# DRAFT
# ENVIRONMENTAL IMPACT REPORT
# PERRIS VALLEY LINE
# RIVERSIDE COUNTY, CALIFORNIA

**State Clearinghouse No. 2009011046**

**VOLUME 2 OF 2**

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**Riverside County Transportation Commission**

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**April 5, 2010**
**Revised: July 2011**

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Appendix B Notice of Preparation and Initial Study Checklist
Appendix C Grade Crossing Modifications Table
Appendix D LESA Model Calculations
Appendix E Agency Communication Log

**TECHNICAL REPORTS** (located on enclosed CD)
A San Jacinto Branchline/I-215 Corridor Study Alternatives Analysis
B Air Quality Technical Report
C Noise and Vibration Technical Report
D Traffic Technical Report
E Habitat Assessment Report
F Jurisdictional Determination
G Hazardous Materials Corridor Study – SJBL Segment
H Zeta Tech Report

## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AA | Alternatives Analysis |
| AB | Assembly Bill |
| ADA | Americans with Disabilities Act |
| AE | Applied EarthWorks, Inc. |
| AGR | Agricultural Supply |
| ALUC | Airport Land Use Commission |
| AP Act | Alquist-Priolo Earthquake Fault Zoning Act |
| APZ | Accident Potential Zone |
| AREMA | American Railway Engineering and Maintenance-of-Way Association |
| AST | Above Ground Storage Tank |
| AT&SF | Atchison Topeka & Santa Fe Railroad |
| | |
| BFE | Base Flood Elevation |
| BMP | Best Management Practices |
| BNSF | Burlington Northern Santa Fe |
| | |
| CAA | Clean Air Act |
| CAAQS | California Ambient Air Quality Standards |
| CARB | California Air Resources Board |
| CDC | California Department of Conservation |
| CDFFP | California Department of Forestry and Fire Protection |
| Caltrans | California Department of Transportation |
| CBC | California Building Code |
| CCR | California Code of Regulations |
| CDFG | California Department of Fish and Game |
| CDWR | California Department of Water Resources |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CETAP | Community and Environmental Transportation Acceptability Process |
| CFR | Code of Federal Regulations |
| CGP | Construction General Permit |
| CGS | California Geologic Survey |
| CO | Carbon Monoxide |
| $CO_2$ | Carbon Dioxide |
| CP | Control Point |
| CPUC | California Public Utilities Commission |
| CRHR | California Register of Historical Resources |
| CWA | Clean Water Act |
| | |
| DAMP | Drainage Area Management Plans |
| dB | Decibel |
| dBA | A-Weighted Decibel |
| DTSC | Department of Toxic Substances Control |

## ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| EDR | Environmental Database Report |
| EIR | Environmental Impact Report |
| EO | Executive Order |
| EMWD | Eastern Municipal Water District |
| ESA | Endangered Species Act |
| | |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FIRM | Flood Insurance Rate Maps |
| FMMP | Farmland Mapping and Monitoring Program |
| FPPA | Farmland Protection Policy Act |
| FR | Federal Register |
| FRA | Federal Railroad Administration |
| FTA | Federal Transit Administration |
| | |
| GBN | Ground-Borne Noise |
| GBV | Ground-Borne Vibration |
| GCOR | General Code of Operating Rules |
| GHG | Greenhouse Gas |
| GWR | Groundwater Recharge |
| | |
| HABS | Historic American Buildings Survey |
| HAER | Historic American Engineering Record |
| HALS | Historic American Landscape Survey |
| HCP | Habitat Conservation Plan |
| HMCS | Hazardous Materials Corridor Study |
| HOV | High-Occupancy Vehicle |
| HWCL | Hazardous Waste Control Law |
| | |
| I-215 | Interstate 215 |
| IB | Inbound side of track |
| ICBO | International Conference of Building Officials |
| IND | Industrial Service Supply |
| IS | Initial Study |
| | |
| JPA | March Joint Powers Authority |
| | |
| LAFCO | Local Agency Formation Commission |
| LA Union Station | Los Angeles Union Station |
| $L_{dn}$ | Day-night average sound level |
| $L_{eq}$ | Equivalent noise level |
| $L_{eq(h)}$ | Hourly value of equivalent noise level |
| LESA | Land Evaluation Site Assessment |
| LOS | Level of Service |
| LPA | Locally Preferred Alternative |

## ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| MAFB | March Air Force Base |
| MARB | March Air Reserve Base |
| MBTA | Migratory Bird Treaty Act |
| MDP | Master Drainage Plan |
| MF | Multi-Family Residence |
| MFA | Myra L. Frank & Associates, Inc. |
| MLD | Most Likely Descendent |
| MND | Mitigated Negative Declaration |
| MP | Mile Post |
| mph | Miles per hour |
| MRZ | Mineral Resource Zone |
| MSAT | Mobile-Source Air Toxics |
| MSHCP | Multiple Species Habitat Conservation Plan |
| MS4 | Municipal Separate Storm Sewer Systems |
| MUN | Municipal and Domestic Supply |
| | |
| NAAQS | National Ambient Air Quality Standards |
| NAHC | Native American Heritage Commission |
| NCCP | Natural Community Conservation Plan |
| NCSS | National Cooperative Soil Survey |
| NEPA | National Environmental Policy Act |
| NFIP | National Flood Insurance Program |
| NMFS | National Marine Fisheries Service |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |
| $NO_2$ | Nitrogen Dioxide |
| $NO_X$ | Nitrogen Oxide |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| | |
| $O_3$ | Ozone |
| OB | Outbound Travel |
| O&M | Operating and Maintenance |
| | |
| Pb | Lead |
| $PM_{10}$ and $PM_{2.5}$ | Particulate Matter |
| POAQC | Projects of Air Quality Concern |
| ppm | Parts per Million |
| PRC | Public Resources Code |
| PRPA | Paleontological Resources Preservation Act |
| PROC | Industrial Process Supply |
| PTC | Positive Train Control |
| PVL | Perris Valley Line |
| PVRWRF | Perris Valley Regional Water Reclamation Facility |

## ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| RCA | Western Riverside County Regional Conservation Authority |
| RCFCWCD | Riverside County Flood Control and Water Conservation District |
| RCDEH | Riverside County Department of Environmental Health |
| RCHCA | Riverside County Habitat Conservation Agency |
| RCIP | Riverside County Integrated Project |
| RCLIS | Riverside County Land Information System |
| RCRA | Resource Conservation and Recovery Act |
| RCTC | Riverside County Transportation Commission |
| REC-1 | Water Contact Recreation |
| REC-2 | Non-contact Recreation |
| ROC | Reactive Organic Compounds |
| ROW | Right-of-way |
| RPUD | Riverside Public Utilities Department |
| RPWD | Riverside Public Works Department |
| Rte | Route |
| RTA | Riverside Transit Agency |
| RTIP | Regional Transportation Improvement Program |
| RTP | Regional Transportation Plan |
| RWQCB | Regional Water Quality Control Board |
| SARA | Superfund Amendments and Reauthorization Act |
| SARWQCB | Santa Ana Regional Water Quality Control Board |
| SAWA | Santa Ana Watershed Association |
| SCAB | South Coast Air Basin |
| SCAG | Southern California Association of Governments |
| SCAQMD | South Coast Air Quality Management District |
| SCE | Southern California Edison |
| SCRRA | Southern California Regional Rail Authority |
| SF | Single-Family |
| SFHAs | Special Flood Hazard Areas |
| SIP | State Implementation Plan |
| SJBL | San Jacinto Branch Line |
| SKR | Stephens' Kangaroo Rat |
| SPWN | Spawning, Reproduction, and/or Early Development |
| SR | State Route |
| SWRCB | State Water Resources Control Board |
| $SO_2$ | Sulfur Dioxide |
| SWPPP | Stormwater Pollution Prevention Plan |
| TAC | Toxic Air Contaminant |
| TCWG | Transportation Conformity Working Group |
| TLMA | Riverside County Transportation & Land Management Agency |
| UBC | Uniform Building Code |
| UCR | University of California, Riverside |
| UP RIL | Union Pacific Riverside Industrial Lead |

## ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| USC | United States Code |
| USDA | United States Department of Agriculture |
| USEPA | United States Environmental Protection Agency |
| USACE | United States Army Corps of Engineers |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UST | Underground Storage Tank |
| VdB | Vibration Decibels |
| VMT | Vehicle Miles Traveled |
| vph | Vehicles per hour |
| WARM | Warm Freshwater Habitat |
| WILD | Wildlife Habitat |
| WMWD | Western Municipal Water District |

# EXECUTIVE SUMMARY

The Executive Summary identifies the type of document, the proposed project including location, the purpose of an Environmental Impact Report (EIR), and summary of impacts and mitigation for the proposed Perris Valley Line (PVL) project. Note, the summary of impacts and mitigation is an overview of mitigation proposed for the project and is not the Mitigation, Monitoring, and Reporting Plan.

## ES.1.0 Document Identification

This EIR is to serve as a public disclosure document which would inform responsible agencies, decision makers, and the general public of the environmental effects anticipated with the adoption and implementation of the PVL project. It depicts the project alternatives (including the No Project Alternative), documents the project's potential environmental effects pursuant to the requirements of the California Environmental Quality Act (CEQA), and proposes mitigation measures, as applicable.

This EIR has been prepared in accordance with CEQA Guidelines (14 California Code of Regulations [CCR] 3 §15000 *et seq*.). Per Public Resource Code (PRC) §21067 of the CEQA Statute and 14 CCR §15367 and §§15050 through 15053 of the CEQA Guidelines, the Riverside County Transportation Commission (RCTC) is the "Lead Agency." The Lead Agency is "the public agency with the greatest responsibility for supervising or approving the project as a whole." As the Lead Agency, RCTC has the authority to adopt the proposed PVL project and implement appropriate mitigation measures, as required, to reduce significant impacts.

It should be noted, an Initial Study/Mitigated Negative Declaration (IS/MND) was prepared and circulated for public review and comment in January 2009. After careful consideration of public comments received, RCTC decided to discontinue the IS/MND process and instead, prepare an EIR. The EIR process was initiated with the publication of a Notice of Preparation (NOP) on July 14, 2009 (Appendix B, Notice of Preparation and Initial Study Checklist). The project described in the NOP included construction of a 4th track along the Burlington Northern Santa Fe (BNSF) Line. Subsequently, it was determined the 4th track was not needed for the PVL to operate, so the additional track has been removed from the project.

The proposed project must also comply with the National Environmental Policy Act (NEPA). The Federal Transit Administration (FTA) is the NEPA Lead Agency and is preparing a Supplemental Environmental Assessment (SEA) for the project.

## ES.2.0 Proposed Project

RCTC proposes to extend 24 miles of commuter rail service from the existing Riverside Downtown Station to the cities of Moreno Valley and Perris in western Riverside County, California. This new rail extension, known as the PVL, would be operated by the Southern California Regional Rail Authority (SCRRA), the operators of the SCRRA/Metrolink commuter rail system. The PVL would be created by using the existing Burlington Northern Santa Fe (BNSF) and San Jacinto Branch Line (SJBL) rail corridors with a new connection, as shown in Figure ES.2-1.

