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section as land designated for mineral resource extraction could be converted to transportation use.</p> <p><i>Operation.</i> Negligible effects in the Western and Eastern Sections as operation would not involve sub-surface excavations.</p>	<p><i>Seismic and Geologic Hazards</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to construction in areas within seismic zones and areas geologically ill-suited (e.g., prone to landslides, underlain by expansive soils, etc.) to railroad infrastructure.</p> <p><i>Operation.</i> Negligible effects in Western Section as no additional infrastructure proposed. Potentially moderate effects in the Eastern Section due to the proposed route alternative traversing a seismically active region.</p> <p><i>Paleontological Resources</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section due to excavation within paleontologically sensitive areas.</p> <p><i>Operation.</i> Negligible effects as operation in the Western and Eastern Sections would not involve sub-surface excavations.</p> <p><i>Mineral Resources</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section as land designated for mineral resource extraction could be converted to transportation use.</p> <p><i>Operation.</i> Negligible effects in the Western and Eastern Sections as operation would not involve sub-surface excavations.</p>	<p><i>Seismic and Geologic Hazards</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to construction in areas within seismic zones and areas geologically ill-suited (e.g., prone to landslides, underlain by expansive soils, etc.) to railroad infrastructure.</p> <p><i>Operation.</i> Negligible effects in Western Section as no additional infrastructure proposed. Potentially moderate effects in the Eastern Section due to the proposed route alternative traversing a seismically active region.</p> <p><i>Paleontological Resources</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section due to excavation within paleontologically sensitive areas.</p> <p><i>Operation.</i> Negligible effects as operation in the Western and Eastern Sections would not involve sub-surface excavations.</p> <p><i>Mineral Resources</i></p> <p><i>Construction.</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section as land designated for mineral resource extraction could be converted to transportation use.</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
				<i>Operation.</i> Negligible effects in the Western and Eastern Sections as operation would not involve sub-surface excavations.
Hazards and Hazardous Materials	Because no physical changes would occur, no effects on hazards or hazardous materials are anticipated under the No Build Alternative.	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to construction in areas located in proximity to hazardous materials sites, fire hazard severity zones, and airport influence areas.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections as any operational use/transport of hazardous materials would be in compliance with state and federal law.</p> <p><i>Number of Hazardous Materials Regulatory Database Listings:</i> 2,282</p> <p><i>Fire Hazard Severity Zones:</i> 4,048.7 acres</p> <p><i>Airports/Airport Influence Areas:</i> 8</p> <p><i>Schools within 0.25 mile:</i> 26</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to construction in areas located in proximity to hazardous materials sites, fire hazard severity zones, and airport influence areas.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections as any operational use/transport of hazardous materials would be in compliance with state and federal law.</p> <p><i>Number of Hazardous Materials Regulatory Database Listings:</i> 2,203</p> <p><i>Fire Hazard Severity Zones:</i> 4,048.7 acres</p> <p><i>Airports/Airport Influence Areas:</i> 7</p> <p><i>Schools within 0.25 mile:</i> 23</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to construction in areas located in proximity to hazardous materials sites, fire hazard severity zones, and airport influence areas.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections as any operational use/transport of hazardous materials would be in compliance with state and federal law.</p> <p><i>Number of Hazardous Materials Regulatory Database Listings:</i> 2,203</p> <p><i>Fire Hazard Severity Zones:</i> 4,048.7 acres</p> <p><i>Airports/Airport Influence Areas:</i> 7</p> <p><i>Schools within 0.25 mile:</i> 23</p>
Public Utilities and Energy	<p>Because no physical changes would occur, no effects on public utilities or solid waste facilities are anticipated under the No Build Alternative.</p> <p>However, projected future growth in the Program Corridor would result in a corresponding increase in traffic and VMT as more cars would be on the roadways. Therefore, traffic congestion is likely to worsen with the No Build Alternative, resulting in air quality effects. Similarly, with the continued trend in increases of VMT within the Program Corridor, energy consumption would likely increase under the No Build Alternative.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to conflicts with existing utility infrastructure during construction. Potentially moderate effects pertaining to water and energy use during construction in the Eastern Section as construction of the Program would require consumption of available resources; however, existing supplies would be sufficient.</p> <p><i>Operation:</i> Negligible effects in Western Section as existing tracks would be utilized and maintenance conducted within the existing ROW. Potentially moderate effects in the Eastern Section due to increased demand for water, energy, wastewater treatment, and solid waste disposal.</p> <p><i>Electric transmission lines:</i> 180</p> <p><i>Natural gas pipelines:</i> 6</p> <p><i>Oil/petroleum product pipelines:</i> 7</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to conflicts with existing utility infrastructure during construction. Potentially moderate effects pertaining to water and energy use during construction in the Eastern Section as construction of the Program would require consumption of available resources; however, existing supplies would be sufficient.</p> <p><i>Operation:</i> Negligible effects in Western Section as existing tracks would be utilized and maintenance conducted within the existing ROW. Potentially moderate effects in the Eastern Section due to increased demand for water, energy, wastewater treatment, and solid waste disposal.</p> <p><i>Electric transmission lines:</i> 174</p> <p><i>Natural gas pipelines:</i> 6</p> <p><i>Oil/petroleum product pipelines:</i> 7</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section due to conflicts with existing utility infrastructure during construction. Potentially moderate effects pertaining to water and energy use during construction in the Eastern Section as construction of the Program would require consumption of available resources; however, existing supplies would be sufficient.</p> <p><i>Operation:</i> Negligible effects in Western Section as existing tracks would be utilized and maintenance conducted within the existing ROW. Potentially moderate effects in the Eastern Section due to increased demand for water, energy, wastewater treatment, and solid waste disposal.</p> <p><i>Electric transmission lines:</i> 174</p> <p><i>Natural gas pipelines:</i> 6</p> <p><i>Oil/petroleum product pipelines:</i> 7</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
