

7 OTHER CEQA/NEPA CONSIDERATIONS

Since publication of the Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS), the following substantive changes have been made to this chapter:

- A footnote was added to Section 7.1.1, Adverse Effects that Cannot Be Avoided under NEPA, regarding the updated Council on Environmental Quality regulations issued after release of the Draft EIR/EIS.
- The transportation subsection of Section 7.1.1 and Section 7.1.2, Significant and Unavoidable Impacts under CEQA, were updated to reflect changes made to Section 3.2, Transportation.
- The noise and vibration subsection of Section 7.1.1 and Section 7.1.2 were updated to reflect changes made to Section 3.4, Noise and Vibration. Text was added to the parenthetical numbers to describe that these numbers are associated with the design variants.
- The safety and security subsection of Section 7.1.1 and Section 7.1.2 were updated to reflect changes made to Section 3.11, Safety and Security.
- Section 7.1.1 and Section 7.1.2 were updated to include cumulative impacts.
- Where appropriate, the verb “would,” when used specifically to describe impact avoidance and minimization features or mitigation measures, as well as their directly related activities, was changed to “will,” indicating their integration into project design.

This chapter describes the National Environmental Policy Act (NEPA) unavoidable adverse effects and California Environmental Quality Act (CEQA) significant and unavoidable impacts that would result from implementing the proposed High-Speed Rail (HSR) San Jose to Central Valley Wye Project Extent (project, project extent). It also describes the relationship between short-term uses of the environment and long-term productivity. Finally, this chapter discusses significant irreversible or irretrievable commitments of resources or foreclosures of future options that construction of the project would create. This chapter is based on the detailed analysis of environmental resources of concern presented in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures. A discussion of the environmentally superior alternative, environmentally preferable alternative, and least environmentally damaging practicable alternative is provided in Chapter 8, Preferred Alternative.

7.1 Unavoidable Adverse and Significant and Unavoidable Impacts

Chapter 3 describes the potential environmental consequences of implementing the project alternatives. The following sections describe adverse effects under NEPA and significant impacts under CEQA that cannot be reduced by mitigation proposed in the resource sections in Chapter 3. Except where otherwise specified, the impacts listed in Section 7.1.1, Adverse Effects that Cannot Be Avoided under NEPA, and Section 7.1.2, Significant and Unavoidable Impacts under CEQA, pertain to all four project alternatives.

7.1.1 Adverse Effects that Cannot Be Avoided under NEPA

Section 2.3, Background, and Section 2.5, Alternatives Considered during Alternatives Screening Process, explain how the California High-Speed Rail Authority (Authority) used the tiered project development and environmental review process to design the HSR system and the San Jose to Central Valley Wye Project Extent alternatives in a manner that avoids and minimizes adverse effects. Under NEPA, mitigation is prescribed for effects that are identified, but in some cases the mitigation will not reduce the effect’s severity enough to avoid the effect. The NEPA regulations¹

¹ The Council on Environmental Quality issued new regulations on July 14, 2020, effective September 14, 2020, updating the NEPA implementing procedures at 40 C.F.R. Parts 1500-1508. However, this project initiated NEPA before the effective date and is not subject to the new regulations, relying on the 1978 regulations as they existed prior to September 14, 2020. All subsequent citations to Council on Environmental Quality regulations in this environmental document refer to the 1978 regulations, pursuant to 40 C.F.R. 1506.13 (2020) and the preamble at 85 Fed. Reg. 43340.

require that the discussion of environmental consequences include “...any adverse environmental effects which cannot be avoided should the proposal be implemented” (40 Code of Federal Regulations [C.F.R.] § 1502.16). The following adverse effects from construction, operations, or both for each resource, as applicable, cannot be avoided or eliminated. Detailed discussion of these impacts, and the applicable mitigation measures as available, are provided for each resource in Chapter 3.