In the city of Riverside, the PVL would connect to the existing Riverside Downtown Station from the existing BNSF right-of-way (ROW), an approximately three-mile segment of rail currently operating with freight and commuter service. From the BNSF, the PVL would operate on a new curved rail segment, known as the "Citrus Connection," which would connect the BNSF and the SJBL. The Citrus Connection would be constructed on property to be acquired, located north of Citrus Street and Springbrook Wash in the city of Riverside. The eastern end of the Citrus Connection would link to the existing 21-mile SJBL alignment and extend south to the city of Perris. The PVL project would be supplemented with limited acquisition of properties to create support facilities, including station areas and a Layover Facility. It is anticipated that the PVL project would offer commuter rail service starting in 2012 with stations at Hunter Park, Moreno Valley/March Field, Downtown Perris, and South Perris.

### ES.3.0 Purpose of an Environmental Impact Report

The purpose of an EIR is to analyze the potential environmental impacts associated with a project. CEQA states that the purpose of an EIR is to: (1) inform the public and decision-makers of the potential environmental impacts of a project; (2) identify methods that could reduce the magnitude of potentially significant impacts of a project; and (3) identify alternatives that could reduce the magnitude of potentially significant impacts or propose more effective use of the project site.

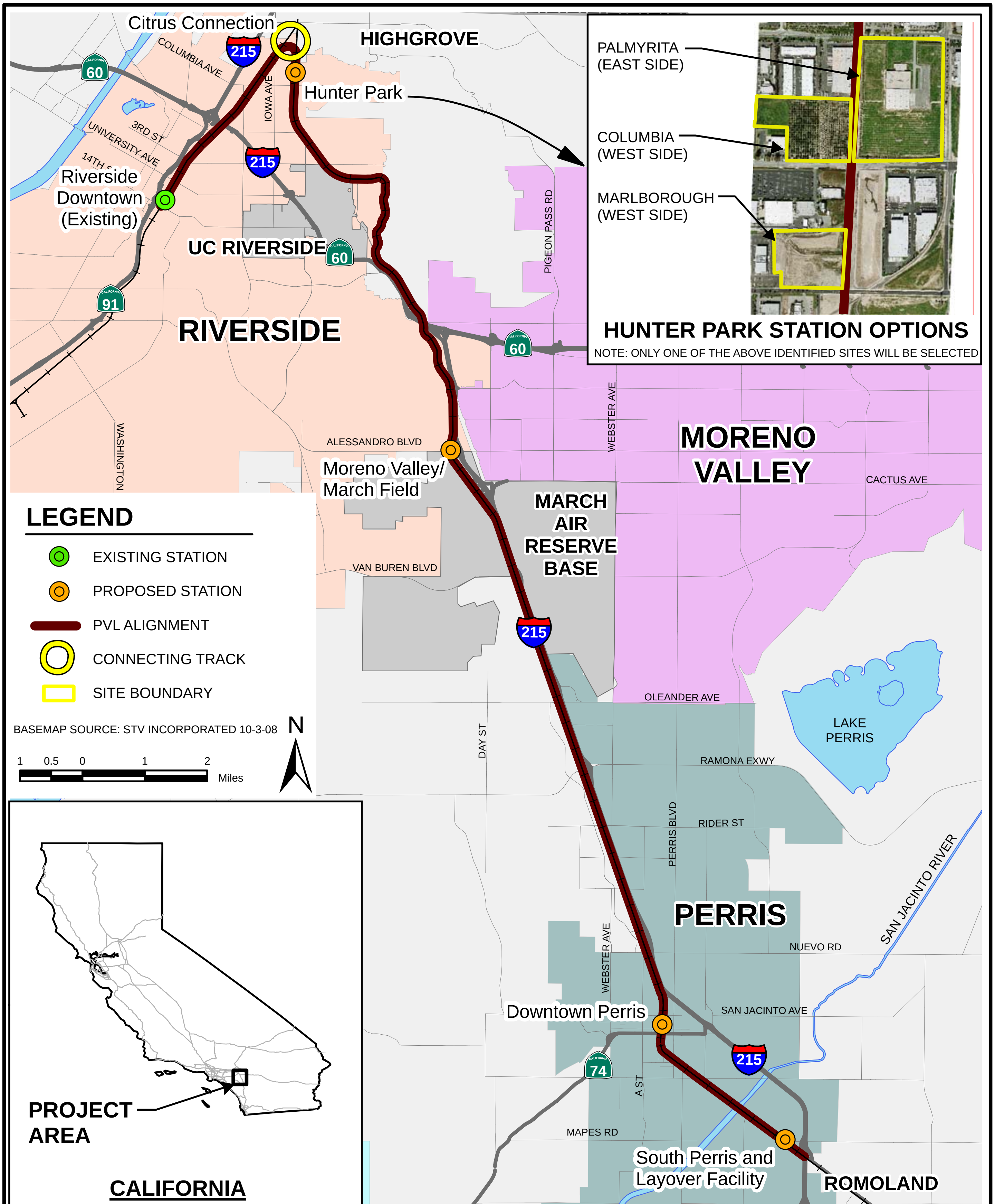
The principal use of this EIR is to evaluate and disclose potential environmental impacts associated with the implementation of the proposed project. An EIR is an informational document and is not intended to determine the merits of, or recommend approval or disapproval of a project. Ultimately, RCTC decision-makers must weigh the environmental effects of a project among other considerations, including planning, economic, and social concerns.

The standards of adequacy of an EIR, defined by §15151 of the CEQA Guidelines, are as follows:

> "An EIR should be prepared with a sufficient level of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effect of the proposed project need not be exhaustive, but sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have not looked for perfection but for adequacy, completeness, and good faith effort at full disclosure."

