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vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact. There are three drainage features present within the proposed project would avoid impacts to Drainage Feature 2. The proposed project would result in the permanent loss of Drainage Features 1 and 3. These open drainage ditches would be converted into belowground storm drain channels and connect to the existing belowground storm drain system. Drainage Feature 1 has 0.01 acre of United States Army Corp of Engineers (USACE) and Regional Water Quality Control Board (RWQCB) jurisdictional area and 0.09 acre of California Department of Fish and Game (CDFG) jurisdictional area. Drainage Feature 3 has 0.09 acre of USACE and RWQCB jurisdictional area and 0.38 acre of CDFG jurisdictional area. Therefore, the proposed project would result in permanent impacts to 0.10 acre of USACE jurisdictional areas (non-wetland waters), 0.10 acre of RWQCB jurisdictional areas, and 0.43 acre of CDFG jurisdictional areas. There are no USACE wetlands in the project area; therefore, no wetlands would be impacted by the proposed project.

Since most of the runoff conveyed downstream from Drainage Features 1 and 3 either evaporates or percolates into the groundwater prior to reaching the Santa Ana River and since surface runoff that does ultimately reach the Santa Ana River does so only during extreme storm events or heavy rainfall years, it is likely the USACE would conclude that the loss of Drainage Features 1 and 3 would not have a substantial adverse effect on the chemical, physical, or biological integrity of downstream traditional navigable waters. In addition, Drainage Features 1 and 3 are artificial drainage ditches constructed primarily for flood control purposes, are highly disturbed, and lack sufficient resources suitable for supporting native fish and wildlife species. Based on these existing conditions, impacts to Drainage Features 1 and 3 would be less than significant.

Measures BIO-5, BIO-6, and BIO-7, identified below, are required to ensure compliance with applicable laws and regulations. Any compensatory measures for impacts to USACE, RWQCB, or CDFG would be determined during the permitting process.

Avoidance, Minimization and Mitigation Measures

The following measures shall be implemented during construction activities to avoid or minimize potential adverse impacts on biological resources.

BIO-5 Prior to initiating construction, Union Pacific Railroad (UPRR) shall submit a Pre-Construction Notification (PCN) form and Preliminary Jurisdictional Determination to the United States Army Corps of Engineers (USACE) to obtain coverage under a Nationwide Permit (NWP), pursuant to Section 404 of the Federal Clean Water Act (CWA).

If compensatory measures are required by the USACE, the appropriate type and level of compensation shall be determined in coordination with the USACE based on the quantity and quality of jurisdictional resources to be affected. Typical compensation could include replacement and/or enhancement of on-site or off-site habitat. An example of compensatory measures would be the payment of in lieu fees or the purchase of established mitigation bank credits for enhancement of some identified USACE jurisdictional area. The specific mitigation bank is subject to approval by the USACE and possibly in coordination with the California Department of Fish and Game (CDFG) and the Santa Ana Regional Water Quality Control Board (RWQCB) under guidelines described by these regulatory agencies through the permitting

Chapter 3 – CEQA CHECKLIST RESPONSES

process. Applicable compensatory measures would be in-lieu fee contribution to County of Riverside Parks and Open Space-Santa Ana River Mitigation Bank or a Santa Ana Watershed Association riparian and wetland restoration/enhancement project.

- BIO-6** In the event that a Section 404 authorization or permit is required for the proposed project, UPRR shall submit an application for a 401 Water Quality Certification to the Santa Ana RWQCB and obtain a certification of water quality from the Santa Ana RWQCB prior to initiating construction. In the event that a Section 404 authorization or permit is not required for the proposed project, then prior to initiating construction, UPRR shall submit an application for a State waste discharge permit to the Santa Ana RWQCB for proposed impacts to Waters of the State and obtain appropriate authorization from RWQCB.
- BIO-7** Prior to obtaining initiation of construction, UPRR shall submit a Lake or Streambed Alteration Notification (SAN) to the CDFG for their review. The CDFG may or may not choose to issue a Streambed Alteration Agreement. Notification from the CDFG of either issuance of an Alteration Agreement or determination that it is not required shall be obtained prior to initiating construction.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native or resident migratory wildlife corridors, or impeded the use of native wildlife nursery sites?*

Less Than Significant Impact. The site is located along an urban area that is already highly disturbed. No wildlife movement corridors or fish passages currently exist within the BSA. The concrete and channelized Santa Ana River is located approximately 350 feet east of the BSA. However, this portion of the river nearest the BSA is not vegetated, and the area between the river and the BSA is also highly disturbed and consists of ruderal vegetation and developed areas. The proposed project would not impact wildlife movement corridors or interfere with wildlife movement or fish passage in the vicinity of the BSA or in the Santa Ana River.

Vegetation clearing associated with the proposed has the potential to disturb ornamental trees that may provide nesting habitat for special-status bird species and other migratory birds. With implementation of **Measure BIO-8**, presented below, potential impacts to special-status bird species and migratory birds during construction would be minimized and are considered less than significant.

Avoidance, Minimization and Mitigation Measures

The following measures shall be implemented during construction activities to avoid or minimize potential adverse impacts on special-status bird species and migratory birds.

- BIO-8** All vegetation clearing shall be restricted to outside the active breeding season (February 15 through August 15) for birds whenever possible. If vegetation clearing must occur during breeding season, a qualified biologist shall conduct clearance surveys for active bird nests immediately prior to any clearing of vegetation to ascertain whether any raptors or other migratory birds are actively nesting in the Biological Study Area (BSA). During the clearance surveys, the location of any active bird nests shall be mapped by the biologist, and an appropriate buffer where work shall not take place shall be established and

Chapter 3 – CEQA CHECKLIST RESPONSES

monitored. The buffer shall be delineated by flagging, which shall remain in place until the nest is either abandoned or the young have fledged. If active nests are present, appropriate buffer area shall be determined on a case-by-case basis, depending on nesting species, subject to discussion with the resources agencies when nesting is discovered. This requirement shall be included in the PS&E for the project approved by UPRR.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, because there are no local policies or ordinances relevant to the project site.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The project site is not within the boundary of any approved habitat conservation plan (HCP) or natural community conservation plan (NCCP). Therefore, the proposed project would not conflict with any HCP or NCCP and no mitigation is required.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

V. CULTURAL RESOURCES

The term “cultural resources” as used in this section refers to all historical and archaeological resources, regardless of significance.

This section is based on the *Historic Property Survey Report (HPSR)*, April 2011, which includes the *Historical Resources Evaluation Report (HRER)*, April 2011, the *Archaeological Survey Report (ASR)*, April 2011, the *Extended Phase I Survey Report (XPI)*, and the *Environmentally Sensitive Area Action Plan (ESA)*, April 2011, prepared by LSA Associates, Inc.

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

and

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact. Based on the findings presented in the HPSR, the proposed project will not cause a substantial adverse change in the significance of a historical resource or an archaeological resource pursuant to § 15064.5.

Chapter 3 – CEQA CHECKLIST RESPONSES

The results of the architectural survey, archaeological survey, and the extended phase one (XPI) survey conducted for the project indicate that there are five historic-period (45 years of age or older) built environment resources and 16 historical archaeological resources within the project APE that required evaluation. The built environment resources include an approximately 1.85-mile segment of the Southern Pacific Railroad (36-010330), an approximately 200-foot (ft) segment of the California Southern Railroad (36-006847), a former American Railway Express Company building, a former Southern Pacific passenger depot, and a historic period residential neighborhood (South Colton). Only a small portion of the South Colton neighborhood is within the project Area of Potential Effect (APE) and was intensively surveyed. The remainder of the South Colton neighborhood was surveyed at the reconnaissance level.

There are 16 archaeological resources within the APE: one previously recorded railroad siding with concrete features (36-007976/CA-SBR-7976H); three historic refuse deposits (36-022637/CA-SBR-14410H, 36-022180/CA-SBR-14123H, and 36-022181/CA-SBR-14124H); two historic refuse deposits with structural remains at the former sites of historic buildings (36-022179/CA-SBR-14122H and 36-022182/CA-SBR-14125H); nine surface concrete features (36-022625/CA-SBR-14400H, 36-022626/CA-SBR-14401, 36-022627/CA-SBR-14402H, 36-022628/CA-SBR-14403H, 36-022629/CA-SBR-14404H, 36-022630/CA-SBR-14405H, 36-022632/CA-SBR-14407H, 36-022633/CA-SBR-14408H, and 36-022634/CA-SBR-14409H), and one brick feature (36-022631/CA-SBR-14406H).

The results of the cultural resources studies have determined that none of the built environment resources are eligible for the California Register of Historical Resources (California Register) and none qualify as a historical resource under CEQA. Nine of the historical archaeological resources have been determined to not be eligible for the California Register, nor do they qualify as historical resources according to CEQA. For the purpose of this undertaking only, seven of the historical archaeological resources are considered historical resources for the purposes of CEQA and will be protected by the use of ESAs. The seven remaining historical archaeological sites (36-022627, 36-022629, 36-022630, 36-022631, 36-022632, 36-022633, and 36-022634) were not evaluated as part of the proposed project but will be protected in place by the establishment of Environmentally Sensitive Areas (ESAs) and are considered historical resources for the purposes of CEQA for this project only. These resources are located within the APE, but can be protected in place through establishment of ESAs.

The City of Colton conducted an Historic Resources Survey (1989–1991), which identified the American Railway Express Company building and the Southern Pacific Depot as eligible for designation under the City’s Historic Preservation ordinance. However, neither building was ever formally designated under the City’s ordinance and, since the previous survey is more than five years old, both buildings were required to be re-evaluated as part of this project. Both buildings were found to be ineligible for listing in the California Register and are not considered historical resources under CEQA. For full a discussion regarding these two resources refer to Appendix D, Responses to Comments, Sections 3-2-1 through 3-2-5.

Project Impacts

There are 21 cultural resources within the APE that required evaluation. As noted above, only seven are considered to be historical resources for the purposes of CEQA. The HPSR presents a finding of no substantial adverse change with standard conditions –ESAs for the project - because the impacts to historical resources within the Project Area limits (APE) will be mitigated to below the level of significance by establishing ESAs consistent with the Secretary of the Interior’s

Chapter 3 – CEQA CHECKLIST RESPONSES

Standards for the Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (Standards) pursuant to CEQA Guidelines §15064.5(b). Establishment of ESAs, enforcement measures, and conditions that utilize the Standards are outlined in **Measure CUL-3**, presented below and in the ESA Action Plan attached to the HPSR. Thus, potential impacts to these resources would be avoided and are considered mitigated to less than significant.

The portion of the APE located east of Colton Crossing, which constitutes the former Colton rail yard, is sensitive for historical archaeological resources associated with the long history of the railroad; it is possible that previously unknown buried historical archaeological resources will be discovered by the Build Alternative. In the event that previously unknown buried cultural materials are encountered during construction, compliance with **Measures CUL-1** and **CUL-2**, presented below will minimize potential impacts to unknown cultural resources and are considered less than significant. As noted above, **Measure CUL-3** will mitigate potential impacts to known historical resources within the APE.

Avoidance, Minimization and Mitigation Measures

The following measures shall be implemented during construction activities to avoid, minimize, and/or mitigate potential impacts on known and unknown cultural resources.

- CUL-1** An archaeological monitor shall be retained by UPRR and be present during ground disturbing activities within the top four feet of the surface within the APE at the Colton Crossing and eastward. The monitor shall meet the Secretary of Interior Professional Qualifications Standards for historical archaeology. The monitor shall have the authority to temporarily halt or divert construction activities to assess the significance of archaeological finds and consult with the appropriate agency staff. The agency staff and consultant archaeologist will determine the need for salvage excavation, laboratory analysis, curation of materials, and reporting requirements.
- CUL-2** If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- CUL-3** An Environmentally Sensitive Area (ESA) will be established for the following seven archaeological sites: 36-022627, 36-022629, 36-022630, 36-022631, 36-022632, 36-022633, and 36-022634. The ESA will consist of an area within and near the limits of construction where access is prohibited or limited for the preservation of each archaeological site. The ESA boundary of each site includes the surface exposure of the site and potential subsurface deposits identified during the remote sensing program, and a buffer of 20 feet. No work shall be conducted within the ESA. All designated ESAs and fencing limits will be shown on final design plans and appropriate fencing requirements included in the PS&E. Fencing will consist of high visibility fencing material and will be 4 feet high. The archaeological monitor who meets the Secretary of Interior Professional Standards for historical archaeology shall monitor the placement of the ESA fencing, inspect the fencing periodically throughout the construction period, order replacement of fencing (if needed) and monitor removal of fencing at the end of construction (see ESA Action Plan in the HPSR, Attachment F).

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

This section is based on the *Paleontological Resources Identification and Evaluation Report*, December 2010 prepared by LSA Associates, Inc.

Less Than Significant Impact. Geologic mapping shows that the project area is underlain by middle Pleistocene alluvium and young (Holocene) alluvium sediments derived from the Santa Ana River. The Pleistocene sediments consist of old aeolian (windborne) dune sands and old aeolian sand sheets. The Holocene deposits consist of young alluvial valley deposits and very young wash deposits. According to available records, near-surface late Pleistocene fossils have been found throughout this part of the western San Bernardino Basin.

Within the project area, Holocene alluvium (i.e., deposited in the last 9,000 years) is not considered to contain significant paleontological resources; however, underlying Pleistocene sediments may contain vertebrate fossils. Therefore, all areas of the project with Holocene sediments have the potential to be underlain by Pleistocene sediments that may contain fossils.

A literature review utilizing recent geologic mapping summaries, unpublished reports, paleontological assessment and monitoring reports, field notes, and published literature as appropriate was conducted for the project. In addition, a paleontological resource locality search was conducted through the San Bernardino County Museum, which responded that Pleistocene sediments in the project area are known to produce significant paleontological resources. The Los Angeles County Museum of Natural History was also consulted and added that “Nearby, however, are exposures of older Quaternary deposits, and these may underlie the surficial sediments in the proposed project area.” Both museums concluded that excavations into the older Quaternary alluvial deposits exposed in the project study area may well encounter vertebrate fossils, and substantial excavations in the sedimentary deposits in the proposed project area.

The County of San Bernardino maintains a Paleontological Resource Sensitivity Map (PRSM), which graphically presents the distribution of geologic formations underlying County land that have paleontological sensitivity. The degree of sensitivity is based on available scientific data where local sedimentary formations either have a record of producing fossils or have a realistic potential to contain paleontological resources.

The PRSM mapping indicates the western portion of the project is considered to have high paleontological sensitivity at the surface and at depth, while the eastern portion has high sensitivity only at depth.

The project is expected to disturb sediments with a high potential to contain significant, non-renewable paleontological resources because the project is located in an area identified as having high paleontological sensitivity at the surface and at depth. While most excavation for the proposed project will generally be less than 10 feet below ground surface (bgs), the elevated bridge column footings will require drilling up to 72 inches diameter to a depth of 100 feet. The drilling has the potential to encounter Pleistocene sediments containing fossils.