- **Transportation**—Construction and operation of the project alternatives would entail road closures and modifications that would result in permanent increases in congestion on roadways, freeways, and intersections. Moreover, construction under all four project alternatives would result in temporary disruption of bus services. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - The changes to the geometry and capacity of intersections under Alternatives 1, 2, and 3 would result in automobile delay. These delays would not occur under Alternative 4.
 - Construction vehicles and temporary roadway closures would interfere with bus routes and bus stops, which, in turn, would materially decrease the performance of certain bus routes under Alternatives 1, 2, and 3.
 - The project would result in traffic delays at some intersections under all project alternatives in the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections. Permanent changes to the roadway network and increased traffic related to HSR stations would lead to increased traffic delay at 23 intersections (Alternatives 1 and 3) or 24 intersections (Alternative 2) in the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections. Permanent changes to the roadway network, increased traffic related to HSR stations, and increase in gate-down times at the at-grade crossings under Alternative 4 would lead to increased traffic delay at 22 intersections in the San Jose Diridon Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections.
 - All alternatives would contribute to cumulative delays at certain locations to traffic during construction and operations in combination with past, present and future projects.
- **Air quality and greenhouse gases (GHG)**—Construction of the project alternatives would result in temporary direct and indirect effects on air quality. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - Construction-related carbon monoxide (CO) emissions under all four project alternatives would exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds.
 - Construction-related criteria pollutant concentrations under all four project alternatives would lead to new violations of the nitrogen dioxide (NO₂), particulate matter less than or equal to 2.5 microns in diameter (PM_{2.5}), and particulate matter less than or equal to 10 microns in diameter (PM₁₀) National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). Construction would also contribute to existing violations of the PM₁₀ and PM_{2.5} ambient air quality standards in areas where background concentrations already exceed these standards.
 - During construction, all alternatives would contribute to cumulative CO emissions in the SJVAPCD, localized NO₂, PM_{2.5}, and PM₁₀ emissions, and DPM emissions in combination with past, present and future projects.
- **Noise and vibration**—Construction and operation of the project alternatives would generate noise and vibration levels above impact thresholds, resulting in noise effects on sensitive receptors. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:

- Construction under all four project alternatives would require the use of mechanical equipment that would generate temporary increases in noise at noise-sensitive locations, exceeding the residential nighttime Federal Railroad Administration standard due to the need to relocate existing tracks during off-peak hours in the blended corridor.
- Operational noise would cause permanent severe noise effects at between 222 (233 with the tunnel design variant) and 1,212 (1,224 with the tunnel design variant) sensitive receptors, depending on the alternative.
- Operations would result in permanent exposure of sensitive receptors to increased traffic noise along 6 or 7 roadway segments from 2029 Plus Project Conditions and 12 roadway segments from 2040 Plus Project Conditions.
- Before mitigation, operation of the project under 2040 Plus Project Conditions would cause permanent vibration impacts at 81 to 1,203 sensitive receptors, depending on the alternative. While the precise evaluation of the effectiveness of NV-MM#8 requires detailed designs and consideration of site-specific conditions, a preliminary review of the operational vibration impacts indicates that there is the potential to reduce all or nearly all of the vibration impacts for Alternatives 1, 2, and 3 to below the threshold and the potential to reduce all but 15 of the vibration impacts for Alternative 4 below the threshold. However, the actual effectiveness of NV-MM#8 can only be estimated during the detailed design phase, and this estimate is preliminary only.
- All alternatives would contribute to cumulative noise and vibration levels due to operational rail noise, station traffic roadway noise, and operational vibration in combination with past, present and future projects.
- **Safety and security**—Construction and operation of the project alternatives would result in effects on safety and security. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - Alternative 4 would contribute to cumulative emergency vehicle response delays in South San Jose along Monterey Road, in San Martin, and in Gilroy under by more than 30 seconds due to increased gate-down times in combination with past, present and future projects.
- **Station planning, land use, and development**—Construction of the project alternatives would result in the following effect on land use, and no mitigation is available to reduce this effect, which would remain an unavoidable adverse effect under NEPA:
 - Construction under Alternative 3 would convert agricultural, residential, and commercial land uses to transportation use, which is inconsistent with the applicable land use plans.
- **Agricultural farmland**—Construction of the project alternatives would directly result in the temporary and permanent conversion of Important Farmland to nonagricultural use within the project footprint and would also create remnant parcels of Important Farmland, resulting in conversion to nonagricultural use. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - Construction would result in the temporary use of Important Farmland (between 461 and 672 acres, depending on the alternative) and require both the permanent use and the conversion of Important Farmland to nonagricultural uses (between 1,033 and 1,193 acres, depending on the alternative).
 - Construction would create remnant parcels, resulting in the conversion of between 147 and 253 acres of Important Farmland to nonagricultural uses, depending on the alternative.
 - All alternatives would contribute to cumulative conversion of Important Farmland in combination with past, present and future projects.