This EIR is comprised of nine chapters:

Chapter 1.0 – Introduction
Chapter 2.0 – Proposed Project
Chapter 3.0 – Project Alternatives
Chapter 4.0 – Environmental Analysis
Chapter 5.0 – Other Environmental Considerations
Chapter 6.0 – Effects Found Not to be Significant
Chapter 7.0 – Report Preparation
Chapter 8.0 – References
Chapter 9.0 – Index

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|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/8/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666vicEIR_ES.MXD |

REGIONAL AND VICINITY MAP

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

ES.2-1

## ES.4.0 Summary of Impacts and Mitigation Measures

A detailed discussion of existing environmental conditions, environmental impacts, and recommended mitigation measures is included in Chapter 4.0, Environmental Analysis. Table ES.4-1 summarizes the environmental impacts, mitigation measures, and level of significance after mitigation associated with the PVL project.

**Table ES.4-1**
**Summary of Impacts and Mitigation Measure**

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| ***Aesthetics*** | | | |
| Implementation of the project has the potential to create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. | Potentially significant | **AS-1:**<br>~~In order t~~To ~~limit~~ minimize light spill over into residential areas during construction, light attenuating barriers or directed lighting ~~will~~ shall be used. | No Impact |
| ***Agricultural Resources*** | | | |
| Implementation of the project would not result in any significant impacts to agricultural resources. | No Impact | No significant impacts to agricultural resources were identified; therefore, no mitigation is required. | No Impact |
| ***Air Quality*** | | | |
| Implementation of the project would not result in any significant impacts to air quality. | No Impact | No significant impacts to air quality were identified; therefore, no mitigation is required. | No Impact |
| ***Biological Resources*** | | | |
| Implementation of the project has the potential to have a substantial adverse effect, either directly or through habitat modifications, or any species identified as a candidate, sensitive, or special-status species in local or regional plans, | Potentially significant | **BR-1:**<br>~~A~~ The project biologist shall prepare and conduct pre-construction~~a~~ training ~~session~~ for ~~all~~ project personnel prior to any ~~grading/construction~~ground disturbing activities. At a minimum, the training shall include a description of the target species of concern, its habitats, the general provisions of the ESA and the MSHCP, the need to adhere to the provision of the MSHCP, the penalties associated with violating the provisions of the ESA, the general measures that are being implemented to conserve target species of concern as they relate to the project, any provisions for wildlife movement, and the | No Impact |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| policies, or regulations by CDFG or USFWS | | access routes to and from project site boundaries within which the project activities must be accomplished.<br><br>**BR-2:**<br>Equipment storage, fueling and staging areas ~~will~~ shall be located to minimize the risks of direct drainage into riparian areas or other environmentally sensitive habitats. The project specific SWPPP ~~will~~ shall identify appropriate construction related BMPs (such as drip pans, straw wattles, and silt fence) to control anticipated pollutants (oils, grease, etc.).<br><br>**BR-3:**<br>Stockpiling of materials ~~will~~ shall be limited to disturbed areas without native vegetation, areas to be impacted by project development or in non-sensitive habitats. These staging areas ~~will~~ shall be approved by the project biologist, and shall be located more than 500 feet from environmentally sensitive areas.<br><br>**BR-4:**<br>"No-fueling zones" ~~will~~ shall be established ~~within a minimum of~~at least 10 meters (33 feet) from drainages and fire sensitive areas.<br><br>**BR-5:**<br>The ~~qualified~~ project biologist ~~will~~ shall monitor construction activities at a minimum of three days per week throughout the duration of the project to ~~assess if practicable~~ensure mitigation measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint. Construction monitoring reports ~~will~~ shall be completed ~~with applicable conditions~~describing field conditions and construction activities. The project biologist ~~will~~ shall be empowered to halt work activity if necessary to confer with RCTC ~~staff~~ to ensure the proper implementation of species habitat and habitat protection measures.<br><br>**BR-6:**<br>To avoid attracting predators that may prey upon protected species, the project site ~~will~~ shall be kept clean of trash and debris. Food related trash items ~~will~~ shall be ~~enclosed~~ disposed of in ~~a~~ sealed containers and removed from the site with regular trash | |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | removal, at least weekly. Pets of project personnel ~~will~~ shall not be allowed on site.<br><br>**BR-7:**<br>If dead or injured listed species are located, initial notification must be made within three working days, in writing to the USFWS Division of Law Enforcement in Torrance California, and by telephone and in writing to the applicable jurisdiction, Carlsbad Field Office of the USFWS, and the CDFG.<br><br>**BR-8:**<br>Narrow Endemic Plants have the potential to occur in the areas near the San Jacinto River. If Narrow Endemic Plants are identified 90% of the population ~~will~~ shall be preserved, as required in the MSHCP.<br><br>**BR-9:**<br>There is a potential to impact western spadefoot toads with the work on the San Jacinto River Bridge and Overflow Channel Bridge. A pre-construction survey for western spadefoot toads ~~will~~ shall be conducted within 30 days prior to site disturbance to determine if western spadefoot toads are present within the designated construction area. Should western spadefoot toads be identified within the construction area, the project biologist shall prepare a relocation ~~an~~ program that shall be approved by RCA prior to implementation~~mitigation program will be implemented~~.<br><br>**BR-10:**<br>The MSHCP requires both protocol surveys and preconstruction surveys for burrowing owls. ~~If owls are identified during the preconstruction survey, the appropriate action will be determined. The appropriate action could include avoidance and passive or active relocation efforts.