In addition, stone columns for the bridge structure will be constructed by a vibro-replacement method, which utilizes a vibratory probe inserted into the ground that forces select backfill material into the soil and densifies the existing soil column around the probe. The resultant columns of strengthened, densified soil will increase soil bearing capacity, reduce total and

Chapter 3 – CEQA CHECKLIST RESPONSES

differential settlement, and reduce liquefaction potential. This method of construction of the columns will not have soil spoil associated with it; therefore, any paleontological resources (fossils) would remain in situ. The construction of the columns would not have an adverse impact on paleontological resources.

With implementation of **Measure PAL-1** presented below, potential impacts to any paleontological resources encountered during construction would be minimized and are considered less than significant levels.

Avoidance, Minimization and/or Mitigation Measures

The following measures are proposed to minimize impacts to paleontological resources that may be encountered during construction:

- PAL-1** A Paleontological Mitigation Plan (PMP) will be prepared by a qualified paleontologist prior to completion of final project design, and the recommendations incorporated into the PS&E approved by UPRR. The PMP will include, but not be limited to, the following:
- A trained paleontological monitor shall be present during ground-disturbing activities within undisturbed sediments determined likely to contain paleontological resources. The monitoring will be conducted on a half-time basis when excavation is occurring in the western portion of the site, the eastern portion of the site, and for bridge footings where excavation exceeds 10 feet in depth. If paleontological resources are encountered during excavation, the monitoring will increase to full-time.
 - The monitor will be empowered to temporarily halt or redirect construction activities to ensure avoidance of adverse impacts to paleontological resources. The monitor will be equipped to rapidly remove any large fossil specimens encountered during excavation.
 - If small fossil vertebrate remains are located during the monitoring program, standard samples (12 cubic meters/6,000 lbs) of sediment will be collected and processed to recover microvertebrate fossils. Processing will include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.
 - Upon encountering a large deposit of bone, salvage of all bone in the area will be conducted with additional field staff and in accordance with modern paleontological techniques.
 - All fossils will be prepared to a reasonable point of identification. Excess sediment or matrix will be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified will be provided to the museum repository along with the specimens.
 - A report documenting the results of the monitoring and salvage activities and the significance of the fossils will be prepared and submitted to Caltrans and the project team within 60 days of the end of grading or excavation activities.
 - All fossils collected during this work, along with the itemized inventory of these specimens, will be offered to the San Bernardino County Museum or other appropriate museum repository for permanent curation and storage.

Chapter 3 – CEQA CHECKLIST RESPONSES

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. The California Health and Safety Code (Section 7050.5) states that if human remains are discovered on site, no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98, including coordination with local Native American Indians, if the remains are prehistoric. With adherence to state regulations and **Measure CUL-4** presented below, potential impacts to unknown human remains are considered less than significant.

Avoidance, Minimization and/or Mitigation Measures

The following measures shall be implemented during construction activities to avoid or minimize potential adverse impacts on unknown human remains.

CUL-4 If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendant (MLD). At this time, the person who discovered the remains will contact UPRR and Caltrans District 8 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable. This provision shall be included in the contract specifications approved by UPRR.

VI. GEOLOGY AND SOILS

This section is based on the *Geotechnical Investigation for the Proposed Colton Crossing Project*, August 20, 2010, prepared by CHJ Incorporated, *Initial Site Assessment (ISA) Includes ISA Checklist and Phase 1 Environmental Site Assessment*, February 2011, prepared by CHJ Incorporated, and the *Preliminary Site Investigation (PSI) Representative Sampling*, February 2011, prepared by CHJ Incorporated.

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidences of known fault? (Refer to Division of Mines and Geological Special Publication 42.)

Less Than Significant Impact. The most dominant geologic feature of the region is the San Andreas Fault Zone, which is a State-designated Alquist-Priolo Earthquake Fault Zone that traverses most of California in a northwest-southeast direction. This regional fault is located approximately 8 miles northeast of the project site and is expected to produce an MCE 8.0 earthquake sometime within the next 50 years.

Chapter 3 – CEQA CHECKLIST RESPONSES

The San Jacinto Fault, another designated Alquist-Priolo Earthquake Fault Zone, is adjacent to the northeast corner of the project site (approximately 125 feet northeast of Station 85), and another splay of the San Jacinto Fault is located approximately 0.9 mile northeast of the project site. This fault is expected to produce an MCE 7.5 earthquake sometime within the next 50 years.

The Rialto-Colton Fault crosses the center of the project site in a northwest-southeast direction; it is classified as a concealed fault and may be associated with the San Jacinto Fault. It is believed to extend northwest and eventually connect to the Day Canyon Fault along the San Gabriel Mountains. The Rincon-Colton Fault could be considered “active” based on the Department criteria of movement within the last 700,000 years before present. According to state mapping and database info, this fault could produce an MCE 6.75 earthquake sometime within the next 50 years.

The project geotechnical investigation determined that the potential for rupture on this fault is “very low”. The investigation found several other faults in the surrounding region, but none of them was considered capable of surface rupture, was mapped as crossing the site, or projected toward the site.

The project geotechnical investigation recommended a number of special precautions or restrictions would need to be included in project design to ensure that the project is not adversely affected by fault-induced ground rupture. At a minimum, the project would need to be built to current applicable American Railway Engineering and Maintenance-of-Way Association (AREMA), UPRR and State seismic standards.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

(ii) Strong seismic ground shaking?

Less Than Significant Impact. The Rincon-Colton Fault could be considered “active” based on the Department criteria of movement within the last 700,000 years before present. According to state mapping and database info, this fault could produce an MCE 6.75 earthquake sometime within the next 50 years. The horizontal PBA for the general project area was estimated to be approximately 0.6g from Caltrans California Seismic Hazards Map (Caltrans 1996); however, site-specific calculations in the project geotechnical investigation concluded the most appropriate design peak ground acceleration for the project site is 0.5g based on available data and conditions.

Faults in the project area have been documented as producing earthquakes with a magnitude greater than moment magnitude (M_w) of 7.8, and a PGA of 0.6g was estimated following the 2009 Caltrans seismic design procedure. Depending on soil condition and location within the site, the computed ground motion in the site specific area could reach 0.5g.

With implementation of **Measures GEO-1** and **GEO-2** presented below, potential project-related permanent impacts related to seismic ground shaking are considered less than significant.

Avoidance, Minimization and/or Mitigation Measures

The following measures shall be implemented during construction activities and project implementation to avoid or minimize potential adverse impacts from earthquakes.

Chapter 3 – CEQA CHECKLIST RESPONSES

GEO-1 During the Plans, Specifications, and Estimates (PS&E) Phase, the design and construction of the project structures shall comply with the recommendations in the Preliminary Geotechnical Investigation (pages 30–51) prepared for the project (CHJ 2011) and shall be consistent with appropriate UPRR and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. Additional detailed geotechnical investigations may be conducted by qualified geotechnical personnel as needed to assess geotechnical conditions at specific locations within the project area for the purposes of more specific foundation or construction design. Additional construction requirements or refinements may be incorporated into the final project design as appropriate.

GEO-2 All of the following requirements shall be included in the final design for the project and so noted on appropriate plans:

- Structures shall be designed to resist the maximum credible earthquake associated with nearby faults.
- Design and construction of the project in accordance with current Federal, State, AREMA, and UPRR standards as applicable, and the California Building Code.

(iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. The project site is located in the Riverside Hydrologic Subarea of the Santa Ana Drainage Province. The regional groundwater flow direction in the vicinity of the site is to the south-southeast, toward the Santa Ana River just east of the site. Based on borings performed as part of the geotechnical investigation and site assessment reports, groundwater levels in the project area are relatively deep (i.e., greater than 50 feet bgs, on the order of 117–123 feet bgs). However, the reports also found historical high groundwater depths on the eastern portion of the site (near Mount Vernon Avenue, on the order of 20–25 feet). During a major seismic event, the potential for liquefaction within the western and central portions of the project site is considered low, while the potential for liquefaction in the eastern portion of the site is considered moderate.

Since the site does have some potential for seismically induced liquefaction, the geotechnical investigation included a number of engineering parameters to address liquefaction during design. With implementation of **Measures GEO-1** and **GEO-2**, above, the potential for significant liquefaction effects on the structures constructed for the proposed project are less than significant levels.

Avoidance, Minimization and Mitigation Measures

Implemented of **Measures GEO-1** and **GEO-2** during construction activities and project implementation will avoid or minimize potential adverse impacts from seismic-related ground failure, including liquefaction.

(iv) Landslides?

Less Than Significant Impact. In areas of steep natural slopes or steep rock cuts combined with adverse joint patterns in fractured rock materials, seismically induced rock falls are a possibility. Since the site is essentially flat with no adjacent uplands, the site has little or no potential for rock falls. With the currently proposed slope gradients, potential for rock falls is considered low for properly engineered and constructed slopes; therefore, the proposed project

Chapter 3 – CEQA CHECKLIST RESPONSES

would not be adversely affected by instability associated with natural slopes, and impacts in this regard are considered to be less than significant.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Because the native soils in the project area are predominantly sandy with relatively minor amounts of clay, there is the potential for moderate to severe erosion on natural or new (manmade) slopes. Any slopes would be particularly prone to erosion from runoff from new pavement areas, especially during heavy rains; therefore, operation of the proposed project could result in adverse water quality impacts related to erosion, which are evaluated in Section IX.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant Impact. Strong ground shaking can cause settlement by allowing sediment particles to become more tightly packed, thereby reducing pore space, and causing substantial levels of seismically induced settlement, lateral spreading, or subsidence. The potential for liquefaction is anticipated to be low in the central and western portions of the project site, and moderate in the eastern portion of the site as described in Section iii, above.

When a load such as fill soils is placed, the underlying soil layers undergo a certain amount of compression due to the deformation and relocation of soil particles and the expulsion of water or air from the void spaces between the grains. Some settlement occurs immediately after a load is applied, and some additional settlement occurs over time after placement of the load. For engineering applications, it is important to estimate the total amount of settlement that will occur following placement of a given load and the rate of compression (consolidation). Because the subsurface soils on the project area are predominantly granular, the soils are not expected to undergo consolidation settlement (settlement over long periods of time). Therefore, the proposed project would not be adversely affected by compressible soils.

Corrosive soils contain constituents or physical characteristics that react with concrete (water-soluble sulfates) or ferrous metals (chlorides, low percentage of hydrogen levels, and low electrical resistivity). Fine-grained soils (predominantly clays) are the typical soil types responsible for corrosive site conditions. Because the native subsurface soils in the project area are composed predominantly of coarse-grained soils (medium sands with gravel and dense sands) with little clay binder, corrosive soil is not expected and the construction of the proposed project would not be adversely affected by corrosive soils.

With implementation of **Measures GEO-1** and **GEO-2** (page 60), the potential for various kinds of unstable soils or seismically induced secondary impacts on the structures constructed for the proposed project are considered less than significant.

Chapter 3 – CEQA CHECKLIST RESPONSES

Avoidance, Minimization and Mitigation Measures

Implemented of **Measures GEO-1** and **GEO-2** during construction activities and project implementation will avoid or minimize potential adverse impact potential for various kinds of unstable soils or seismically induced secondary impacts.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. Untreated expansive soils underlying a foundation slab or road alignment can cause damage, including heaving, tilting, and cracking. The soils on the project site are predominantly sands, with varying amounts of silt and gravel. The clay content of these soils is not substantial; therefore, the on-site soils are anticipated to be non-expansive or have a very low expansion potential.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The project does not propose any uses or improvements that would require septic tanks or alternative wastewater disposal systems.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

VII. GREENHOUSE GAS EMISSIONS

a) Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment?

and

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gases?

Less Than Significant Impact. According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined whether a project's incremental effect is "cumulatively considerable." See CEQA Guidelines Sections 15064(i)(1) and 15130. To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of

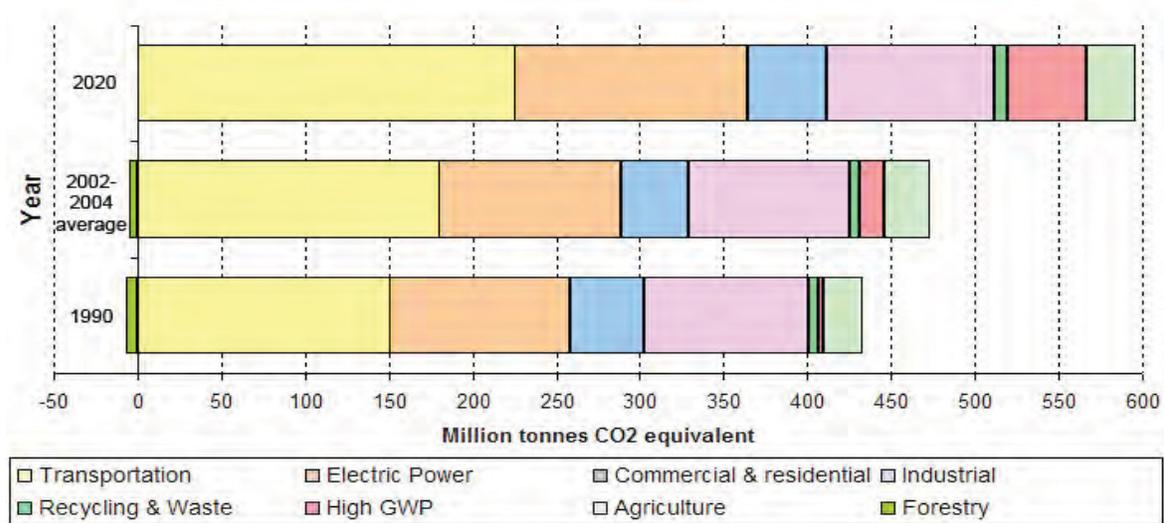
EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, ARB recently released an updated version of the GHG inventory for California (June 26, 2008). Figure 3.7-1, from that update, shows the total GHG emissions for California for 1990, 2002–2004 average, and 2020 projected if no action is taken.