		<p><i>Canals/aqueducts: 1</i></p> <p><i>Landfills in proximity: 27</i></p>	<p><i>Canals/aqueducts: 1</i></p> <p><i>Landfills in proximity: 27</i></p>	<p><i>Canals/aqueducts: 1</i></p> <p><i>Landfills in proximity: 27</i></p>
Cultural Resources	<p>Because no physical changes would occur, no effects on cultural resources are anticipated under the No Build Alternative.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section as construction activities could result in damage and disturbance of cultural resources, including previously unknown buried cultural resources and/or human remains.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections as operational activities would be predominantly located in the railroad ROW with low probability of damaging cultural resources and/or human remains.</p> <p><i>Number of Known Cultural Resources: 384</i> (117 archaeological sites and 267 built environment resources). Of these 384 known cultural resources, 1 resource is a listed NRHP property, 41 resources are potentially eligible for NRHP or CRHR listing, and 188 resources have not been evaluated for NRHP or CRHR eligibility.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section as construction activities could result in damage and disturbance of cultural resources, including previously unknown buried cultural resources and/or human remains.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections as operational activities would be predominantly located in the railroad ROW with low probability of damaging cultural resources and/or human remains.</p> <p><i>Number of Known Cultural Resources: 361</i> (112 archaeological sites and 249 built environment resources). Of these 361 known cultural resources, 1 resource is a listed NRHP property, 36 resources are potentially eligible for NRHP or CRHR listing, and 171 resources have not been evaluated for NRHP or CRHR eligibility.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Substantial effects in the Eastern Section as construction activities could result in damage and disturbance of cultural resources, including previously unknown buried cultural resources and/or human remains.</p> <p><i>Operation:</i> Negligible effects in both the Western and Eastern Sections as operational activities would be predominantly located in the railroad ROW with low probability of damaging cultural resources and/or human remains.</p> <p><i>Number of Known Cultural Resources: 361</i> (112 archaeological sites and 249 built environment resources). Of these 361 known cultural resources, 1 resource is a listed NRHP property, 36 resources are potentially eligible for NRHP or CRHR listing, and 171 resources have not been evaluated for NRHP or CRHR eligibility.</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
Parklands and Community Services	Because no physical changes would occur, no effects on parklands or community services are anticipated under the No Build Alternative.	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Moderate effects in Eastern Section could result on existing parklands and community facilities if the resources are near where an infrastructure improvement or station is being constructed and/or if parklands would be acquired and demolished to construct the proposed improvements.</p> <p><i>Operation:</i> Negligible effects in Western Section as operation would occur within an existing railroad ROW. Potentially moderate effects in the Eastern Section as new station areas could encourage transit-oriented development and associated increases in population and, in turn, increases in the use of existing parks and community facilities; however, operation of the new railroad infrastructure and stations would not be anticipated to require new or physically altered parklands and community facilities.</p> <p><i>Park/trail:</i> 27</p> <p><i>Place of worship:</i> 90</p> <p><i>Educational facility:</i> 27</p> <p><i>Healthcare facility:</i> 8</p> <p><i>Fire protection facility:</i> 9</p> <p><i>Law enforcement facility:</i> 6</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Moderate effects in Eastern Section could result on existing parklands and community facilities if the resources are near where an infrastructure improvement or station is being constructed and/or if parklands would be acquired and demolished to construct the proposed improvements.</p> <p><i>Operation:</i> Negligible effects in Western Section as operation would occur within an existing railroad ROW. Potentially moderate effects in the Eastern Section as new station areas could encourage transit-oriented development and associated increases in population and, in turn, increases in the use of existing parks and community facilities; however, operation of the new railroad infrastructure and stations would not be anticipated to require new or physically altered parklands and community facilities.</p> <p><i>Park/trail:</i> 25</p> <p><i>Place of worship:</i> 85</p> <p><i>Educational facility:</i> 23</p> <p><i>Healthcare facility:</i> 6</p> <p><i>Fire protection facility:</i> 9</p> <p><i>Law enforcement facility:</i> 6</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Moderate effects in Eastern Section could result on existing parklands and community facilities if the resources are near where an infrastructure improvement or station is being constructed and/or if parklands would be acquired and demolished to construct the proposed improvements.</p> <p><i>Operation:</i> Negligible effects in Western Section as operation would occur within an existing railroad ROW. Potentially moderate effects in the Eastern Section as new station areas could encourage transit-oriented development and associated increases in population and, in turn, increases in the use of existing parks and community facilities; however, operation of the new railroad infrastructure and stations would not be anticipated to require new or physically altered parklands and community facilities.</p> <p><i>Park/trail:</i> 25</p> <p><i>Place of worship:</i> 85</p> <p><i>Educational facility:</i> 23</p> <p><i>Healthcare facility:</i> 6</p> <p><i>Fire protection facility:</i> 9</p> <p><i>Law enforcement facility:</i> 6</p>