~~ Pre-construction surveys shall be conducted within 30 days prior to ground disturbance to avoid direct take. If owls are found to be present, the following measures will be implemented: prior to burrowing owl nesting season, passive relocation will occur and active burrows will be destroyed; after burrows are destroyed, artificial burrows will be created in suitable habitat that is contiguous with the foraging | |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | habitat of affected owls; a monitoring plan will be implemented to monitor the success of the mitigation program.<br><br>**BR-11:**<br>If nests are identified at the billboards located on the I-215 corridor, then a ~~qualified~~ project biologist ~~must~~ shall determine if the nests are active. If the biologist determines a nest to be active, appropriate buffers ~~will~~ shall be used until the birds have fledged and the nest ~~will~~ shall be removed with the approval of regulatory agencies.<br><br>**BR-12:**<br>There is a potential for impacts to southwestern willow flycatchers in the southern area of the Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area shall be completed outside the bird breeding season (May 15th to July 17th~~end of March to the end of September~~) [Santa Ana Watershed Association (SAWA), 2004~~2009~~].<br><br>**BR-13:**<br>There is a potential for impacts to least Bell's vireo in the southern area of Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be completed outside the bird breeding season (April 10th to July 31st ~~end of March to the end of September~~) (SAWA, 2004~~2009~~).<br><br>**BR-14:**<br>The project is within the SKR Fee area. RCTC ~~will~~ shall pay $500 per acre~~,~~ to the SKR ~~fund managed by Riverside Habitat Conservation Agency, the required $500 per acre fee~~ for ~~developing~~ development outside the existing right-of-way. This fee shall be paid at the time of the grading permit submittal. The fee will include sites for the Citrus Connection, ~~the~~ Hunter Park Station, ~~Downtown Perris Station~~, South Perris Station, and Layover Facility (approximately 65 acres).<br><br>**BR-15:**<br>There is a potential for impacts to California horned lark in the area of the South Perris Station ~~option~~ and the Layover Facility if the agricultural fields are allowed to fallow. To | |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | avoid potential impacts to nesting birds, the ground preparation work ~~will~~ shall be conducted outside of the bird nesting season (March 1st to July 31st ~~March to July~~) (County of Santa Barbara, 2009) and maintained to ensure that no birds then use the area for nesting prior to construction.<br><br>**BR-16:**<br>There is a potential for impacts to the coastal California gnatcatcher within the Box Springs Canyon Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area shall be completed outside the bird breeding season (February 15th to August 30th ~~mid February to mid September~~) (SAWA, 2004~~2009~~).<br><br>**BR-17:**<br>~~Jurisdictional areas associated with the replacement of culverts would result in impacts to habitat within both USACE and CDFG jurisdictional areas.~~ Prior to any construction ~~these~~ impacts to jurisdictional areas, RCTC shall obtain ~~would require~~ permit approval from the USACE, CDFG and the RWQCB. The mitigation for jurisdictional area impacts will be to purchase mitigation credits for permanent impacts at a 1:1 ratio (total of 0.085 acres) from a local mitigation bank. The temporary impacts will be mitigated by restoration/enhancement on land owned by RCTC near or adjacent to the project area. ~~the Santa Ana River Mitigation Bank.~~ ~~The mitigation ratios are finalized by the USACE and CDFG during permitting for the project. The permitting application is not deemed complete until the CEQA document is adopted by RCTC.~~ | |
| ***Cultural Resources*** | | | |
| Implementation of the project has the potential to cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 | Potentially significant | **CR-1:**<br>A qualified archaeologist and Native American monitor ~~will~~ shall monitor ground disturbing construction activities between MP 3.50 and 4.50, and between MP 5.60 and 6.50. These monitors ~~will~~ shall have the authority to temporarily halt or divert construction equipment to examine potential resources, assess significance, and offer recommendations for the procedures deemed | No Impact |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | appropriate to either further investigate or mitigate any adverse impacts. CA-RIV-2384, CA-RIV-4497/H and AE-CB-2 sites ~~will~~ shall be avoided during project construction through the establishment of ESA and delineated by exclusionary fencing.<br><br>**CR-2:**<br>Replacement of four wood box culverts (MP 1.60, 5.30, 6.11 and 18.10) and two bridges (MP 20.70 and 20.80) along the SJBL alignment shall be mitigated by detailed documentation according to Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER)/Historic American Landscape Survey (HALS) standards ~~(AE, 2009)~~.<br><br>**CR-3:**<br>Ground-disturbing activities ~~will~~ shall be monitored by a qualified paleontologist at the Citrus Connection, South Perris Station and Layover Facility. The monitor ~~should~~ shall also be present at locations where excavation is ~~great than four feet~~anticipated to be deeper than four feet. The monitor shall have the authority to temporarily halt or divert construction equipment to allow for removal of specimens. The monitor shall be equipped to salvage any fossils unearthed during project construction, and shall be prepared to collect sediment samples that are likely to contain the remains of small fossil invertebrates and vertebrates.<br><br>To mitigate adverse impacts to any paleontological resources encountered during construction, recovered specimens ~~will~~ shall be identified, prepared for permanent preservation, and curated at the San Bernardino County Natural History Museum with permanent retrievable paleontological storage. A report of findings ~~which~~ that includes an itemized inventory of specimens ~~will~~ shall accompany the recovered specimens for curation and storage. | |