Figure 3.7-1: California GHG Inventory Forecast



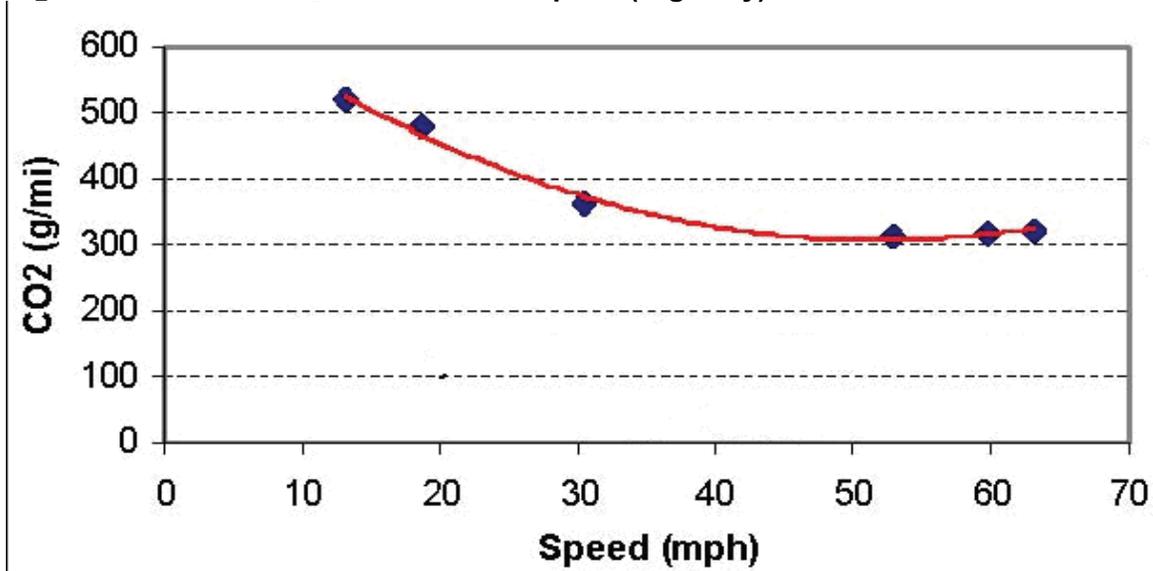
Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human-made GHG emissions are from transportation (see Climate Action Program at Caltrans [December 2006]), the Department has created and is implementing the Climate Action Program that was published in December 2006.⁷

One of the main strategies in the Caltrans Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0–25 miles per hour [mph]) and speeds over 55 mph; the most severe emissions occur from 0–25 mph (see Figure 3.7-2 below). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in GHG emissions. The purpose of the proposed project is to improve rail efficiency and reduce vehicle delays. As shown in Section III, implementation of the proposed project would reduce the long-term CO₂ emissions from on-road vehicle and rail operations.

⁷ <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

Figure 3.7-2: Fleet CO₂ Emissions vs. Speed (Highway)



Source: Center for Clean Air Policy— [http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20\(1-13-04\).pdf](http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf)

AB 32 Compliance. The Department continues to be actively involved on the Governor’s Climate Action Team as ARB works to implement the Governor’s Executive Orders and help achieve the targets set forth in Assembly Bill 32 (AB 32). Many of the strategies the Department is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger’s Strategic Growth Plan calls for a \$238.6 billion infrastructure improvement program to fortify the state’s transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding through 2016.⁸ As shown in the figure below, the Strategic Growth Plan targets a significant decrease in traffic congestion below today’s level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that, combined together, yield the promised reduction in congestion. The Strategic Growth Plan (refer to Figure 3.7-3) relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

As part of the Climate Action Program at Caltrans⁹ (December 2006), the Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, and developing transit-oriented communities and high-density housing along transit corridors. the Department is working closely with local jurisdictions on planning activities; however, the Department does not have local land use planning authority. the Department is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light and heavy-duty trucks; the Department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the EPA and

⁸ Governor’s Strategic Growth Plan, Figure (<http://gov.ca.gov/pdf/gov/CSGP.pdf>).

⁹ <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

Chapter 3 – CEQA CHECKLIST RESPONSES

ARB. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at UC Davis.

Figure 3.7-3: Outcome of Strategic Growth Plan

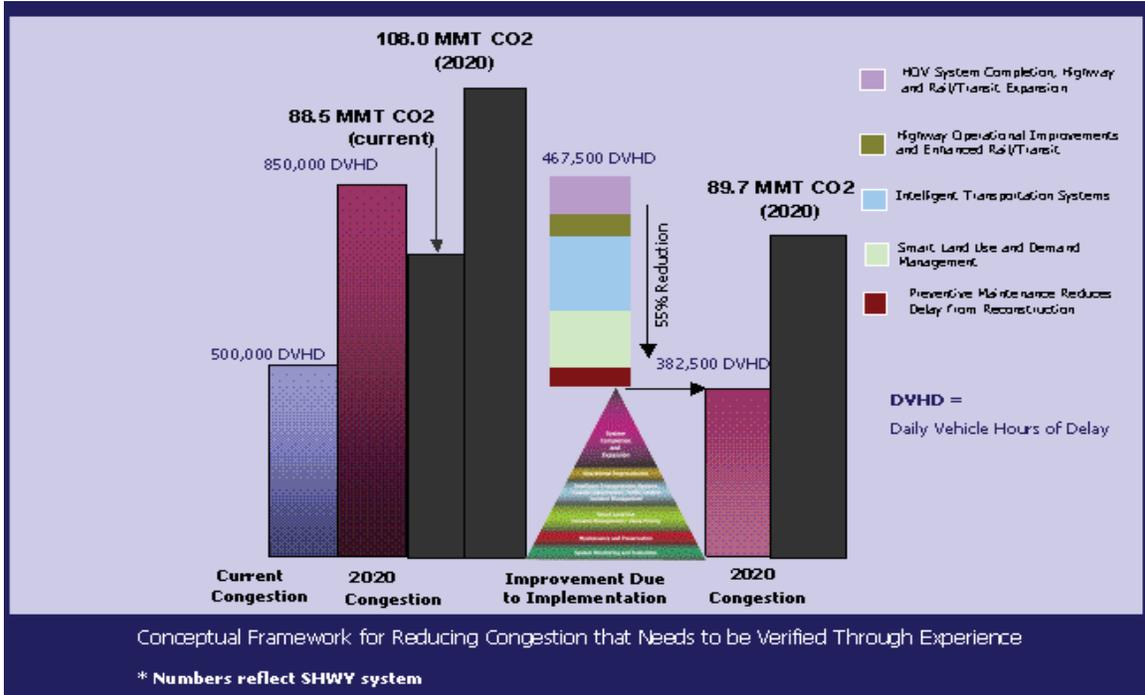


Table 3.7.A summarizes Caltrans and statewide efforts that the Department is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006); it is available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

Table 3.7.A: Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.007	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5% limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	3.6
Goods Movement	Office of Goods Movement	CalEPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

Adaptation Strategies. “Adaptation strategies” refer to how the Department and others can plan for the effects of climate change on the State’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08, which directed a number of State agencies to address California’s vulnerability to sea level rise caused by climate change.

The California Resources Agency (now the Natural Resources Agency, [Resources Agency]), through the interagency Climate Action Team, was directed to coordinate with local, regional, State and federal public and private entities to develop a State Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California’s vulnerability to the identified impacts, and then outline solutions that can be implemented within and across State agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Resources Agency was directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- The range of uncertainty in selected sea level rise projections;
- A synthesis of existing information on projected sea level rise impacts to State infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems; and
- A discussion of future research needs regarding sea level rise for California.

Furthermore, Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance, and operational improvements of the system and economy of the State. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all State agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project

Chapter 3 – CEQA CHECKLIST RESPONSES

vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding the next five years (through 2013), or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) As the proposed project is schedule for construction funding prior to 2013 it is not required to consider sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. the Department is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment, which is due to be released by December 2010.

On August 3, 2009, the Natural Resources Agency, in cooperation and partnership with multiple state agencies, released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other State agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how State agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the State's adaptation strategy will be updated to reflect current findings.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects; however, without statewide planning scenarios for relative sea level rise and other climate change impacts, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios are available, the Department will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

VIII. HAZARDS AND HAZARDOUS MATERIAL

The following is a summary of the findings, conclusions, and recommendations *Initial Site Assessment (ISA)* February 2011, prepared by CHJ Incorporated, and the *Preliminary Site Investigation (PSI) Representative Sampling*, February 2011, prepared by CHJ Incorporated.

a) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. No storage or disposal has been identified at the site and no off-site sources considered likely to affect the site were identified. Based on these findings, no significant concerns related to hazardous materials use, storage, or disposal have been identified at the subject property.

Presence of Hazardous Substances. The project improvement plans indicate that construction will occur in areas identified as containing Recognized Environmental Conditions (RECs) or areas contaminated by various hazardous materials from historical rail-related activities. According to the Phase 1 ESA report, “Soil stockpile adjacent to the south of the main line tracks in the East Colton Yard area ... is from fuel bunker excavations and is likely to be contaminated. Subsurface unidentified organic material in the northeast quadrant of the (site) ... may be contaminated and may have impacted the underlying soils. ... The potential for surficial soil contamination due to the general use of the project area as a rail yard represents an REC. ... Although the contamination has not been fully delineated, the fuel bunker area is considered to have a very low potential to significantly impact the soils north of the track” (CHJ 2011). Organic materials were found in a small area located just south of the I-10 freeway, just north of the railroad tracks, and just east of S. 6th Street. No other evidence of hazardous substances was observed within or adjacent to the project right-of-way.

Routine maintenance activities during operation of the proposed project would be required to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, the operation of the proposed project will not result in adverse impacts related to hazardous waste or materials.

Underground and Aboveground Storage Tanks. No leaking underground storage tanks (LUST) or aboveground storage tanks (ASTs) were identified in the ISA adjacent to the project site or adjacent areas. In the surrounding area, the identified LUST case at 125 N. 9th Street represents a historical REC, but the documented soil contamination was remediated and is not considered to have a potential to impact the project. The identified LUST case adjacent to the south of the main line tracks in the west portion of the Southern Pacific East Colton Yard also represents an REC; however, the residual soil contamination has been delineated and is considered to have a very low potential to affect the project. The four LUST cases north of I-10 in the project vicinity are well documented and are not considered to represent a potential to affect the project site; therefore, these LUST sites are not identified as RECs in the Phase 1 report.

No LUST or ASTs were identified in or near the project area that would negatively affect construction of the proposed improvements. Therefore, no environmental impact to the proposed project would occur from LUST or AST sites (CHJ 2011).

Asbestos-Containing Materials. Testing was conducted for asbestos-containing materials (ACMs) on the structures proposed to be demolished as part of the project. ACMs were found to exist in the old buildings to be demolished at 125 N. 9th Street on the former Cal-Wal Gypsum

Chapter 3 – CEQA CHECKLIST RESPONSES

Supply site just south of the I-10 freeway between La Cadena Drive and 9th Street. These materials will need to be removed and disposed of in accordance with applicable regulations at the beginning of construction. With implementation, of **Measures HAZ-1 and HAZ-2** (page 70), potential impacts associated with ACMs will be minimized and are less than significant.

Hazardous Waste Disposal. No indication of on-site disposal was noted during the reconnaissance survey, and no evidence of onsite disposal was noted at any of the off-site facilities that handle or store hazardous wastes. However, it should be noted that an “undefined area of unidentified organic material” was reported by UPRR personnel in the northeast portion of the site (located just southeast of the I-10 freeway and S. 6th Street) that represents an REC and may require additional evaluation if it will be affected by construction activities. With implementation, of **Measure HAZ-3** (page 70), potential impacts associated with hazardous waste disposal will be minimized and are less than significant.

Drainage Channels. Two drainage channels cross the project site, the SD-8 and SD-9 system in the western portion of the site, and the 11th Street Drain (SD-10) in the eastern portion of the site). Based on site history, soils within the site are suspected of being contaminated due to their proximity to the rail yard and possible mishandling and/or disposal of wastes or materials. Based on UPRR personnel interviews, disposal of hazardous materials has reportedly not occurred on site during the last 10 years; however, previous site history specific to that area is unknown. UPRR personnel reported that no specific hazmat investigations have been conducted within the project site. A sampling scope for this area was developed, authorized, and implemented concurrently with the Phase I process. The analytical results indicated slightly elevated hydrocarbon and heavy metal detections. While the specific detections were not high, the elevated hydrocarbons and metals may be indicative of disposal of contaminated soil or other hazardous materials over time. With implementation, of **Measures HAZ-1 and HAZ-5** (pages 70-71), potential impacts associated with contaminated surface water and/or soil will be minimized and are less than significant.

Lead-Based Paint and Heavy Metals. Due to the age of the structures on the former Cal-Wal Gypsum Supply site, lead-based paint (LBP) contamination was found in the buildings to be demolished at 125 N. 9th Street. These materials will need to be removed and disposed of in accordance with applicable regulations at the beginning of construction.

No other potential LBP was observed during site reconnaissance surveys, however, it is possible that elevated lead concentrations may be found in older buildings or structures affected by project construction, or be present within the striping paint associated with the onsite and adjacent roadways. With implementation, of **Measure HAZ-4** (page 70) potential impacts associated with lead-based paint will be minimized and are less than significant.

Weed Control. Railroad operations have historically been known to use various substances for weed control within the railroad right-of-way. The ISA and Phase 1 ESA determined that surface soils within the project area may contain hazardous materials from the use of weed control, including herbicides, arsenic, and lead. The proposed grade-separated overpass structure will span over the existing BNSF tracks, and proposed improvement plans also show related construction activities adjacent to the UPRR tracks. Sampling and analysis for herbicides, arsenic, and lead should be conducted. Any soil removal from the project site should be performed and soils remediated or disposed of according to existing regulations. With implementation, of **Measure HAZ-2** (page 70), potential impacts associated with weed control will be minimized and are less than significant.

Chapter 3 – CEQA CHECKLIST RESPONSES

Aerially Deposited Lead (ADL). Lead is generally encountered in unpaved areas (or formerly unpaved areas) adjoining older roads primarily as a result of deposition from historical vehicle emissions. A preliminary survey for lead deposition was conducted on site, and detected levels were within or below the published regulatory screening levels for exposure in children. No specific areas were identified that warranted further investigation; therefore, no special handling of material during construction due to lead levels was recommended.

Avoidance, Minimization and/or Mitigation Measures

The following measures are proposed to avoid and/or minimize potential impacts related to hazardous materials:

- HAZ-1** During grading, soil excavation shall be monitored by the construction contractor for visible soil staining, odor, and the possible presence of unknown hazardous material sources, such as buried 55-gallon drums and underground tanks. If discolored soils, soils with an unusual odor, or undocumented subsurface structures are encountered during grading, work shall be halted in that area and a qualified environmental professional shall evaluate the situation and recommend the most appropriate course of action (e.g., sampling, remediation, etc).. Depending on the type and extent of contaminated materials found onsite, the environmental professional may recommend entering into a Voluntary Cleanup Agreement (VCA) with the California Department of Toxic Substances Control (DTSC) to oversee remediation of the contamination, as appropriate. This requirement shall be included in the contract specifications approved by UPRR.
- HAZ-2** The prime contractor shall ensure that any soils that shall be disturbed on or adjacent to the project site, and that are suspected of being contaminated by hazardous materials, shall be appropriately tested and/or remediated prior to the start of construction. If contamination is suspected or identified prior to construction activities, an environmental professional shall determine the most appropriate course of action required. This requirement shall be included in the contract specifications approved by UPRR.
- HAZ-3** Prior to the start of grading in the general area where “unidentified organic material” was found north of the railroad tracks just southeast of the I-10 freeway and S. 6th Street, soil sampling and testing for hydrocarbons and metals shall be conducted. Backhoe trenching may be needed to fully evaluate the lateral and vertical extent of the material. Any soil found to be contaminated in excess of applicable health standards shall be remediated and disposed of according to applicable regulations. This requirement shall be included in the contract specifications approved by UPRR.
- HAZ-4** A licensed contractor shall be retained to properly document, inspect, monitor, and remediate the identified asbestos-containing materials, lead-based paint, and miscellaneous universal wastes, as described in the Preliminary Site Investigation report, dated February 2011. If asbestos-containing materials or lead-based paint are found, they shall be removed and properly disposed of prior to demolition or renovation, in accordance with rules and regulations of the South Coast Air Quality Management Control District and California Department of Toxic Substances Control. This requirement shall be included in the contract specifications approved by UPRR.