Environmental Topic	No Build Alternative	Build Alternative Option 1	Build Alternative Option 2	Build Alternative Option 3
Safety and Security	Because no physical changes would occur, no effects on safety and security are anticipated under the No Build Alternative.	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate in the Eastern Section effects associated with construction as temporary closure of lanes, sidewalks, bicycle lanes and routes, driveways, streets, and freeway lanes could result in safety hazards during construction.</p> <p><i>Operation:</i> Negligible effects in the Western Section as the addition of two daily round trips would not change the existing safety and security protocols for passengers, transit employees, and the public in or near the existing passenger rail system or station facilities. Potentially moderate effects in the Eastern Section due to implementation of new infrastructure requiring new rail safety equipment and protocols.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section associated with construction as temporary closure of lanes, sidewalks, bicycle lanes and routes, driveways, streets, and freeway lanes could result in safety hazards during construction.</p> <p><i>Operation:</i> Negligible effects in the Western Section as the addition of two daily round trips would not change the existing safety and security protocols for passengers, transit employees, and the public in or near the existing passenger rail system or station facilities. Potentially moderate effects in the Eastern Section due to implementation of new infrastructure requiring new rail safety equipment and protocols.</p>	<p><i>Construction:</i> Negligible effects in Western Section as no construction activities required. Potentially moderate effects in the Eastern Section associated with construction as temporary closure of lanes, sidewalks, bicycle lanes and routes, driveways, streets, and freeway lanes could result in safety hazards during construction.</p> <p><i>Operation:</i> Negligible effects in the Western Section as the addition of two daily round trips would not change the existing safety and security protocols for passengers, transit employees, and the public in or near the existing passenger rail system or station facilities. Potentially moderate effects in the Eastern Section due to implementation of new infrastructure requiring new rail safety equipment and protocols.</p>