- **Parks, recreation, and open space**—Construction and operation of the project alternatives would temporarily interfere with access to and use of some recreational facilities and would require permanent acquisition of another facility. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - Alternative 2 would result in the permanent acquisition of school district play areas from South Valley Middle School in Gilroy.
 - All alternatives would contribute to cumulative noise effects at parks, recreational areas, and open space in combination with past, present and future projects.
- **Aesthetics and visual quality**—Construction and operation of the project alternatives would result in effects on visual quality. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - Construction of the viaduct in the Monterey Highway San Jose Landscape Unit under Alternatives 1 and 3 would be visible over existing noise barriers and landscaping that currently shield residential views to Monterey Road and the Union Pacific Railroad/Caltrain tracks and would introduce permanent changes for the residential and recreational (high sensitivity) viewers.
 - Construction of the viaduct in the Coyote Valley Landscape Unit in the median of Monterey Road under Alternatives 1 and 3 would alter the existing visual character of the agricultural landscape, degrading the visual quality of the landscape unit from moderately high to moderate for viewers with moderately high sensitivity.
 - Construction of the East Gilroy Station in the Pajaro–San Felipe Landscape Unit under Alternative 3 would degrade the existing visual character of the agricultural landscape.
 - Under all alternatives, construction would cause indirect permanent effects on visual quality and character resulting from new land use development occurring near HSR stations, especially the East Gilroy Station under Alternative 3, which is in a rural agricultural area, where increased development and intensification in land uses would contrast with the existing setting.
 - During operations under all alternatives, the maintenance of way siding in the Henry Miller Landscape Unit would be lit throughout the night in locations where the existing light level is low.
 - Passing trains and maintenance during HSR operations along the project alignment would result in spillover light, creating new light and increasing nighttime light levels in residential areas under all alternatives, but especially under Alternatives 1 and 3.
 - All alternatives would contribute to cumulative aesthetic and visual effects due to new buildings, rail infrastructure, and rail operations in combination with past, present and future projects.
- **Cultural resources**—Construction of the project alternatives would result in effects on cultural resources. Despite implementation of mitigation measures, when available, the following unavoidable adverse effects would remain under NEPA:
 - Construction activities would impair between 5 and 11 historical built resources or their settings through the introduction of a new rail corridor and the expansion of existing rail tracks, depending on the alternative.
 - All alternatives would contribute to cumulative demolition, destruction, relocation of historic built resources or their settings due to project construction in combination with past, present and future projects.
- **Environmental Justice**—Despite implementation of mitigation measures, the offsetting value of project benefits, and the offsetting value of community improvements, the following

disproportionately high and adverse effects to environmental justice communities would remain under NEPA:

- Under Alternatives 1, 2 and 3, there would be disproportionately high and adverse effects associated with the extensive areas of elevated viaduct or elevated embankment in environmental justice communities.

7.1.2 Significant and Unavoidable Impacts under CEQA

Under CEQA, mitigation is prescribed for significant impacts, but in some cases the mitigation will not reduce the impact to a less than significant level. The following construction and operations impacts from each resource, as applicable, cannot be mitigated to less than significant levels and remain significant and unavoidable under CEQA:

- **Transportation**

- Temporary construction easements associated with the construction of stations, platforms, and track alignment and construction staging and traffic at the existing and proposed stations would temporarily interfere with bus transit operations under Alternatives 1, 2, and 3.
- Alternatives 1, 2 and 3 would contribute considerably to cumulative significant cumulative delays to bus transit during construction in combination with past, present and future projects.

- **Air quality and GHG emissions**

- Construction-related CO emissions under all four project alternatives would exceed the SJVAPCD thresholds.
- Construction-related criteria pollutant concentrations under all four project alternatives would lead to new violations of the NO₂, PM_{2.5}, and PM₁₀ NAAQS and CAAQS. Construction would also contribute to existing violations of the PM₁₀ and PM_{2.5} ambient air quality standards in areas where background concentrations already exceed these standards.
- All alternatives would contribute considerably during construction to cumulative significant CO emission impacts in the SJVAPCD, localized NO₂, PM_{2.5}, and PM₁₀ emission impacts, and localized risks and PM_{2.5} concentrations at sensitive receptors in the BAAQMD in combination with past, present and future projects.