| Implementation of the project has the potential to directly or indirectly destroy a unique | Potentially significant | **CR-4:**<br>In the event ~~that unanticipated~~ cultural or paleontological resources are encountered during ~~the proposed PVL project~~ construction, ground-disturbing activity ~~will~~ shall cease in the | No Impact |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| paleontological resource or site or unique geologic feature. | | immediate area. ~~until the services of a~~ A qualified archaeologist (cultural resources) and/or paleontologist (paleontological resources) shall be retained to ~~are retained. The archaeologist or paleontologist will~~ examine the materials encountered, ~~findings,~~ assess ~~their~~ significance, and recommend~~offer recommendations for the procedures deemed appropriate~~ a course of action to ~~either~~ further investigate and/or mitigate adverse impacts to those resources that have been encountered.<br><br>**CR-5:**<br>In the event that unanticipated discovery of human remains occurs during project construction, the procedures outlined in §15064.5(e) of the CEQA Guidelines ~~will~~ shall be strictly followed. These procedures specify that upon discovery, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains can occur. The county coroner must be contacted to determine if the remains are Native American. If the remains are determined to be Native American, the coroner ~~will~~ shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC ~~will~~ shall identify the Most Likely Descendent (MLD). The MLD ~~will~~ shall make recommendations for the appropriate treatment and disposition of the remains and any associated grave goods in accordance with PRC §5097.98. | |
| ***Geology and Soils*** | | | |
| Implementation of the project would not result in any significant impacts to geology and soils. | No Impact | No significant impacts to geology and soils were identified; therefore, no mitigation is required. | No Impact |
| ***Hazards and Hazardous Materials*** | | | |
| Implementation of the project has the potential to have a site included on the list of hazardous materials sites compiled pursuant to Government | Potentially significant | **HHM-1:**<br>~~Where soil~~ Soil contamination is suspected at the following locations:~~, appropriate sampling is required prior to disposal of excavated soil. Characterization of the soil is necessary prior to any ground-disturbing activities. Contaminated soil will be properly disposed at an off-site facility. The following sites will be characterized for possible soil contamination~~ | No Impact |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| Code §65962.5 and, as a result, has the potential to create a significant hazard to the public or the environment. | | ~~before excavation and/or construction activities begin:~~<br>• 6400 Fischer Road, Riverside - diesel AST release<br>• 13260 Highway 215, Riverside – gasoline UST release<br>• 2 South D Street, Perris - gasoline UST release<br>• 24 D Street, Perris - gasoline UST release<br>• 101 and 102 South D Street, Perris - gasoline UST release and waste oil release<br>• 210 West San Jacinto Avenue, Perris – gasoline and diesel UST release<br><br>Prior to construction ~~S~~soil characterization shall occur and includes~~activities including~~ sampling and analysis, and drilling ~~will~~ shall be coordinated with and under the guidance of the Riverside County Department of Environmental Health. RCTC ~~will~~ shall contract with a qualified environmental consultant to determine if the soil has been sampled, characterized and disposed of properly according to state and federal regulations.<br><br>**HHM-2:**<br>If the Palmyrita Avenue site is selected for the Hunter Park Station, but is not properly remediated prior to acquisition, RCTC ~~will~~ shall require the ~~potentially~~ responsible party to remove and remediate hazardous conditions and materials pursuant to the requirements of the local, state, and federal regulations. If, prior to acquisition, the current property owner does not complete proper remediation, RCTC ~~will~~ shall perform the remediation in accordance with a Health and Safety Plan, and in accordance with the required protocols for the removal and disposal of hazardous materials.<br><br>Because of the potential for soil contamination, sampling and disposal plans ~~will~~ shall be implemented ~~prior to~~Pre-~~c~~Construction according to a site-specific hazardous materials investigation work plan. | |
| Implementation of the project has the | Potentially significant | **HHM-3:**<br>Prior to ~~Before~~ construction ~~activities~~ | No Impact |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan | | ~~commence,~~ RCTC shall~~will~~ prepare ~~develop~~ a traffic management plan. The traffic management plan shall be prepared in consultation with local jurisdictions to determine detour routes, length and timing of any closures, temporary access routes, signage, coordination with police and fire departments regarding changes in emergency access routes. An additional component of the plan shall be coordinating with local emergency response agencies to identify emergency evacuation routes in the event of a wildland fire near the PVL facilities.This traffic management plan is the same as the traffic management plan required by Mitigation Measure HHM-4 and TT-4. ~~minimize impacts to existing emergency response or evacuation routes. At a minimum, the traffic management plan would address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors.~~ | |
| Implementation of the project has the potential to 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 residences are intermixed with wildlands | Potentially significant | **HHM-4:** Same as Mitigation Measure HHM-3 above. ~~Before construction activities commence, RCTC will develop a traffic management plan prior to starting construction. The contractor will also work with local jurisdictions to minimize impacts to existing emergency response or evacuation routes for wildland fires. At a minimum, the traffic management plan will address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and would contain contact information for RCTC and the project contractors~~ | No Impact |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| ***Hydrology/Water Quality*** | | | |
| Implementation of the project would not result in any significant impacts to hydrology and water quality. | No Impact | No significant impacts to hydrology and water quality were identified; therefore, no mitigation is required. | No Impact |
| ***Land Use and Planning*** | | | |
| Implementation of the project would not result in any significant impacts to land use and planning. | No Impact | No significant impacts to land use and planning were identified; therefore, no mitigation is required. | No Impact |
| ***Noise and Vibration*** | | | |