Chapter 3 – CEQA CHECKLIST RESPONSES

HAZ-5 If dewatering is required during grading or construction, the onsite water shall be tested to assure it does not exceed any established health standards for heavy metals, organic materials, or other contaminants. Water removed from construction areas that is contaminated shall be disposed of by a licensed contractor in an approved landfill according to applicable regulations. This requirement shall be included in the contract specifications approved by UPRR.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. If a train carrying hazardous materials were to derail while traveling on the flyover, there would be a slight increase in the risk of upset compared to the present at-grade travel. This is due to the increased height that the engine(s) or rail cars could fall and would have an increased risk of spilling their load(s). However, the flyover would also decrease the current potential for conflicts between trains at the existing at-grade crossing. An at-grade train accident involving the release of hazardous materials presents approximately the same relative risk to human health and safety as an accident involving the flyover. In addition, freight trains would be on the flyover for a very limited amount of time compared to their overall length of travel, so the increase in relative risk from accidents along the elevated track is negligible. Therefore, the overall change in risk of upset involving hazardous materials would only be incrementally increased and is not considered to be significant. The railroads will address the flyover when updating their emergency response plans, and it is not expected that the flyover will significantly change response times for police and fire personnel and equipment from existing conditions if a train accident were to occur in the project area. Therefore, the proposed project will have less than significant impacts relative to hazardous materials.

Typical hazardous materials used during construction (e.g., solvents, paints, and fuels) would be handled in accordance with standard procedures. There are standard regulations and the Department policies (avoidance and minimization measures) that must be followed with respect to the use, storage, handling, disposal, and transport of potentially hazardous materials during construction of the proposed project to protect human health and the environment. With implementation of **Measures HAZ-1** through **HAZ-5** (pages 70-71), potential hazardous materials impacts during construction are considered less than significant.

Avoidance, Minimization and Mitigation Measures

Measures HAZ-1 through **HAZ-5** will be implemented to avoid and/or minimize potential impacts related to hazardous materials during construction.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. There are no school facilities existing or planned within a quarter mile of the project study area, so none of the impacts associated with proposed project, affect existing or planned school facilities. There are several public and private schools within a quarter mile of the northern railroad track (i.e., more than a quarter mile north of the Colton Rail Yard), and the project will reduce delay along this line which will incrementally improve or reduce the amount of engine emissions and risk of upset for trains along this line, so the project will have less than significant impacts in this regard.

Chapter 3 – CEQA CHECKLIST RESPONSES

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

- d) *Be located on site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***

No Impact. According to the Envirostor database maintained by the State Department of Toxic Substances Control (DTSC), the project site is not included on the GCS 65962.5 “Cortese” list of hazardous material sites, so there is no impact in this regard (DTSC website 2010).

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?***

No Impact. The project site is not located within an airport land use plan or within two miles of a public airport or public use airport, so there would be no safety hazards in this regard. The closest airport is the San Bernardino International Airport located 2.7 miles to the northeast.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

- f) *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?***

No Impact. The project site is not located within two miles of a private airstrip, so there would be no safety hazards in this regard.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

- g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

Less Than Significant Impact. Response time is the period of time between when a call is received by a dispatcher and the arrival of a fire protection unit or a police patrol car. The response time varies depending upon the nature of the call. Typical calls are prioritized based upon the urgency of the incident. The average emergency call response time for a fire or police unit that includes the subject project site is less than five minutes. Other response times will vary depending on the level of priority in conjunction with the availability of a fire or police unit.

Fire Protection. Fire protection services for the project area are provided by the City of Colton Fire Department (CFD) with “mutual aid” services readily available from the San Bernardino County Fire Department. The CFD is responsible for providing fire suppression, emergency medical services, technical rescue, fire prevention, weed abatement, and disaster preparedness

Chapter 3 – CEQA CHECKLIST RESPONSES

services to the City of Colton. These services are provided by four (4) fire stations strategically located throughout the City, which results in average response times of less than six minutes. Fire services are managed through the following three divisions: Operations, Fire Safety, and Disaster Preparedness. The closest CFD fire station to the project site is Fire Station 211 located at 303 East E Street, which is approximately 0.34 mile northeast of the project site (LSA 2011)(CFD 2010).

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

Police Protection. Police protection services to the project area are provided by the City of Colton Police Department (CPD), which receives all calls at the main station located at 650 North La Cadena Drive approximately 0.45 mile north of the project area. The CPD also has a mutual aid agreement with all adjacent cities as a primary resource, and with the County of San Bernardino Sheriff-Coroner Department as a secondary resource. The mission of the CPD is to protect life and property, solve neighborhood problems, and enhance the quality of life in the community.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

Other Protective Services. The California Highway Patrol (CHP) has jurisdiction on freeways in California, including I-10. The nearest CHP office to the project site is located at 2211 Western Avenue in San Bernardino, approximately 35 miles northeast of the project area. This facility is the west San Bernardino Valley office that serves the Cities of Colton, Fontana, Rialto, San Bernardino, Loma Linda, and the unincorporated communities of Bloomington and Crestmore.

Other law enforcement in the project area includes the UPRR police force. UPRR police officers are commissioned in the states in which the UPRR has right-of-way. Officers also carry federal commissions issued by the USDOT, enabling UPRR officers to conduct intrastate law enforcement operations. The UPRR Police Department is certified by the California Commission on Peace Officers Standards and Training, and officers meet the same standards as any other sworn peace officer. The UPRR Police also respond to reports of hazardous materials accidents along its right-of-way, as well as railroad crossing and personal injury accidents. UPRR Police officers, working with UPRR Hazardous Materials Specialists, assist local agencies during railway spills and accidents, providing critical liaison between the railroad, shipping company and local police and fire departments. This group has almost immediate response times to any accidents or activity requiring their services on the project site.

Project Impacts

During construction, incremental delay in the delivery of services may occur on local roadways, including slightly longer fire and police response times. No detours are anticipated for this project except for temporary closures necessary for the construction staging. Temporary reductions or closures may occur when barriers are being moved into position, when lanes are being restriped, when falsework is being installed or removed, or when the rail lines are being restored to their completed conditions. These temporary closures would likely be limited to non-peak travel hours, and would not adversely affect accessibility to residential or commercial land uses. The City of

Chapter 3 – CEQA CHECKLIST RESPONSES

Colton and San Bernardino County Fire and Police/Sheriff Departments would be notified of all temporary road closures during the all phases of the construction.

A construction staging plan and Transportation Management Plan (TMP) would need to be prepared for the proposed project to minimize traffic-related impacts during construction (see Transportation Section XVI).

Implementation of the proposed project would incrementally improve overall circulation (and emergency access) within the project area by eliminating conflicts and delays at off-site at-grade crossings to the north, east, and west of the project area, although the actual benefit to local circulation would be incremental and difficult to accurately calculate, especially as distance from the project site increases. Once operational, no reduction in the number of travel lanes or intersecting road closures are planned as a result of the proposed project, so its impacts relative to emergency access will be less than significant.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires including where wildlands are adjacent to urbanized areas or where residents are intermixed with wildlands?

No Impact. The project site is in a heavily urbanized area with no urban/wildland interface on the project site or in the surrounding area.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

IX. HYDROLOGY AND WATER QUALITY

The potential for the proposed project to result in adverse impacts related to hydrology and water quality was assessed in the *Water Quality Assessment Report* (WQAR) (February 2011), the *Summary of Floodplain Encroachment* (October 2010), and the *Preliminary Drainage Report* (August 2010). The discussion below is based on that analysis.

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, during storm events erosion and sedimentation could occur at an accelerated rate. During construction of the proposed project, the total disturbed area would be approximately 36 acres. In addition, chemicals, liquid products, and petroleum products (such as paints, solvents, and fuels), concrete-related waste, and other construction debris and waste may be spilled or leaked, and have the potential to be discharged into receiving waters.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

Pollutants of concern in runoff from the railroad mainline include sediments, heavy metals, oil and grease, trash and debris, pesticides, and organic compounds. The proposed project would result in a permanent increase in impervious surface area of approximately 9.2 acre compared to the existing railroad mainline. This increase in impervious area would increase the volume of runoff during storms, which would more effectively transport pollutants to receiving waters.

Reach 4 of the Santa Ana River is listed as impaired for pathogens on the 2010 California 303(d) List of Water Quality Limited Segments. However, pathogens are not a constituent of concern from the railroad mainline. Therefore, the proposed project would not contribute to the existing impairment.

The proposed project would be required to comply with applicable National Pollution Discharge Elimination System (NPDES) permit requirements for construction and operation to protect the beneficial uses of waters. Under the Construction General Permit, the project would be required to prepare an SWPPP and implement construction BMPs detailed in the SWPPP during construction activities. Construction BMPs would include, but not be limited to, Erosion and Sediment Control BMPs designed to minimize erosion and retain sediment on-site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

The requirements of the Construction General Permit are based on the risk level of the project. The overall risk level is based on two factors: receiving water risk and sediment risk. Runoff from the project site would not discharge to a 303(d) listed waterbody impaired for sediment or discharge to a waterbody with designated beneficial uses of SPAWN, COLD, and MIGRATORY; therefore, the receiving water risk is low. Based on the anticipated construction schedule (September 2011 through March 2014), the project sediment risk would be high (soil loss = 267 tons/acre). Therefore the project would be Risk Level 2. Risk Level 2 projects are required to implement Good Housekeeping, Erosion Control, and Sediment Control BMPs; perform quarterly non-storm water discharge observations; weekly, pre-storm, interim storm, and post-storm inspections; prepare and implement a Rain Event Action Plan (REAP); collect storm water samples; and comply with the pH and turbidity Numeric Action Levels specified in the Construction General Permit.

In addition, Source Control, Site Design, and Treatment Control BMPs will be implemented in the project to target constituents of concern in runoff from the project area, in order to prevent degradation of receiving water quality with implementation of the proposed project. Proposed Treatment Control BMPs include non-vegetated drainage swales, detention basins, infiltration basins, and/or manufactured/proprietary devices to treat runoff from the elevated structure. **Measures HYD-1 and HYD-2** provided below, are regulatory requirements that would minimize project impacts to water quality. With compliance with existing NPDES permits, and implementation of BMPs that target pollutants of concern and pollutant loads, impacts related to water quality standards and waste discharge requirements are considered less than significant.

Avoidance, Minimization and/or Mitigation Measures

The following measures shall be implemented during construction activities to avoid or minimize potential adverse impacts on water quality and hydrology.

HYD-1 During construction, the Union Pacific Railroad (UPRR) shall comply with the provisions of the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) (Order

Chapter 3 – CEQA CHECKLIST RESPONSES

No. 2009-0009-DWQ, NPDES No. CAS000002), and any subsequent permit, as they relate to construction activities for the project. This shall include submission of the Permit Registration Documents, including a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (SWRCB) via the Storm Water Multi-Application and Report Tracking System (SMARTS) at least 7 days prior to the start of construction. Construction activities shall not commence until a Waste Discharger Identification (WDID) number is received from the SMARTS. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD) and shall meet the requirements of the Construction General Permit and shall identify potential pollutant sources associated with construction activities; identify non-storm water discharges; develop a water quality monitoring and sampling plan; and identify, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants associated with the construction site. BMPs shall include, but not be limited to, Good Housekeeping, Erosion Control, and Sediment Control BMPs. The BMPs identified in the SWPPP shall be implemented during project construction. UPRR will comply with sampling and reporting requirements of the Construction General Permit. A Rain Event Action Plan (REAP) will be prepared and implemented by a Qualified SWPPP Developer (QSP) within 48 hours prior to a rain event of 50% or greater probability of precipitation according to the National Oceanic and Atmospheric Administration (NOAA). A Notice of Termination (NOT) shall be submitted to the SWRCB within 90 days of completion of construction and stabilization of the site.

HYD-2 During final design, UPRR shall prepare a Final Water Quality Management Plan (WQMP) that details the Source Control, Site Design, and Treatment Control BMPs to be incorporated into the proposed project. The BMPs shall be consistent with the San Bernardino County Stormwater Program *Model Water Quality Management Plan Guidance* and *Water Quality Management Plan Template* and shall be properly designed, installed, and maintained to target pollutants of concern. The WQMP shall be submitted to the City of Colton and County of San Bernardino for review and approval.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

No Impact. The proposed project would not deplete groundwater supplies or interfere with groundwater recharge, because, as an improvement to an existing railway, the proposed project will not utilize groundwater. Although the project would increase impervious surface area, runoff from the project area would continue to infiltrate at the graded ditches, drainage swales, detention basins, and/or infiltration basins. Due to the depth to groundwater (greater than 117 ft below ground surface), groundwater dewatering is not anticipated during project construction. Perched groundwater may be encountered during construction of the cast-in-drilled-hole (CIDH) piles; however, this would not require groundwater dewatering because perched groundwater would drain into the hole and dissipate. Although not anticipated, if groundwater is encountered during construction, any groundwater dewatering would be temporary and would not significantly deplete groundwater supplies. Therefore, the proposed project would not deplete groundwater supplies or interfere with groundwater recharge.

Chapter 3 – CEQA CHECKLIST RESPONSES

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

Less Than Significant Impact. During construction activities, drainage patterns would be altered due to grading activities. As discussed above in Checklist Response IX.a., above, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. As specified **Measure HYD-2** (page 77), a regulatory requirement, construction BMPs including Erosion and Sediment Control BMPs would be implemented to minimize erosion and retain sediment on-site.

Construction of the proposed project would result in a permanent change to onsite drainage and flow patterns. Onsite drainage patterns historically flow to the east or south. The proposed project would create a high point at the top of the flyover structure, and as a result, runoff from half the project area would drain east and half would drain west. In addition, the 100-year storm discharge would be approximately 10 cubic feet per second (cfs), an increase of about 5 cfs above existing levels. Even though the onsite flow patterns would change, the project storm runoff would ultimately discharge to the Santa Ana River as it has done so historically. The proposed detention basins and infiltration basins would detain/retain runoff and discharge it at a rate comparable to existing condition to prevent downstream erosion. **Measures HYD-1 and HYD-2** (pages 76-77) are regulatory requirements that would minimize project impacts to water quality. Therefore, impacts related to erosion or siltation as result of drainage pattern or rivercourse changes considered less than significant with the implementation of **Measures HYD-1 and HYD-2** (pages 76-77).