- **Noise and vibration**

- Construction and operations noise for all four project alternatives would exceed the Federal Railroad Administration standards at certain sensitive receptors.
- Additional traffic under all four project alternatives would generate increased traffic noise levels at HSR stations and at the maintenance of way facility (MOWF) during project operations.
- Operation of all four project alternatives would generate excessive ground-borne vibration impacts at certain sensitive receptors. While the precise evaluation of the effectiveness of NV-MM#8 requires detailed designs and consideration of site-specific conditions, a preliminary review of the operational vibration impacts indicates that there is the potential to reduce all or nearly all of the vibration impacts for Alternatives 1, 2, and 3 to below the threshold and the potential to reduce all but 15 of the vibration impacts for Alternative 4 below the threshold. However, the actual effectiveness of NV-MM#8 can only be estimated during the detailed design phase, and this estimate is preliminary only.
- All alternatives would contribute considerably to cumulative significant noise and vibration impacts due to operational rail noise, station traffic noise, and operational vibration in combination with past, present and future projects.

- **Safety and security**
 - Alternative 4 would result in emergency response time delays greater than 30 seconds in South San Jose along Monterey Road, in San Martin, and in Gilroy.
 - Alternative 4 would contribute considerably to cumulative significant emergency vehicle response delays in South San Jose along Monterey Road, in San Martin, and in Gilroy due to increased gate-down times in combination with past, present and future projects.
- **Station planning and land use**
 - Construction under Alternative 3 would convert agricultural, residential, and commercial land uses to transportation use, which would be inconsistent with the applicable land use plan.
- **Agricultural farmland**
 - Construction of all four project alternatives would require the conversion of Important Farmland to nonagricultural use.
 - Construction of all four project alternatives would create remnant parcels, resulting in the conversion of Important Farmland to nonagricultural use.
 - All alternatives would contribute considerably to cumulative significant conversion of Important Farmland in combination with past, present and future projects.
- **Parks, recreation, and open space**
 - Acquisition of 12 percent of the total play area at South Valley Middle School under Alternative 2 would represent a reduction in the total play area available for use.
 - All alternatives would contribute considerably to cumulative significant noise effects at parks, recreational areas, and open space in combination with past, present and future projects.
- **Aesthetics and visual quality**
 - Construction of the project would degrade visual quality through the scale and materials of HSR viaducts, which would contrast with the visual quality of nearby residential or agricultural areas and block scenic vistas. These effects would occur under Alternatives 1 and 3 in the Monterey Highway San Jose and Coyote Valley Landscape Units.
 - Construction of the East Gilroy Station in the Pajaro–San Felipe Landscape Unit under Alternative 3 would degrade the existing visual character of the agricultural landscape.
 - Construction of Alternative 3 would result in substantial visual character changes due to the conversion of agricultural land to urbanized land near the East Gilroy Station.
 - During operations, the maintenance of way siding in the Henry Miller Landscape Unit for all project alternatives; the maintenance of way facility south of Gilroy for Alternatives 1, 2, and 4; and the maintenance of way facility near Old Gilroy for Alternative 3 in the Pajaro–San Felipe Landscape Unit would be lit throughout the night in locations where the existing light level is low.
 - Passing trains and maintenance during project operations under Alternatives 1, 2, and 3 would result in spillover light, creating a new light and increasing nighttime light levels in residential areas.
 - All alternatives would contribute considerably to cumulative significant aesthetic and visual effects due to new buildings, rail infrastructure, and rail operations in combination with past, present and future projects.
- **Cultural resources**

- Construction activities under all four project alternatives would materially impair historical built resources or their setting through the introduction of a new rail corridor and the expansion of existing rail tracks.
- All alternatives would contribute considerably to cumulative significant demolition, destruction, relocation of historic resources or their settings due to construction in combination with past, present and future projects.

7.2 Project Benefits

The San Jose to Central Valley Wye Project Extent is being proposed, despite these significant and unavoidable impacts, based on the benefits listed in this section and identified in Chapter 1, Project Purpose, Need, and Objectives, and in Chapter 3.