Notes:

CRHR=California Register of Historical Resources; FTA=Federal Transit Administration; GHG=greenhouse gas; I=Interstate; NRHP=National Register of Historic Places; ROW=right-of-way; SR=State Route; VMT=vehicle miles traveled

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7.1 Preferred Alternative

During the Tier 1/Program scoping process, FRA, Caltrans, and RCTC conducted an interactive process to develop the Program Purpose and Need, as well as high-level goals and objectives (Chapter 2, Program Alternatives). The Program goals and objectives were then used to develop an evaluation framework, which served as the basis for the analysis of Program Corridor concepts and preliminary alternatives, as well as the identification of the preferred alternative. The key differentiating factors for this recommendation are summarized in Table 7-1. Chapter 3, Sections 3.2 through 3.17, describes the potential environmental consequences of the No Build Alternative and the Build Alternative Options.

As summarized in Table 7-1, the No Build Alternative does not meet the Purpose and Need. Specifically, the No Build Alternative would not divert highway trips within the Program Corridor, reduce congestion, increase access to employment and activity centers, or provide reliable travel times and a level of safety comparable to that offered by passenger rail travel. The No Build Alternative would not connect the urban, suburban, and rural areas between Los Angeles and Coachella with a high-capacity travel option, facilitate continued development of a multimodal transportation network, or provide mobility choices for existing and future needs.

In summary, considering the projected ridership, agency and public input, and potential environmental impacts associated with improving passenger rail within the Program Corridor, a passenger rail system from LAUS to Coachella (Build Alternative Option 1) is considered to be more cost efficient and better performing than a passenger rail system from LAUS to Indio (Build Alternative Option 2) or with limited third track infrastructure (Build Alternative Option 3), with similar potential impacts on the environment. FRA and Caltrans recommend Build Alternative Option 1 as the preferred alternative in the Draft Tier 1/Program EIS/EIR for purposes of NEPA.

7.2 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires the selection of an environmentally superior alternative. Based on the evaluation presented in Table 7-1, the No Build Alternative would be the environmentally superior alternative because it would not result in any new construction-related effects or require new land acquisition that may be required for rail infrastructure. However, as further described below, the No Build Alternative does not offer potential long-term air quality, transportation, or economic benefits outlined in the Program's Purpose and Need.

CEQA Guidelines Section 15126.6(e)(2) also states that where the No Project (No Build) Alternative is considered the environmentally superior alternative, the EIR shall identify another environmentally

superior alternative. Accordingly, this Tier 1/Program EIS/EIR also considered the Build Alternative, which consists of three Build Alternative Options. While the Build Alternative Options would potentially affect environmental resources in the Program Corridor, various components of the Build Alternative Options would (individually and collectively) enhance safety and enable greater reliability for both passenger and freight rail traffic. Additionally, the Build Alternative Options would meet the following goals:

1. Provides travelers between the Los Angeles Basin and the Coachella Valley with a public transportation service that offers more convenient and competitive trip times, better station access, and more frequency than currently available public transportation services
2. Provides travelers between the Los Angeles Basin and the Coachella Valley with an alternative to driving that offers reliable travel schedules
3. Provides travelers between the Los Angeles Basin and the Coachella Valley with an affordable transportation service
4. Serves a range of trip purposes traveling between the Los Angeles Basin and the Coachella Valley, particularly including business, social, medical, leisure, and recreational trips
5. Improves regional travel opportunities between the Los Angeles Basin and the Coachella Valley for transit-dependent people
6. Serves the expected population growth in the Los Angeles Basin and the Coachella Valley
7. Does not preclude, by choice of alignment or technology, a possible future corridor expansion between the Coachella Valley and Phoenix

In addition, the Build Alternative Options are anticipated to contribute to improvements in regional air quality, as increased rail ridership would lead to fewer automotive VMT in the Program Corridor. While Build Alternative Options 2 and 3 could have less environmental impacts (due to a shorter rail route and fewer station facilities), Build Alternative Options 2 and 3 are anticipated to result in fewer reductions of VMT and GHG emissions than Build Alternative Option 1. In addition, at this Tier 1/Program EIS/EIR service-level evaluation, site-specific environmental impacts are not known and could be the same for all Build Alternative Options, depending on the location of the rail infrastructure improvements and station facilities. For purposes of this Tier 1/Program EIS/EIR, Build Alternative Option 1 has been identified as the environmentally superior alternative and recommended preferred alternative.