Avoidance, Minimization and Mitigation Measures

Implementation of **Measures HYD-1 and HYD-2** will avoid or minimize potential adverse impacts related to erosion or siltation.

d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

Less Than Significant Impact. The proposed project would change onsite drainage and flow patterns. Onsite drainage patterns historically flow to the east or south. The proposed project would create a high point at the top of the flyover structure, and as a result, runoff from half the project area would drain east and half would drain west. In addition, for onsite drainage, the 100-year storm discharge would be approximately 10 cfs, an increase of about 5 cfs above existing levels. To address this increase in storm flows, discharge from the western portion of the flyover structure would be directed to the existing basins near Rancho Avenue where the water will infiltrate. Flows from the structure to the east would be directed to the proposed basin near Mount Vernon Avenue.

Currently there are flooding conditions due to existing deficiencies in the storm drain systems which would be addressed by the proposed project. The Colton Southwest Storm Drain is

Chapter 3 – CEQA CHECKLIST RESPONSES

inadequate under current conditions and ponding occurs at the corner of Valley Boulevard and I-10 Freeway because there is no outlet for the flow. As part of the proposed project, the open channel would be replaced with a 54 inch Reinforced Concrete Pipe (RCP), as described in Section 1.2.2, to address existing ponding within the project study area.

The 11th Street Storm Drain system is currently unable to accommodate runoff from a 25-year storm. Therefore, this storm drain within the project area would be replaced as part of the proposed project improvements. Proposed drainage improvements include three 72-inch smooth steel and/or corrugated metal pipes underneath the proposed flyover structure, as described in Section 1.2.2, to maintain the existing alignment of the drainage.

The proposed drainage improvements would be designed so that there would be no increase in the base flood elevations 11th Street and Colton Southwest Storm Drain floodplains. In addition, the proposed project would not preclude future master plan drainage improvements.

As discussed above, the project includes improvements that would improve existing flooding conditions. Therefore, impacts related to flooding as a result of drainage pattern or rivercourse changes, or increases in runoff, would be less than significant.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. Approximately 1.25 cfs of the runoff from the project area would discharge to the Colton Southwest Storm Drain, approximately 1.25 cfs would discharge to the 3rd Street Storm Drain, and approximately 2.5 cfs would drain to either the 11th Street Storm Drain and/or the Warm Creek Channel just upstream of its confluence with Santa Ana River. The existing capacity of the Colton Southwest Storm Drain, the 3rd Street Storm Drain, and the 11th Street Storm Drain are 209 cfs, 405 cfs, and 290 cfs, respectively. The increase in flow to the storm drain system as a result of the project is minor in comparison to the existing capacity of these systems. However, currently there is flooding during major storm events due to existing deficiencies in the storm drain systems, which would be addressed by the proposed project. The proposed improvements are discussed above under Response IX.d., above.

In addition, as an improvement to an existing railroad facility, the project would not create new sources of pollutants. Implementation of Treatment Control BMPs, as noted in **Measure HYD-2** (page 77), would minimize any incremental pollutant loading associated with the increased impervious surface area of the proposed project. Therefore, for the reasons discussed above, the proposed project would not create or contribute runoff water which would exceed the capacity or existing planned storm water drainage systems or provide substantial additional sources of pollutant runoff and these impacts are considered less than significant.

Avoidance, Minimization and Mitigation Measures

Implementation of **Measure HYD-2** will minimize any incremental pollutant loading associated with the increased impervious surface area of the proposed project.

Chapter 3 – CEQA CHECKLIST RESPONSES

f) *Otherwise substantially degrade water quality?*

Less Than Significant Impact. Refer to the discussion above in Section IX(a). Implementation of **Measures HYD-1 and HYD-2** (pages 76–77) will reduce impacts on water quality to less than significant.

Avoidance, Minimization and Mitigation Measures

Implementation of **Measures HYD-1 and HYD-2** will reduce impacts on water quality from the proposed project.

g) *Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazards delineation?*

No Impact. The proposed project does not propose the construction of housing in a 100-year flood hazard area; therefore, no impacts would occur.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

h) *Place within a 100-year flood hazard area structures that would impede or redirect flood flows?*

Less Than Significant Impact. The proposed project would not result in longitudinal encroachments of a base (100-year) floodplain/floodway. At the 11th Street Storm Drain, the project improvements would cause a lateral encroachment into the floodplain/ floodway. The proposed replacement culvert would be designed to result in no net rise of the Base Flood Elevations upstream or downstream from the project. This would include outlet and inlet structures to convey flows along the culvert system. During the Plans, Specifications, and Estimates (PS&E) phase, additional or replacement culverts would be designed such that no increase in the Base Flood Elevations would occur.

At the Colton Southwest Storm Drain, the project improvements would also cause a lateral encroachment onto the 500-year floodplain but the bridge opening would provide a means for floodplain flows to continue though the project. Existing drainage patterns would be maintained through the project area (via the proposed bridge opening), allowing excess surface flows to be conveyed southerly similar to existing conditions. The proposed project would avoid impacts with the design of the bridge opening such that there is no increase to the base flood elevation. Flood flows would not be impeded or redirected, and impacts related to floodplain or floodway encroachment would be less than significant with implementation of **Measures HYD-3 and HYD-4** indicated below.

Avoidance, Minimization and/or Mitigation Measures

The following measures shall be implemented during construction activities and project implementation to avoid or minimize potential adverse impacts on water quality and hydrology.

HYD-3 The 11th Street culvert shall be designed during the Plans, Specifications, and Estimates (PS&E) phase such that the size of the additional or replacement

Chapter 3 – CEQA CHECKLIST RESPONSES

culvert(s) shall result in no increases in the Base Flood Elevation. During PS&E, the effect of the proposed project on the Base Flood Elevation shall be confirmed as part of the Final Hydrology and Hydraulics Report prepared during this phase such that no impact to Base Flood Elevations occurs from the proposed project. The Final Hydrology and Hydraulics Report shall be prepared by a qualified registered professional engineer and shall be approved by UPRR.

HYD-4 A No Rise Certification for the 11th Street Storm Drain shall be included as part of the Final Hydrology and Hydraulics Report, and shall be submitted to the City of Colton for review and approval, prior to completion of the Report.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as the result of the failure of a levee or dam because, as an improvement to an existing railway facility, the project would not increase flooding risk. Therefore, the project would not expose people or structures to a significant risk of flooding, and no impact would occur.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

j) Expose people or structures to inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project would not be inundated by seiches, tsunami, or mudflow because it is not in an area where these features are present. Due to the distance of the project site from the ocean, there is no foreseeable risk of tsunami inundation. There is also no risk from seiches (oscillations in enclosed bodies of water caused by seismic waves) or mudflows in the project area due to the lack of large bodies of water or steep slopes in the project area. Therefore, no impacts related to inundation by seiche, tsunami, or mudflow would occur.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

X. LAND USE AND PLANNING

a) Physically divide an established community?

No Impact. The existing UPRR railroad tracks and I-10 freeway form a physical barrier that separates a predominantly residential neighborhood to the south and a commercial business corridor to the north along Valley Boulevard. The residential neighborhood is located between Rancho Avenue to the west and Mount Vernon Avenue to the east and immediately south of the project footprint. The neighborhood is characterized by extensively altered historic-period homes and a few historic-period commercial businesses. The original grid pattern of the streets has also been changed. K Street has cul-de-sacs in three places, La Cadena Drive has been realigned and rerouted under the railroad tracks, most of South 6th Street has been removed to accommodate

Chapter 3 – CEQA CHECKLIST RESPONSES

the railroad, and Rancho Avenue was built in the 1960s. Predominantly office, service, and retail uses have become established on Valley Boulevard, creating a major commercial corridor within Colton (*Community Impact Assessment*, February 2011, prepared by LSA Associates, Inc.). The proposed project will replace the existing at-grade UPRR railroad tracks with an elevated structure traveling over the BNSF railroad tracks forming the new Colton Crossing rail to rail grade separation. The proposed project will not affect the existing residential and commercial neighborhoods north and south of the proposed project footprint and will not physically divide a community.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project footprint has been utilized for rail activities since 1875. These railroad uses and the existing adjacent residential neighborhood to the south have been in this configuration for over 100 years. The proposed project would result in the continuation of existing railroad uses within the project footprint and would not result in a significant change to existing land use patterns.

The project footprint west of Rancho Road is designated industrial in the County's General Plan and Zoning. East of Rancho Road, the project footprint is designated industrial and residential in the City's General Plan and Zoning designations. The area designated as residential is occupied by the UPRR rail yard and there is no intention of constructing residences on these properties. The residential designation appears to be a mapping error. The proposed project is consistent with the land use designations for the project footprint. The proposed project is also consistent with City policies that support maintenance of a strong industrial base, placement of industrial uses adjacent to railroads, and programs to improve local air quality and reduce airborne pollutants. The proposed project would reduce train idling in the area, which would reduce air pollutant emissions in the area and within the rail study area as a whole. Therefore, the proposed project would be consistent with applicable plans and policies and no impact related to consistency or compatibility with applicable land uses plans, policies or regulations would occur and no mitigation is required.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. As described previously in Checklist Response IV(f), the project site is not within the boundary of any approved habitat conservation plan (HCP) or natural community conservation plan (NCCP).

Chapter 3 – CEQA CHECKLIST RESPONSES

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

XI. MINERAL RESOURCES

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Less Than Significant Impact. Data on potential mineral resources in the project area was originally researched and published by the California Department of Mines and Geology (CDMG), now the California Geological Survey (CGS), in Special Report 143, Part VII, “Classification of Sand and Gravel Resource Areas, San Bernardino Production – Consumption Region” dated 1984 (CDMG 1984). This report was updated in 2008 by Special Report 206 which did not change the boundaries of the designated mineral resource areas, but updated the total yield and economic value of the area’s mineral resources (CGS 2008).

According to DMG Special Report 143, the Santa Ana River, adjacent to the project site to the east, is classified as a Mineral Resource Zone 2 (MRZ-2) for its extensive sand and gravel deposits. This designation means that “adequate information indicates that significant mineral deposits are present, or there is a high likelihood for their presence” (CDMG 1987). In addition, the Slover Mountain facility just west of the site is a designated mine which has yielded large amounts of marble and limestone in the past and is still in active production.

The Open Space and Conservation Element of the City of Colton General Plan indicates that Slover Mountain is the primary mineral resource in the City (Colton GP, OSCE page 6-5).

Available information indicates the project site is not within a designated MRZ or Aggregate Resource Area (ARA) (CDMG 1987). Therefore, the proposed project will not have any impact on mineral resources,

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. The proposed project site is not classified as an area with important mineral resources by the City of Colton or the County of San Bernardino in their General Plans. Therefore, the proposed project would not impact locally important mineral resource recovery site.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

XII. NOISE

The analysis in this section is based on the comprehensive *Noise and Vibration Assessment*, February 2011 prepared for the proposed project by ATS Consulting.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. Noise impacts and benefits for the Colton Crossing project have been estimated based on the criteria provided in the Federal Railroad Administration (FRA 2005) and the Federal Transit Administration (FTA 2006) guidance manuals.

Operational Noise Thresholds. Per the FRA/FTA guidance, an existing noise of 60 dBA day-night averaged noise level (L_{dn}) yields a threshold of 57.8 dBA L_{dn} for moderate impacts and 63.4 dBA L_{dn} for severe impacts for the proposed project.

Construction Noise Thresholds. FRA/FTA guidelines state that an appropriate impact threshold for construction noise is a 30-day average L_{dn} of 75 dBA or ambient plus 10 decibels, whichever is *greater*. Because the existing noise levels in much of the project area are quite high, the impact threshold selected for the analysis of construction noise impacts is a 30-day average L_{dn} of 75 dBA

Existing Noise Sources. The existing noise environment in the study area is dominated by freight and passenger trains on the BNSF and UPRR tracks and vehicular traffic on the I-10 freeway. The use of horns as trains approach at-grade road/rail crossing is by far the loudest noise source in the study area. Other rail-related noise sources are the locomotive engines, the rail cars, wheel squeal when trains traverse the tight radius curves of the connection tracks in the northwest and southeast quadrants of the Colton Crossing, wheel impacts at turnouts, crossovers and the diamond crossing, and various noises from activities within the UPRR yard south of the I-10 freeway. The noise assessment identified 19 sensitive receptor locations (R1 - R19) in the project area. Table 3.12.A identifies the existing noise levels at these locations. The location of these receptors is shown in Figure 3.12.1.

Table 3.12.A: Summary of Noise Impact Assessment

Receiver	Side of I-10	Noise Levels, L_{dn} (dBA)						Change Due to Project ⁽³⁾		Impact/No Change/Benefit (I/N/B)	
		Existing		Future				2015	2035	2015	2035
		2009 ⁽¹⁾	2010 ⁽²⁾	2015 ⁽²⁾		2035 ⁽²⁾					
		No Build	No Build	No Build	Build	No Build	Build				
R1	N	72	72	73	73	75	75	0	0	N	N
R2	N	82	82	83	83	85	85	0	0	N	N
R3	N	94	95	95	95	97	97	0	0	N	N
R4	N	80	81	81	81	83	83	0	0	N	N
R5	N	78	79	80	80	82	82	0	0	N	N
R6	N	87	89	89	89	92	92	0	0	N	N
R7	N	87	89	89	89	92	92	0	0	N	N
R8	N	70	71	72	72	74	74	0	0	N	N
R9	N	74	75	76	76	79	79	0	0	N	N
R10	N	64	66	66	67	69	69	0	0	N	N

Chapter 3 – CEQA CHECKLIST RESPONSES

Table 3.12.A: Summary of Noise Impact Assessment

Receiver	Side of I-10	Noise Levels, L _{dn} (dBA)						Change Due to Project ⁽³⁾		Impact/No Change/Benefit (I/N/B)	
		Existing		Future				2015	2035	2015	2035
		2009 ⁽¹⁾	2010 ⁽²⁾	2015 ⁽²⁾		2035 ⁽²⁾					
		No Build	No Build	No Build	Build	No Build	Build				
R11	N	75	77	78	78	80	80	0	0	N	N
R12	N	71	76	76	76	77	77	0	0	N	N
R13	S	76	76	77	73	79	75	-4	-4	B	B
R14	S	75	82	83	78	85	80	-5	-5	B	B
R15	S	80	83	84	84	87	87	0	0	N	N
R16	S	68	69	70	70	72	73	0	0	N	N
R17	S	78	78	79	79	81	81	0	0	N	N
R18	S	73	72	72	73	74	75	0	0	N	N
R19	S	64	64	65	64	66	66	0	0	N	N

1 Based on measurements in 2009.

2 Based on noise models that were calibrated to the noise measurements from 2009.

3 Because of round-off error, some differences are off by 1 decibel.

EXHIBIT F-2



Figure 3.12-1: Noise and Vibration Measurement Sites

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

The primary noise sources in residential areas north of I-10 were freight trains, Metrolink commuter trains, and traffic noise from the freeway and surface arterials. However, train horns generated the highest noise levels near the road/rail at-grade crossing locations. The noise sources in residential areas south of the I-10 freeway were similar to those north of the freeway; however, there are fewer road/rail at-grade crossings where train horns must be sounded, so there was substantially less horn noise south of the freeway. The one notable exception to this is that most BNSF trains and half of the UPRR trains were observed to sound their horns as they approached the diamond that switches trains onto different tracks at the Colton Crossing. FRA requirements are that, unless a special quiet zone has been established, horns on the lead locomotive must be sounded starting a quarter mile or 20 seconds before any at-grade rail/roadway crossing. The horn is to be sounded in a long-long-short-long pattern with the sequence ending as the lead locomotive clears the grade crossing. The horns are required to generate a sound level of 94 to 105 dBA at a distance of 100 feet in front of the locomotive. The maximum measured sound level from the horns exceeded 100 dBA at two locations near BNSF grade crossings and exceeded 90 dBA at several other locations.