7.2.1 Transportation Benefits

- Provides an essential building block to establish very high-speed passenger rail service as part of Phase 1 of the HSR system to meet the state’s growing demands on its transportation system
- Adds capacity to the state’s transportation infrastructure via the new HSR transportation mode, thereby reducing pressure on the state’s existing transportation infrastructure, including highways and airports

7.2.2 Environmental Benefits

- Provides long-term reductions in regional vehicle miles traveled by automobile
- Provides long-term improvements in regional air quality by reducing criteria pollutants and GHG generated by automobiles and aircraft
- Provides long-term reduction in transportation-related energy requirements
- Supports achieving the state’s GHG reduction goals as described in Assembly Bill 32, Senate Bill 32, and the California Air Resources Board’s Scoping Plan
- Supports the state’s goals for reducing vehicle miles traveled and promoting transit-oriented development, as reflected in Senate Bill 743

7.2.3 Economic and Employment Benefits

- Provides economic and employment benefits from construction

7.3 Relationship between Short-Term Use of the Environment and the Enhancement of Long-Term Productivity

NEPA regulations require that the discussion of environmental consequences include “...the relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity” (40 C.F.R. § 1502.16). This section describes the use of the environment—natural resources and land—that would lead to the long-term productivity of these resources by providing a transportation system that would expand capacity while increasing safety, generating employment, and reducing emissions.

Developing the San Jose to Central Valley Wye Project Extent would require an investment of materials to create new transportation infrastructure. This investment of materials is expected to include natural resources, such as rock and aggregate (to construct HSR structures such as viaducts, tunnels, and other facility foundations); steel (for rail and overhead contact system structures); other building materials; and the various structural components of the HSR trains. Fossil fuels would be consumed for project construction. In addition, the project would require conversion of land to accommodate the new transportation infrastructure. In many cases, the land required is already being put to economic use as productive farmland; urban and rural structures (e.g., homes, businesses, and parks); and local roads and state highways. In the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections,

residential, commercial and industrial, agricultural, and community and public uses and facilities would be displaced to accommodate the HSR system. In the Pacheco Pass Subsection, the project would be predominantly within a tunnel and would not require acquisition of land—most of which is currently in rangeland and open space use. In the San Joaquin Valley Subsection, agricultural and dairy activities would be displaced. The consequences of these land conversions are described in Chapter 3.

As indicated in Chapter 1, the capacity of California’s intercity transportation system, including in the San Joaquin Valley, is insufficient to meet existing and future travel demand, and the current and projected future congestion of the system would continue to result in deteriorating air quality, reduced reliability, and increased travel times. The project extent would provide benefits such as increased safety from grade crossings, improved intercity transportation, reduced pollutant emissions, and reduced GHGs. Because the HSR system would provide a new alternative to regional transportation options that consume fossil fuels (e.g., automotive trips and commercial air travel), and because the HSR system would be powered by electricity primarily generated by renewable resources (e.g., solar power, wind power), the project would make an important contribution to GHG reduction efforts.

As described in Section 3.18, Regional Growth, the proposed HSR system would provide direct and indirect economic benefits, including short- and long-term employment benefits. The HSR system would improve accessibility to labor and customer markets and accommodate regional job growth by providing a more attractive market for commercial and office development. The new connectivity to the San Francisco and Los Angeles metropolitan regions provided by the HSR system could increase the regional work force, which would require the construction of new housing, new community services, and generally increased land consumption. Improved accessibility would increase the competitiveness of the San Joaquin Valley, as well as the state’s industries and overall economy. The benefits of the HSR system are described in more detail in Chapter 1.

7.4 Significant Irreversible Environmental Changes or Irretrievable Commitment of Resources

The NEPA regulations require that the discussion of environmental consequences include “...any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented” (40 C.F.R. § 1502.16). Similarly, Section 15126.2(c) of the CEQA Guidelines requires that an EIR address any significant irreversible environmental changes associated with a project.

The San Jose to Central Valley Wye Project Extent would require the irreversible commitment of energy and materials for construction, as well as the irretrievable commitment of resources such as land for HSR facilities and fossil fuels for the generation of energy. The project would require an irretrievable investment of materials such as rock, aggregate, dirt, steel, wood, and other building materials. Fossil fuels would be consumed during construction. In addition, the project would require the conversion of land, including productive agricultural land, to accommodate the new transportation infrastructure (including track and systems, stations, electrical system upgrades, and ancillary facilities). These environmental changes would be irreversible. Chapter 3 evaluates the significance under CEQA and effects under NEPA of these impacts. Overall, it is expected that residents and businesses in the region would benefit from the improved quality of the transportation system (e.g., improved accessibility, increased capacity, energy savings) and that these benefits would outweigh the irreversible or irretrievable commitment of resources.