| Implementation of the project has the potential to cause 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. | Potentially significant | **NV-1:**<br>~~As shown on Figure 4.10-6, n~~Noise barriers ~~will~~ shall be ~~provided~~ constructed at the following locations (based on 30% Design Drawings):<br>• NB 1: 10' high and 530' long between 264+00 and 269+30<br>• NB 2: 13' high and 570' long between Sta. 269+30 and Sta. 275+00<br>• NB 3: 9' high and 680' long between Sta. 283+00 and Sta. 289+40<br>• NB 4: 12' high and 600' long between Sta. 289+40 and Sta. 295+40<br>• NB 5: 8' high and 530' long between Sta. 297+70 and Sta. 303+00<br>• NB 6: 8' high and 800' long between Sta. 303+00 and Sta. 311+00<br>• NB 7: 10' high and ~~700~~800' long between Sta. 322+00 and Sta. 330+00<br>• NB 8: 11' high and 320' long between Sta. 331+00 and Sta. 334+20<br>• NB 9: 13' high and 950' long between Sta. 323+40 and Sta. 332+40<br>• NB 10: 13' high and 250' long between Sta. 332+80 and Sta. 334+80<br>• NB 11: 9' high and 310' long between Sta. 336+00 and Sta. 339+10<br>• NB 12: 9' high and 310' long between Sta. 339+10 and Sta. 342+20 | Less than significant |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | • NB 13: 13' high and 380' long between Sta. 342+20 and Sta. 346+00<br><br>**NV-2:**<br>Based on the topography and engineering constraints at seven residential locations and St. George's Episcopal Church (eight properties total), the use of noise barriers would not provide adequate noise reduction. Improving the sound insulation of these properties by replacing windows facing the tracks with new sound-rated windows, as well as caulking and sealing gaps in the building envelope, eliminating operable windows and installing specially designed solid-core doors, would reduce noise to below the FTA impact criteria, and to less than significant levels. Sound insulation for eight properties ~~will~~ shall be provided at the following locations:<br><br>• Northeast corner of the grade crossing at West Blaine Street (619 West Blaine Street)<br>• Northeast corner of the grade crossing at Mount Vernon Avenue (116 East Campus View Drive)<br>• Southwest corner of the grade crossing at Mount Vernon Avenue (first home on Mount Vernon Avenue)<br>• Northeast corner of the grade crossing at Citrus Street (1027 Citrus Street)<br>• Northeast corner of the grade crossing at Spruce Street (first two homes on Kentwood Drive)<br>• Southeast corner of the grade crossing at Spruce Street (first home on Glenhill Drive)<br>• St. George's Episcopal Church | |
| Implementation of the project has the potential to cause exposure of persons to or generation of excessive groundborne-vibration or groundborne-noise levels. | Potentially significant | **NV-3:**<br>Ballast Mats: A ballast mat consists of a rubber (such as shredded rubber tires), cork or other type of resilient elastomer pad that is placed under the normal ballast, ties, and rail. The ballast mat ~~generally must~~shall be placed on a concrete or asphalt layer to be most effective. ~~They will not be as effective if placed directly on the soil or the sub-ballast.~~ Ballast mats can provide 5 to 12 dB attenuation at frequencies above 25 to 30Hz. | Less than significant |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | **NV-4:**<br>Resiliently Supported Ties (Under-Tie Pads): This treatment consists of resilient rubber pads placed underneath concrete ties. A resiliently supported tie system consists of concrete ties supported by rubber pads. The rails are fastened directly to the concrete ties using standard rail clips.<br><br>* Implementation by RCTC of either one of the above described vibration mitigation measures (NV-3 or NV-4) between Sta. 263+00 and 275+00 will eliminate the 2 VdB impact predicted in the UCR area of Riverside (affecting a total of 14 homes extending approximately 1,200 feet along the eastern side of the proposed PVL alignment just south of Spruce Street and north of Hyatt Elementary School). | |
| ***Transportation and Traffic*** | | | |
| Implementation of the project has the potential to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections) | Potentially significant | **TT-1:**<br>Cactus Avenue at Old 215 (for Moreno Valley/March Field Station):<br><br>Reduce north/southbound Old 215's maximum traffic signal green time to 15 seconds during the PM (5-6 PM) analysis hour. This would reduce delays for westbound Cactus Avenue's through movement from ~~244~~240 to ~~119~~116 seconds and improve the overall intersection LOS from LOS F with ~~152~~146 seconds of delay to LOS E with ~~76~~72 seconds of delay, while maintaining LOS C for Old 215.<br><br>**TT-2:**<br>SR-74 (4th Street) at D Street (for Downtown Perris Station):<br><br>Reduce the maximum green time for the east/west~~Restripe north/south~~bound SR-74 left-turn phase~~D Street approaches~~ to 14 seconds during the PM (5-6 PM) analysis hour.~~provide one left-turn and one through/right turn shared lane.~~ The levels of service for north and southbound D Street's through/left-turn movements, and the overall intersection, would be improved beyond future levels of service without the project during the PM analysis hour with this mitigation measure. | Less than significant |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | **TT-3:**<br>Bonnie Drive at southbound I-215 ramps (for South Perris Station)<br><br>Install a new traffic signal. This would improve eastbound Bonnie Drive's right-turn movement from LOS F to LOS B during the PM (5-6 PM) analysis hour and left-turn movement from LOS F to LOS C during the AM (6-7 AM) and PM analysis hours.<br><br>*RCTC shall design the above-proposed improvements, and execute agreements with the affected jurisdictions to provide funding for the installation of the signals or to install the signals in conjunction with the development of the project. With these mitigation measures in place, the significant impacts of the proposed project at the three above-mentioned intersections will be eliminated (out of the six locations where significant impacts are expected). At the remaining three locations where significant impacts are expected (San Jacinto and Redlands Avenues, SR-74 at northbound I-215 Off-Ramp, and SR-74 at Sherman Road), traffic signals are planned to be installed by other projects (unrelated to the PVL) as part of the future condition without the project. Therefore, no mitigation measures will need to be implemented by the proposed PVL project at these intersections. However, in the event that the signalization of these three locations by other projects (unrelated to the PVL) does not occur prior to the 2012 opening year of the PVL, the installation of traffic signals at these additional locations will be incorporated as PVL project features.<br><br>**TT-4:**<br>~~Develop~~ RCTC shall develop a traffic management plan in consultation with local jurisdictions to minimize impacts to existing traffic levels of service. At a minimum, the traffic management plan shall address: ~~determine~~ detours~~ routes,~~; coordination with other construction projects (if applicable); length and timing of any street closures~~,~~; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes~~,~~ and | |