Additional noise sources south of I-10 are trains operating on the connector track in the southeast quadrant of the Colton Crossing and noise from operations in the UPRR yard. Trains operating on the connector track were observed to generate wheel squeal, although lubrication was being used at the time of the measurements that reduced the amount of wheel squeal. More wheel squeal was noticed on the connector track in the northwest quadrant than on the connector track in the southeast quadrant. At this connector track, however, the squeal occurred when the trains passed under the I-10 freeway and where the sensitive receivers are shielded from the squeal noise by the freeway structure.

Short-Term Impacts

As shown in Table 3.12.B, typical noise levels at 50 feet from an active construction area range up to 91 dBA L_{max} during the noisiest construction phases. The site preparation phase, such as soil movement, grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Table 3.12.C shows that the maximum noise impact distance would be 160 feet during construction of the overhead structure and trackwork.

As discussed previously, the construction noise impact threshold being used for this project is a 30-day average L_{dn} of 75 dBA. Assuming that noise-producing construction activities would be largely limited to daytime hours (7 a.m. to 10 p.m.), the impact threshold would not be exceeded as long as the daytime L_{eq} from construction activities is lower than 75 dBA.

It should be noted that it may be necessary to perform some work at night during the course of the project. Examples of the type of work that may be performed would be railroad track and signal cutovers, bridge/culvert construction or replacement that would affect main tracks, or utility work that would need to be performed during off-peak hours. It is anticipated that most construction activities will occur during weekdays, but it is possible that a limited amount of work will be performed at night or on the weekends for safety or logistical reasons.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

Table 3.12.B: Typical Construction Equipment Noise Levels

Equipment Description	L _{max} at 50 feet ⁽¹⁾ (dBA)	Typical Usage Factor ⁽²⁾	Impact Device?
All other equipment > 5 HP	85	50	No
Auger drill rig	85	20	No
Backhoe	80	40	No
Bar bender	80	20	No
Blasting	94	N/A	Yes
Boring jack power unit	80	50	No
Chain saw	85	20	No
Clam shovel	93	20	Yes
Compactor (ground)	80	20	No
Compressor (air)	80	40	No
Concrete batch plant	83	15	No
Concrete mixer truck	85	40	No
Concrete pump truck	82	20	No
Concrete saw	90	20	No
Crane (mobile or stationary)	85	16	No
Dozer	85	40	No
Dump truck	84	40	No
Excavator	85	40	No
Flatbed truck	84	40	No
Front end loader	80	40	No
Generator (25 kVA or less)	70	50	No
Generator (more than 25 kVA)	82	50	No
Gradall	85	40	No
Grader	85	40	No
Horizontal boring hydraulic jack	80	25	No
Hydra break ram	90	10	Yes
Impact pile driver (diesel or drop)	95	20	Yes
Jackhammer	85	20	Yes
Impact hammer (hoe ram)	90	20	Yes
Paver	85	50	No
Pickup truck	55	40	No
Pneumatic tools	85	50	No
Pumps	77	50	No
Rock drill	85	20	No
Scraper	85	40	No
Slurry plant	78	100	No
Slurry trenching machine	82	50	No
Soil mix drill rig	80	50	No
Tractor	84	40	No
Vacuum street sweeper	80	10	No
Vibratory concrete mixer	80	20	No
Vibratory pile driver	95	20	No
Welder/Torch	73	40	No

(1) Sound level when operating at close to maximum load condition.

(2) Percent of work shift that equipment typically is in use.

Source: ATS 2011 Table 16 and FHWA 2006 and Caltrans 2009 as cited in ATS 2011.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

Assuming that when nighttime construction must be performed, the L_{dn} would be dominated by noise during the nighttime hours (10 p.m. to 7 a.m.), the impact threshold would not be exceeded as long as the nighttime L_{eq} from construction activities is less than 69 dBA.

Table 3.12.C also shows the predicted levels of construction noise at the residences in the southwest and southeast quadrants that would be closest to the construction zone. Major construction activities would be approximately 120 to 160 feet from the first row of residences in the southwest quadrant of the diamond crossing. The closest residences in the southeast quadrant would be more than 160 feet from major construction activities. The highest predicted work shift L_{eq} is 79 dBA at the closest residences in the southwest quadrant (between 5th Street and Rancho Avenue) and is 70 dBA at the closest residence in the southeast quadrant.

Table 3.12.C: Noise Impact Distances for Major Construction Phases

Construction Activity	L_{eq} at 50 feet (dBA)	Impact Distance (feet)		Predicted Noise, L_{eq} (dBA)	
		Daytime Construction ⁽¹⁾	Nighttime Construction ⁽²⁾	Southwest Quadrant ⁽³⁾	Southeast Quadrant ⁽⁴⁾
Demolition, clearing and grubbing	85	130	320	78	68
Install drainage improvements	84	120	300	77	68
Site grading	85	130	310	77	68
Foundation work	86	140	360	78	69
Retaining walls	84	120	270	76	67
OH structures	87	160	400	79	70
Trackwork	87	160	400	79	70
Construct signal	82	90	220	74	65
Maximum	87	160	400	79	70

- (1) Impact distance is based on an impact occurring when the work shift L_{eq} would exceed 77 dBA at a sensitive receptor for more than 30 days (equivalent to L_{dn} exceeding 75 dBA when there is limited construction during the nighttime hours of 10 p.m. to 7 a.m.). Estimated impact distances have been rounded to the nearest 10 feet.
- (2) Impact distance is based on an impact occurring when the work shift L_{eq} would exceed 69 dBA at a sensitive receptor for more than 30 days (equivalent to L_{dn} exceeding 75 dBA when there is extensive construction during the nighttime hours of 10 p.m. to 7 a.m.). Estimated impact distances have been rounded to the nearest 10 feet.
- (3) The closest receiver in the southwest quadrant of the Colton Crossing diamond frog is 120 feet from the future construction activities. This quadrant extends from 5th Street to Rancho Avenue.
- (4) The closest receiver in the southeast quadrant of the Colton Crossing diamond frog is 350 feet from the future construction activities.

Table 3.12.C indicates that construction noise is likely to exceed the daytime impact threshold of 77 dBA L_{eq} by approximately 2 decibels at the closest residences in the southwest quadrant but unlikely to exceed the threshold in the southeast quadrant. In addition, when nighttime construction is required, the construction noise is likely to exceed the nighttime impact threshold of 69 dBA by up to 10 decibels in the southwest quadrant and by approximately 1 decibel in the southeast quadrant.

Another potential noise impact during construction would be from trucks on haul routes and accessing the staging areas. The major haul routes would avoid residential areas. This noise has been incorporated into the construction site noise predictions. The one potential access route that could cause noise impacts to adjacent residences is the access along South 5th Street to the potential staging area in the southwest quadrant of the Colton Crossing. It is anticipated that this staging area would be utilized on a limited basis for materials storage and the number of vehicles

Chapter 3 – CEQA CHECKLIST RESPONSES

accessing this staging area would be approximately 10 per day. The noise from these vehicles would be approximately 50 dBA L_{eq} at the residences along South 5th Street, substantially less than the daytime work shift impact threshold of 77 dBA L_{eq} and the nighttime work shift impact threshold of 69 dBA L_{eq} .

With implementation of **Measure NOI-1** indicated below, potential construction noise impacts within the southeast and southwest quadrants would be minimized and are considered less than significant.

Long-Term Impacts

Future noise levels with the no project and proposed project are provided in Table 3.12.A. As shown in Table 3.12.A, 17 of the 19 receptor locations show no change in projected noise levels, while two locations show reductions for one or both of the future horizon years (2015 and 2035). The two sites that show decreases in projected future noise levels corresponded to monitoring sites R13 and R14. Monitoring site R13 shows a 4 dBA reduction by 2015 and 2035. Similarly, monitoring site R14 shows a 5 dBA reduction by 2015 and 2035. The proposed project is expected to reduce noise levels incrementally along the northern rail line by reducing idling that currently results when trains on the northern line wait for trains on the east-west line to pass the diamond interchange.

Completion of the proposed project is expected to have an effect on the use of train horns in the project study area. One location where use of train horns might change as a result of the proposed project is at the diamond crossing. The vast majority of the UPRR trains would use the flyover. The UPRR trains would still sound their horns when there were maintenance workers on the flyover, which would happen less frequently than it does under current conditions. In addition to a reduction in train horn noise, overall noise impacts from the project site would be reduced by reducing the diamond crossing for the mainline tracks from the existing four to two; changing the design of the diamond crossing to a flange-bearing frog design; substantial reduction of UPRR trains using the diamond crossing; and there would be a general reduction in maintenance activities in the area as a result of the proposed project. In addition, incidents involving non-railroad personnel near on the tracks that trigger usage of UPRR horns would be substantially reduced with the proposed project. The proposed project also would tend to reduce horn sounding on the BNSF tracks because there would be less maintenance work at the diamond crossing.

Therefore, the proposed project will result in generally a no long-term noise impact in the project area, and noise levels at several locations will actually be reduced as a result of the proposed rail improvements.

Avoidance, Minimization and/or Mitigation Measures

The following measure will minimize potential construction noise impacts at residences south of the UPRR right-of-way, in particular the residences between Rancho Avenue and 5th Street.

NOI-1 Development of a Noise Control Plan by the contractor will be included in the project specifications approved by UPRR. The contractor will be required to have a qualified acoustical professional develop a Noise Control Plan that demonstrates how the contractor will achieve the noise limits in Table 3.12.D. The plan will include measurements of existing noise, a list of the major pieces of construction equipment that will be used, and predictions of the noise levels at the closest noise-sensitive receptors. The Noise Control Plan prepared by the contractor will be approved by

Chapter 3 – CEQA CHECKLIST RESPONSES

UPRR prior to construction. Measures to be included in the Noise Control Plan shall include, but not be limited to, the following:

- Specific noise limits that shall not be exceeded will be identified. The recommended noise limits are given in Table 3.12.D. Also, the contractor shall be required to conduct noise monitoring to demonstrate compliance with contract noise limits.
- Require the contractor to only use equipment that meets the noise limits in Table 3.12.D.
- Where the construction cannot be performed in accordance with the requirements of the noise limits, the contractor shall be required to investigate alternative construction measures that would result in lower sound levels.
- The contractor shall be required to use the following best management practices for noise abatement whenever practical:
 - Utilize specialty equipment equipped with enclosed engines and/or high performance mufflers, as feasible.
 - Locate equipment and staging areas as far from noise-sensitive receptors as possible.
 - Limit unnecessary idling of equipment. On-site idling shall comply with the CARB mobile source anti-idling requirements (www.arb.ca.gov/msprog/truck-idling/truck-idling.htm).
 - Install temporary noise barriers as needed where feasible.
 - Reroute construction-related truck traffic away from residential streets to the extent permitted by the relevant municipality.
 - Avoid impact pile driving where possible. Current construction plans do not include any impact pile driving.

Table 3.12.D: Recommended Limits on Construction Noise

Land Use	Recommended Maximum Allowable Sound Level, dBA			
	Daytime		Nighttime	
	$L_{eq}^{(a,c)}$	$L_{max}^{(b)}$	$L_{eq}^{(a,d)}$	$L_{max}^{(b)}$
FRA/FTA Category 2, Residential Land Uses (includes hotels/motels, and any other locations where people sleep)	75	85	69	79
FRA/FTA Category 3, Institutional Land Uses (schools, churches, libraries, theaters)	75	85	75 ^(e)	85 ^(e)

Note: These noise limits are applicable at the property line of the affected land use

- (a) L_{eq} is the root-means-square sound level measured over a 20-minute period.
- (b) L_{max} is the maximum instantaneous sound level measured using the "slow" setting on a standard sound level meter.
- (c) If baseline daytime L_{eq} is greater than 70 dBA, the allowable level of construction noise is increased to: Noise Limit = baseline daytime L_{eq} +5 dB. The baseline L_{eq} must be established by measurements of existing noise levels prior to initiation of construction. The minimum measurement period for establishing baseline L_{eq} is 21 days.
- (d) If baseline nighttime L_{eq} is greater than 66 dBA, the allowable level of construction noise is increased to: Noise Limit = baseline nighttime L_{eq} +3 dB. The baseline L_{eq} must be established by measurements of existing noise levels prior to initiation of construction. The minimum measurement period for establishing baseline noise L_{eq} is 21 days.
- (e) For noise-sensitive facilities with primarily daytime use, there are no nighttime noise limits unless the facility is in use. The daytime noise limits apply when the facility is in use during nighttime hours.

Source: Table 23, ATS 2011

EXHIBIT F-2

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Vibration Thresholds

Operational Threshold. The FRA/FTA has issued guidance on how to assess vibration impacts for a corridor that already is heavily used.

- If the project will not cause a significant increase in the number of vibration events and the project will result in vibration levels that are at no more than 5 decibels greater than the existing vibration, the existing train traffic can be ignored and the standard vibration impact thresholds can be applied. A significant increase in rail traffic is defined by FRA and FTA as an approximate doubling of the number of trains.
- If the project would cause the existing rail tracks to be relocated closer to sensitive receivers, impact occurs if the relocation would result in at least a 3 decibel increase in vibration levels and the resulting vibration level would exceed the FRA/FTA impact threshold.

This means that the condition under which vibration impact could occur for the proposed project is that the predicted vibration levels exceed the existing vibration levels by at least 3 decibels and exceed the applicable impact threshold (72 VdB).

Construction Threshold. The FTA/FRA uses two thresholds for assessing impacts from construction vibration. The first is a peak particle velocity (PPV) of 0.5 in/sec, which is considered a safe vibration level to avoid even minor cosmetic damage to typical residential structures. The predicted vibration levels are well below this limit at a distance of 25 feet from the construction equipment.

The second threshold is based on the potential for the vibration to be annoying and intrusive to building occupants. For this effect, the FTA and FRA manuals recommend using the same impact thresholds that are used to assess impacts from train vibration. The FRA/FTA impact threshold from train vibration is 72 VdB for residential land uses, which translates to a PPV of 0.016 in/sec.

Existing Conditions

The existing vibration environment in the study area is very similar to the noise environment and is dominated by freight and passenger trains on the BNSF and UPRR tracks and vehicular traffic on the I-10 freeway. The use of horns as trains approach at-grade road/rail crossing is by far the loudest noise source in the study area. Other rail-related vibration sources are the locomotive engines, the rail cars, when trains traverse the tight radius curves of the connection tracks in the northwest and southeast quadrants of the Colton Crossing, wheel impacts at turnouts, crossovers and the diamond crossing, and various activities within the UPRR yard. Table 3.12.E illustrates the existing modeled vibration levels. Ambient vibration in the project area was dominated by the train pass-bys.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

Table 3.12.E: Summary of Vibration Impact Analysis

Receiver	Vibration Velocity Level, L_{max} (VdB)				Impact/ No Impact / Benefit (I/N/B)
	Existing (2010) & Future No Build (2015 & 2035)	Future Build (2015 & 2035)	Build - No Build (2015 & 2035)	Impact Threshold	
R1	62	62	0	N/A	N
R2	84	84	0	N/A	N
R3	87	87	0	N/A	N
R4	76	76	0	N/A	N
R5	73	73	0	N/A	N
R6	83	83	0	N/A	N
R7	86	86	0	N/A	N
R8	70	70	0	N/A	N
R9	72	72	0	N/A	N
R10	69	69	0	N/A	N
R11	72	72	0	N/A	N
R12	69	69	0	N/A	N
R13 ¹	85	66	-19	N/A	B
R14	76	67	-9	N/A	B
R15	73	73	0	N/A	N
R16	73	73	0	N/A	N
R17	86	86	0	N/A	N
R18	77	77	0	N/A	N
R19	69	69	0	N/A	N

¹ Assumes that the special trackwork on the existing tracks would be replaced with flange-bearing frogs and would be used only by a limited number of trains for local movements. The majority of the trains would use the UPRR mainline on the flyover, which would have no special trackwork.

Source: ATS 2011

Short-Term Impacts

The two construction operations most likely to cause building damage are blasting and pile driving, neither of which would be used during construction of the proposed project. Other activities, such as the use of tracked vehicles (e.g., bulldozers) and vibratory compactors, could result in perceptible levels of groundborne vibration; however, these activities would be limited in duration and vibration levels are well below thresholds for minor cosmetic building damage.

Table 3.12.F shows the approximate vibration velocity level at 25 feet for the equipment expected to generate the highest vibration levels during each construction phase.

Table 3.12.F: Construction Vibration Velocity Levels

Construction Activity ^(a)	Most Vibratory Equipment	Reference Equipment	Ref PPV @ 25 feet (in/sec)	Approximate Distance to PPV of 0.016 in/sec ^(b)
Demolition, clearing and grubbing	Bulldozer (Cat D-7)	Large Bulldozer	0.089	80 feet
Install Drainage Improvements	Compaction Machinery	Vibratory Roller	0.21	140 feet
Site Grading	Compactor	Vibratory Roller	0.21	140 feet
Foundation Work	Crane-mounted Drill	Caisson drilling	0.089	80 feet

Chapter 3 – CEQA CHECKLIST RESPONSES

Table 3.12.F: Construction Vibration Velocity Levels

Construction Activity ^(a)	Most Vibratory Equipment	Reference Equipment	Ref PPV @ 25 feet (in/sec)	Approximate Distance to PPV of 0.016 in/sec ^(b)
Trackwork	Compactor	Vibratory Roller	0.21	140 feet
Construct Signal	Boring Machine	Caisson drilling	0.089	80 feet

(a) Construction Activities A, F, G, and I are not anticipated to require use of high-vibration generating equipment.

(b) Distance at which the FRA/FTA vibration annoyance threshold of 72 VdB is reached.

Source: Table 22, ATS 2011

As discussed previously, there are two thresholds for impact from construction vibration. The first is a PPV of 0.5 in/sec, which is considered a safe vibration level to avoid even minor cosmetic damage to typical residential structures. As shown in Table 3.12.I, the predicted vibration levels are well below this limit at a distance of 25 feet from the construction equipment.

The second threshold is 72 VdB for residential land uses, which translates to a PPV of 0.016 in/sec. As shown in Table 3.12.I, a PPV of 0.016 in/sec could occur at distances of about 140 feet from a vibratory compactor. This means that some construction processes have the potential to generate vibration levels that exceed the limits for annoyance at the residences south of the construction site and west of the BNSF tracks (between Rancho Avenue and 5th Street). It is important to recognize that although these vibration levels may be perceptible inside residences, they are well below what is required to cause structural damage or even minor cosmetic damage. Potential construction vibration impacts within the southwest quadrant of the existing crossing would be minimized with implementation of **Measure NOI-1** and are considered less than significant levels.

Long-Term Impacts

Similar to the conclusions reached regarding project noise, 17 of the 19 sensitive receptor locations show no increase in projected vibration levels, while two locations show reductions for one or both of the future horizon years (2015 and 2035). The calculations for each receptor site are shown in Table 3.12.E. The two monitoring sites that showed decreases in projected future vibration levels are R13 and R14, as shown in Figure 3.12-1. Monitoring site R13 shows a 19 dBA reduction by 2015 and 2035, while the R14 shows a 9 dBA reduction by 2015 and 2035. Therefore, the proposed project will not result in any increases in long-term vibration levels in the project area for the majority of receptors, and vibration levels at two locations will be reduced after construction of the proposed rail improvements. The proposed project would have no effect on vibration levels at most locations, and would result in a beneficial reduction in vibration levels at residences between Rancho Avenue and 5th Street.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. The previous analysis in Checklist Response XII(a) determined that the proposed project would not increase long-term noise levels compared to applicable thresholds and standards. In some locations, long-term noise levels would actually be reduced by

Chapter 3 – CEQA CHECKLIST RESPONSES

eliminating horn noise, and reducing delay at the Colton Crossing and at-grade crossings north of the I-10 freeway.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact The previous analysis in Checklist Response XIII(b) determined that the proposed project would result in a short-term increase in noise levels compared to applicable thresholds and standards, especially in those residential neighborhoods immediately south of the Colton Yard. These levels would be minimized with implementation of **Measure NOI-1** (page 90). These construction noise levels are considered less than significant.

Avoidance, Minimization and Mitigation Measures

Implementation of **Measure NOI-1** will minimize the adverse impacts of construction noise from the proposed project.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The closest airport to the project site is the San Bernardino International Airport (SBIA). According to the “Airport Influence Area Map” on the SBIA website, the proposed project site is located 2.7 miles southwest of SBIA and is not within the influence area of that facility. Therefore, the proposed project will not have any effect on, or be affected by, any airport operations (SBIA website 2010).

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The project site is not located within two miles of a private airstrip, so there would be no noise impacts associated with private airstrips.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

EXHIBIT F-2

Chapter 3 – CEQA CHECKLIST RESPONSES

XIII. POPULATION AND HOUSING

a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

No Impact. Under CEQA, growth inducement is not necessarily considered detrimental, beneficial, or of little significance to the environment. Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth related effects of a project are considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

The proposed project does not warrant the expansion of existing utility (e.g., water and wastewater treatment) facilities in the project area. In addition, the proposed project does not include a residential or commercial component; therefore, there would be no increase in population from implementation of the proposed project. Therefore, the development of the proposed project would not induce growth in an area currently devoid of public improvements, or promote the extension of infrastructure in a manner facilitating an uneven pattern (e.g., leapfrog development) of development in the City.

The proposed project would result in the provision of a continuous UPRR rail line along the existing rail corridor through the construction of a rail flyover. The proposed project is not expected to affect local growth beyond what is identified in the City of Colton and San Bernardino County General Plans since there would be no property acquisition within the project area (with the exception of the Department parcel acquisition) and there is no railroad-associated development occurring within the existing rail yards or adjacent properties. Growth in the City of Colton and San Bernardino County is expected to occur with or without the proposed project because the proposed project on its own cannot affect variables such as economic opportunities, employment, or housing availability, which directly affect local and regional development growth.

The proposed project's effect on rail growth was evaluated as part of the *Rail Operations Analysis* (February 2011). As documented in the Rail Operations Analysis, trains operating on the BNSF and UPRR main lines at Colton Crossing consist of freight trains of BNSF and UPRR, commuter passenger trains operated by Metrolink (the Southern California commuter rail operations authority), and long-distance passenger trains operated by Amtrak. As described in the Rail Operations Analysis, port traffic contribution to total rail traffic through the Colton Crossing is expected to remain proportional to other rail traffic through Colton Crossing as outlined for existing conditions.

The proposed project would maintain the same number of mainline tracks as existing today. Additionally, the Rail Operations Analysis confirmed that there is adequate capacity of the rail infrastructure within the model limits, for the train characteristics, schedules, and frequencies provided by BNSF, UPRR, Metrolink, and Amtrak, for the train volumes for each of the three analysis years (2010, 2015, and 2035), in both the existing and proposed conditions. Therefore, the growth in train volumes is the same for both the existing and proposed project conditions. As

Chapter 3 – CEQA CHECKLIST RESPONSES

the type and intensity of use proposed for the project site is consistent with the existing pattern and practice of development in the project area, and because the improvements necessary for development of the site would not facilitate growth that has not been anticipated in the project area, no growth-related impacts would occur.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The site is currently developed with existing railroad tracks. Construction of the proposed project does not require the demolition of any existing residential use and would not result in the displacement of residents in the area. Since no relocation of residents or construction of replacement housing is required, no impacts to existing housing would occur.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. Please refer to Checklist Response XIII(b).

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Response time is the period of time between when a call is received by a dispatcher and the arrival of a fire protection unit or a police patrol car. The response time varies depending upon the nature of the call. Typical calls are prioritized based upon the urgency of the incident. The average emergency call response time for a fire or police unit that includes the subject project site is less than five minutes. Other response times will vary depending on the level of priority in conjunction with the availability of a fire or police unit.

Fire Protection. Fire protection services for the project area are provided by the City of Colton Fire Department (CFD) with “mutual aid” services readily available from the San Bernardino County Fire Department. The CFD is responsible for providing fire suppression, emergency medical services, technical rescue, fire prevention, weed abatement, and disaster preparedness

Chapter 3 – CEQA CHECKLIST RESPONSES

services to the City of Colton. These services are provided by four (4) fire stations strategically located throughout the City, which results in average response times of less than six minutes. Fire services are managed through the following three divisions: Operations, Fire Safety, and Disaster Preparedness. The closest CFD fire station to the project site is Fire Station 211 located at 303 East E Street, which is approximately 0.34 mile northeast of the project site (LSA 2011)(CFD 2010).

Police Protection. Police protection services to the project area are provided by the City of Colton Police Department (CPD), which receives all calls at the main station located at 650 North La Cadena Drive approximately 0.45 mile north of the project area. The CPD also has a mutual aid agreement with all adjacent cities as a primary resource, and with the County of San Bernardino Sheriff-Coroner Department as a secondary resource. The mission of the CPD is to protect life and property, solve neighborhood problems, and enhance the quality of life in the community.

Other Protective Services. The California Highway Patrol (CHP) has jurisdiction on freeways in California, including I-10. The nearest CHP office to the project site is located at 2211 Western Avenue in San Bernardino, approximately 35 miles northeast of the project area. This facility is the west San Bernardino Valley office that serves the Cities of Colton, Fontana, Rialto, San Bernardino, Loma Linda, and the unincorporated communities of Bloomington and Crestmore.

Other law enforcement in the project area includes the UPRR police force. UPRR police officers are commissioned in the states in which the UPRR has right-of-way. Officers also carry federal commissions issued by the USDOT, enabling UPRR officers to conduct intrastate law enforcement operations. The UPRR Police Department is certified by the California Commission on Peace Officers Standards and Training, and officers meet the same standards as any other sworn peace officer. The UPRR Police also respond to reports of hazardous materials accidents along its right-of-way, as well as railroad crossing and personal injury accidents. UPRR Police officers, working with UPRR Hazardous Materials Specialists, assist local agencies during railway spills and accidents, providing critical liaison between the railroad, shipping company and local police and fire departments. This group has almost immediate response times to any accidents or activity requiring their services on the project site.

Fire Protection?

Less Than Significant Impact. The proposed project does not include a residential component and would not contribute to a direct increase in population. Fire protection services are already provided to the proposed project site and surrounding neighborhood. Implementation of the proposed project would not increase the population of the existing service area and would therefore not generate an additional demand for fire protection services. Furthermore, the proposed project would not necessitate any road closures nor would construction of the proposed structure impede any existing circulation routes in the area. Operation of the proposed project would not affect fire protection services.

During construction, incremental delay in the delivery of services may occur on local roadways, including slightly longer fire and police response times. No detours are anticipated for this project except for temporary closures necessary for the construction staging. Temporary lane reductions or closures may occur when barriers are being moved into position, when lanes are being restriped, when falsework is being installed or removed, or when the rail lines are being restored to their completed conditions. These temporary closures would likely be limited to non-peak travel hours, and would not adversely affect accessibility to residential or commercial land uses.

Chapter 3 – CEQA CHECKLIST RESPONSES

The City of Colton and San Bernardino County Fire Departments would be notified of all temporary road closures during the all phases of the construction. Construction of the proposed project would not affect fire protection services.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

Police Protection?

Less Than Significant Impact. As previously stated, the proposed project does not include a residential component and would not contribute to a direct increase in population. Police protection services are already provided to the proposed project site and surrounding neighborhood. Implementation of the proposed project would not increase the population of the existing service area and would therefore not generate an additional demand for police protection services. In addition, the railroads have their own security staff that monitors the railway and rail facilities. Furthermore, the proposed project would not necessitate any road closures nor would construction of the proposed structure impede any existing circulation routes in the area. Operation of the proposed project would not affect police protection.

As previously noted, during construction incremental delay in the delivery of services may occur on local roadways, including slightly police response times. No detours are anticipated for this project except for temporary closures necessary for the construction staging. Temporary reductions or closures may occur when barriers are being moved into position, when lanes are being restriped, when falsework is being installed or removed, or when the rail lines are being restored to their completed conditions. These temporary closures would likely be limited to non-peak travel hours, and would not adversely affect accessibility to residential or commercial land uses. The City of Colton and San Bernardino County Police/Sheriff Departments would be notified of all temporary road closures during the all phases of the construction. Construction of the proposed project would not affect police protection services.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

Schools?

Less Than Significant Impact. The proposed project consists of a railway improvement project and will not consist of building residential units that would house school-aged children. It is anticipated that the implementation of the proposed project would not affect schools in the nearby area as the project is a railway improvement and would not generate additional students and would not reduce the level of service at school facilities. Operation of the proposed project would not affect school facilities or activities.

It is anticipated that construction activities and vehicles would not hinder the passage of school buses on local streets as the construction phase of the proposed project would not necessitate any road closures. Intermittent temporary lane closures on La Cadena Drive will be required to construct the new bridge over the roadway. As part of the Transportation Management Plan, discussed in Section XVI, the Colton Unified School District would be notified of any closures. Implementation of the **Measure TRA-1** (page 109) would minimize potential effects on school routes. Potential short term construction impacts on schools are considered less than significant.

Chapter 3 – CEQA CHECKLIST RESPONSES

Avoidance, Minimization and Mitigation Measures

Implementation of **Measure TRA-1** will minimize potential effects on school routes.

Parks?

No Impact. As previously stated, the proposed project does not include a residential component and would not contribute to a direct increase in population. As there is no direct increase in population resulting from the proposed project, no new demand on existing park facilities would occur. Therefore, the proposed project would not affect parks.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

Other Public Facilities?

No Impact. As previously stated, the proposed project does not include a residential component and would not contribute to a direct increase in population. As there is no direct increase in population resulting from the proposed project, no new demand on other public facilities such as library or hospital services would occur.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

XV. RECREATION

a) Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. As previously stated, the proposed project does not include a residential component and would not contribute to a direct increase in population. As there is no direct increase in population resulting from the proposed project, no new demand on existing neighborhood or regional park facilities would occur. Therefore, no impacts to recreational facilities would occur with implementation of the Build Alternative.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. As previously stated, the proposed project does not include a residential component and would not contribute to a direct increase in population. As there is no direct increase in population resulting from the proposed project, no new demand on existing park facilities would occur. In addition the proposed project is a railway improvement project and does not include a

Chapter 3 – CEQA CHECKLIST RESPONSES

recreational component. Therefore, no impacts to recreational facilities would occur with implementation of the Build Alternative.

Avoidance, Minimization and Mitigation Measures

No mitigation is required.

XVI. TRANSPORTATION AND TRAFFIC

Project impacts have been assessed for potential impacts on vehicular traffic and rail traffic. This section is based in part the *Colton Crossing Grade Separation Vehicular Traffic Study* prepared by Iteris and dated February 2011 and the *Rail Operations Analysis* prepared by HDR Engineering, Inc., dated February 2011.

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

Less Than Significant Impact. During construction, trains would utilize the existing mainline tracks. Once the structure is complete, the tracks will be incrementally moved onto the flyover. The southerly mainline track will remain as a connector track between UPRR yards and BNSF Mainlines. The proposed project would result in no temporary disruption of rail traffic and no mitigation is required.

Peak construction vehicle activity was determined to be in year 2012. The traffic study forecast levels of service for the 25 study intersections in peak construction year 2012 and determined that the 9th Street/I-10 Eastbound Ramps intersections would operate at an unacceptable level (LOS F). With the addition of project construction traffic, this intersection would further degrade. Implementation of Measure TRA-2 (page 110) would minimize impacts to this intersection. Additionally, intermittent temporary lane closures on La Cadena Drive would be required to construct the railroad bridge over La Cadena Drive which could affect local access north and south of the I-10 on La Cadena. Implementation of **Measure TRA-1** (page 109) would minimize impacts associated with construction phasing. Potential impacts to local arterials are considered less than significant.

Vehicular Traffic

No Impact. The Vehicular Traffic Study studied existing traffic conditions (2010), construction staging (2012) traffic conditions, opening year (2015) traffic conditions, and forecast year (2035) traffic conditions. Impacts from the proposed project during construction and on opening year (2015) and forecast year (2035) traffic conditions were assessed. The traffic study area for the analysis of the proposed project traffic impacts and benefits includes 25 intersections and 5 at-grade rail crossings.

The City of Colton General Plan identifies a minimum intersection level of service standard of Level of Service (LOS E); however, the City is in the process of updating its General Plan, and the level-of-service standard may be revised to LOS D or better for acceptable intersection

Chapter 3 – CEQA CHECKLIST RESPONSES

operations. Consequently, intersections operating at LOS E or F are considered unsatisfactory. This standard is applied to all study intersections, including City intersections as well as joint City/Caltrans intersections where freeway ramps terminate.

Existing Conditions.

Table 3.16.A identifies existing levels of service at the study intersections.

Table 3.16.A: Levels of Service at Study Area Intersections

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay	LOS	Delay
1. Pennsylvania Avenue/Laurel Street	C	16.1	A	9.9
2. 8 th Street/Laurel Street	A	2.0	A	2.4
3. La Cadena Drive-Bordwell Avenue/Laurel Street	C	31.2	C	29.4
4. Pennsylvania Avenue/Olive Street	B	14.1	B	10.0
5. 7 th Street/Olive Street	A	3.3	A	2.7
6. La Cadena Drive/Olive Street	B	10.7	B	10.3
7. Pennsylvania Avenue/E Street	A	3.9	A	2.4
8. 7 th Street/E Street	A	9.0	A	8.4
9. Pennsylvania Avenue/H Street	A	10.0	A	4.7
10. 7 th Street/H Street	B	11.1	A	9.5
11. La Cadena Drive/H Street	A	9.7	A	9.4
12. Rancho Avenue/Valley Boulevard	C	34.9	C	31.4
13. 3 rd Street/Valley Boulevard	C	21.6	B	15.8
14. Pennsylvania Avenue/Valley Boulevard	A	3.2	A	1.7
15. 7 th Street/Valley Boulevard	A	8.0	A	4.1
16. La Cadena Drive/Valley Boulevard	D	36.0	C	32.0
17. 9 th Street/Valley Boulevard	C	32.8	C	34.2
18. Rancho Avenue/I-10 Westbound Ramps	C	20.6	B	18.7
19. Rancho Avenue/I-10 Eastbound Ramps	C	27.8	C	34.5
20. 9 th Street/I-10 Westbound Off-Ramp	A	4.3	A	4.8
21. 9 th Street/I-10 Eastbound Ramps	C	23.6	E	45.9
22. 9 th Street/L Street	A	7.1	A	7.1
23. 9 th Street/M Street	A	7.8	A	7.9
24. 9 th Street/N Street	A	7.2	A	7.0
25. 9 th Street/O Street	A	7.3	A	7.5

As identified in Table 3.16.A, the 9th Street/I-10 Eastbound Ramps intersection is currently operating at an unsatisfactory LOS during the p.m. peak hour.

The traffic study calculated existing gate downtime (hourly average in minutes) at the five crossing ranging from 9.65 minutes per hour to 11.65 minutes per hour.

Opening Year 2015 and Opening Year 2035 Impacts.

The traffic study forecast intersection levels of service for the 25 study area intersections in Opening Year 2015, Opening Year 2015 with Project, Forecast Year 2035, and Forecast Year 2035 with Project conditions. The proposed project does not have a vehicular trip generation

Chapter 3 – CEQA CHECKLIST RESPONSES

component. For this reason, project impacts were identified by determining whether or not the change in gate down times at at-grade rail crossings attributable to the proposed project's effect on rail traffic would in turn cause redistribution of existing/year 2015/year 2035 baseline trips (i.e., without project) to alternative travel routes within the traffic study area (see *Colton Crossing Grade Separation Vehicular Traffic Study*, page 39).

Analysis of potential redistribution was conducted by inputting rail crossing delays from the Rail Traffic Controller (RTC) train dispatching simulation model provided in the Rail Operations Study to SCAG's RTP Travel Demand Model. Based on the modeling results, it was determined that overall gate down time would be reduced in the "with project" conditions for both year 2015 and 2035. In the immediate project vicinity, gate down times were forecast to decrease at the Olive Street crossing and increase slightly at the Valley Boulevard crossing. However, trip redistribution would not occur because the change in delays in the project vicinity will not cause traffic redistribution within the intersection study area. For example, the Opening Year 2015 reduction in delay at the Olive Street crossing is estimated to be approximately 1.4 minutes per train crossing during peak hours while the increase in delay at the Valley Boulevard crossing is estimated to be approximately 0.1 minutes (six seconds) per train during peak hours. These minimal decreases and increases in delay would not cause traffic to divert or redistribute to alternative routes within the traffic study area. Therefore, the Opening Year 2015 and Forecast Year 2035 "with and without" traffic volumes were determined to be the same. Similarly, the Opening Year 2015 and Forecast Year 2035 "with and without" level of service calculations are the same. The proposed project would have no impact on traffic distribution.

Rail Traffic

Less Than Significant Impact. The rail operations study quantifies rail operations outcomes resulting from the proposed project. The rail operations study used the RTC model, mentioned previously, to measure changes in train operations. The RTC model was used because it is widely used, understood, and it accurately measures all of the desired rail operations outcomes in the study.

The rail operations study assessed rail operations outcomes for existing rail traffic conditions (2010), opening year (2015) rail traffic conditions, and forecast year (2035) rail traffic conditions. Impacts from the proposed project on opening year and forecast year rail traffic conditions were assessed.

The rail study area for the analysis of the proposed project rail impacts and benefits included all at-grade road/rail crossings located along the following rail segments:

- BNSF Cajon Subdivision: Summit (Cajon Pass) to San Bernardino.
- BNSF San Bernardino Subdivision: San Bernardino to Riverside.
- UPRR Yuma Subdivision: Beaumont to West Colton.
- UPRR Alhambra Subdivision: West Colton to Pomona.
- UPRR Los Angeles Subdivision: Riverside to Pomona.

Future Train Volumes. Growth in train volumes within the modeling area is projected to occur in the future (both 2015 and 2035). Projected future train volumes are shown in Table 1.1.A and were developed using growth rates provided by the UPRR and BNSF. Future train volume growth rates and the effect of the Ports of Los Angeles and Long Beach on these growth rates are described below.

Chapter 3 – CEQA CHECKLIST RESPONSES

Freight train volume growth. BNSF and UPRR expect freight train traffic through Colton Crossing to grow at a 2.71 percent annual rate, compounded, from the present through 2035. (Train volume fluctuations around this average may occur on a weekly, seasonal, and yearly basis as a result of general economic conditions, changes in market demands for products carried by trains, and other conditions.) BNSF and UPRR provided this consensus compound annual growth rate (CAGR) for freight trains based on historic trends and economic growth predictions supplied by the firm Global Insights, Inc. According to UPRR and BNSF, the CAGR for the 20-year period covering 1989–2008 equaled 3.08 percent. The CAGR for the 10-year period covering 1999–2008 equaled 2.28 percent. An annual growth rate equaling 2.71 percent is justified due to the following factors:

- Projected growth rate falls in line with intermediate and long-term car loading trends;
- Positive prospects for freight rail going forward;
- Environmentally friendly mode of transportation;
- Conversion of truck freight to rail as a result of overall highway congestion;
- Recovery of overall economy; and
- Above average population growth projections for Southern California.

Port traffic growth. As described above, movement of goods between the Los Angeles and Long Beach Ports and domestic shippers and receivers represents approximately 28 percent of existing trains moving through the Colton Crossing. Port traffic contribution to total rail traffic through Colton Crossing is expected to remain proportional to other rail traffic through Colton Crossing. This assumption is documented by port and modal elasticity studies conducted by Leachman and Associates and the University of California, Berkeley for the Southern California Association of Governments (SCAG) in 2005 and was recently updated (Source: Port and Modal Elasticity Study, Phase II). These studies measured elasticity of demand for import and export containerized goods traffic through the ports compared to alternative ports serving the same inland U.S. markets.

Existing Conditions. Between 70 and 90 freight trains per day travel through the crossing at present (measured during the period of July 25 to August 3, 2010). The approximate proportion of each train type at present per day is as follows:

- **5% bulk trains:** Most of these trains deliver commodities to receivers within the Los Angeles Basin.
- **5% local trains:** These trains primarily move freight brought to Los Angeles Basin switching yards by manifest trains, to local shippers and receivers.
- **20% manifest trains:** These trains primarily move freight that will be delivered to receivers or picked up from shippers that are located in the Los Angeles Basin.
- **70% intermodal trains:** Approximately 60 percent of the freight carried by these trains moves between domestic U.S. shippers and receivers. The remaining 40 percent, equating to 28 percent of the trains, moves between the Ports of Los Angeles and Long Beach, and domestic shippers and receivers.

Chapter 3 – CEQA CHECKLIST RESPONSES

- Small volumes of traffic originating in or destined to Mexico pass through Colton Crossing.

Table 13.6.B presents existing train volumes.

Table 13.6.B: Existing and Forecast Train Volumes and Delay¹

	Existing (2010)	2015	2035
<i>Weekly Train Volume²</i>			
Freight	866	987	1,680
Passenger	76	76	76
All	942	1,063	1,756
<i>Daily Train Volume²</i>			
Freight	124	141	240
Passenger	11	11	11
All	135	152	251

¹ Within modeling area.

² Total average train volumes include all trains within the model limits. Some of these trains do not pass through Colton Crossing, such as local trains that move between various yards, and trains that travel between UPRR's Mojave Subdivision and Alhambra Subdivision. These trains influence trains that travel through Colton Crossing, thus must be included in the model to provide accurate results.

Source: Rail Operations Analysis, February 2011

Train Delay and Train Idling Caused by the Colton Crossing. Train delay is strongly influenced by the Colton Crossing in the existing conditions. Train delay is expressed in terms of cumulative idling time and cumulative train time within the model limits. Cumulative idling time refers to the total amount of time that trains spend idling within the model area waiting to complete their travel in or through the model area. Idling can occur on mainline tracks, connection tracks or in rail yards within the model area. The cumulative train time within the model limits refers to the total time that a train takes to pass through the model area or reach a destination within the model area. Previously referenced Table 3.16.C illustrates the cumulative idling time, which indicates the level of delay of train movement within the modeling area. For the existing condition, the cumulative idling time within the model area on a weekly basis is 19 days; 8 hours and 23 minutes, which translates to 29.6 minutes per train on average. The train delay is forecast to increase in future conditions without the proposed project as shown in Table 3.16.C. In 2015, cumulative idling time is 30 days, 16 hours and 1 minute on a weekly basis, which translates to 41.5 minutes per train on average. By 2035, the cumulative idling time increases substantially to 522 days, 6 hours and 8 minutes on a weekly basis, which is 428 minutes (or 7 hours and 8 minutes) per train on average. In particular, westbound trains were observed in the rail model to accumulate on the UPRR Yuma Subdivision east of the Colton Crossing, waiting on clearance through the Colton Crossing. During peak periods, as many as five westbound trains were observed to be waiting either on the mainline at the crossing or in the vicinity of crossing in the 2015 condition. This condition would continue in 2035 with the predicted increase in train volumes and cumulative idling time.

EXHIBIT F-2