| Environmental Impact | Significance Before Mitigation | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|
| | | signage if any commercial properties are affected; and contact information for RCTC and its contractors. ~~RCTC will be responsible for development and enforcement of this measure.~~ | |
| ***Utilities and Service Systems*** | | | |
| Implementation of the project would not result in any significant impacts to utilities and service systems. | No Impact | No significant impacts to utilities and service systems were identified; therefore, no mitigation is required. | No Impact |

# 1.0 INTRODUCTION

This Environmental Impact Report (EIR) is to serve as a public disclosure document that informs the responsible agencies, decision makers, and the general public of the environmental effects anticipated with the adoption and implementation of the Perris Valley Line (PVL) project. It depicts the project alternatives (including the No Project Alternative), documents the project's potential environmental effects pursuant to the requirements of the California Environmental Quality Act (CEQA), and proposes mitigation measures, as applicable.

This EIR has been prepared in accordance with CEQA Guidelines (14 California Code of Regulations [CCR] 3 §15000 *et seq*.). Per Public Resources Code (PCR) §21067 of the CEQA Statute and 14 CCR 3 §§15367 and §§15050 through 15053 of the CEQA Guidelines, the Riverside County Transportation Commission (RCTC) is the "Lead Agency." The Lead Agency is "the public agency with the greatest responsibility for supervising or approving the project as a whole." As the Lead Agency, RCTC has the authority to adopt the proposed PVL project and implement appropriate mitigation measures, as required, to reduce significant impacts.

RCTC proposes to extend 24-miles of commuter rail service from the existing Riverside Downtown Station to south of the city of Perris in western Riverside County, California. This new rail extension, known as the PVL, would be operated by the Southern California Regional Rail Authority (SCRRA), the operators of the SCRRA/Metrolink commuter rail system. The PVL would be created by using the existing Burlington Northern Santa Fe (BNSF) and San Jacinto Branch Line (SJBL) rail corridors.

Additionally, an Initial Study/Mitigated Negative Declaration (IS/MND) was prepared and circulated for public review and comment in January 2009. After careful consideration of public comments received, RCTC decided to discontinue the IS/MND process and instead prepare an EIR. The EIR process was initiated with the publication of a Notice of Preparation (NOP) on July 14, 2009 (Appendix B). The project described in the NOP included construction of a 4th track along the BNSF. Subsequently, it was determined the 4th track was not needed for the PVL to operate, so the additional track has been removed from the project.

## 1.1 PURPOSE OF AN ENVIRONMENTAL IMPACT REPORT

The purpose of an EIR is to analyze the potential environmental impacts associated with a project. CEQA states the purpose of an EIR is to: (1) inform the public and decision-makers of the potential environmental impacts of a project; (2) identify methods that could reduce the magnitude of potentially significant impacts of a project; (3) identify alternatives that could reduce the magnitude of potentially significant impacts or propose more effective use of the project site.

## 1.2 EIR ADEQUACY

The principal use of this EIR is to evaluate and disclose potential environmental impacts associated with the implementation of the proposed project. An EIR is an informational document and is not intended to determine the merits of, or recommend approval or disapproval of a project. Decision-makers must weigh the environmental effects of a project among other considerations, including planning, economic, and social concerns.

The standards of adequacy of an EIR, defined by §15151 of the CEQA Guidelines, are as follows:

> "An EIR should be prepared with a sufficient level of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effect of the proposed project need not be exhaustive, but sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have not looked for perfection but for adequacy, completeness, and good faith effort at full disclosure."

## 1.3 ORGANIZATION OF THIS EIR

The content and format of this EIR are designed to meet the current requirements of CEQA and the CEQA Guidelines.

**Chapter 1.0 – Introduction:** This chapter describes the purpose of and organization of the EIR and its preparation, review, and certification process.

**Chapter 2.0 – Proposed Project:** This chapter provides a description of the regional and local environmental setting, project background, project objectives, and project specific details, as well as identifies required permits for project implementation.

**Chapter 3.0 – Project Alternatives:** This chapter describes alternatives considered and compares the relative impacts to those of the proposed PVL project; and provides a brief description of alternatives considered.

**Chapter 4.0 – Environmental Analysis:** There is a description of the environmental setting, regulatory compliance, significance criteria, discusses the potentially adverse environmental impacts for each environmental resource area, and mitigation measures are defined, as required.

**Chapter 5.0 – Other Environmental Considerations:** This chapter discusses environmental issue areas identified within CEQA that require analysis, such as significant irreversible and irretrievable commitment of resources; growth inducing impacts; and cumulative impacts.

**Chapter 6.0 – Effects Found Not To Be Significant**: This chapter discusses resource areas that were found not to be significant, such as mineral resources; population and housing; public services; and recreation.

**Chapter 7.0 – Report Preparation:** This chapter identifies firms and individuals responsible for the content of this EIR.

**Chapter 8.0 – References:** This chapter provides the list of references cited.

**Chapter 9.0 – Index**

**Appendices:** The appendices present data that support the analysis or contents of this EIR. Technical studies are also provided electronically on a CD contained within this document. In addition, copies of these reports are on file at the locations listed in Section 1.5 and are also available for download on the project website at (http://www.perrisvalleyline.info/).

## 1.4 EIR PROCESS

RCTC prepared an IS/MND and circulated the document for public and agency review in early 2009. As part of the public involvement for the IS/MND document, RCTC held two public outreach workshops in June 2008, a public information meeting in February 2009, and two public hearings in February 2009. In response to public input, RCTC decided to proceed with an EIR. Comments on the Draft IS/MND in 2009 are provided in Appendix A.

On July 28, 2009, two weeks after the NOP was posted by the State Clearinghouse, RCTC conducted a public scoping meeting at the Moreno Valley Towngate Community Center. The intent of this meeting was to receive input on the issues that should be covered in greater detail in the EIR. The meeting format included tables arranged by topical issues for planning, engineering, and environmental, supported by maps of the project study area. Project staff members and resource specialists were available to answer questions. Public participants were invited to fill out comment cards expressing their concerns. Concerns raised included:

- Air quality;
- Noise;
- Traffic;
- Grade crossings;
- Floodplains and water quality;
- Stations;
- ADA compliance;
- Safety;
- Planning issues;
- Growth Inducing impacts;
- Previous comments submitted on the IS/MND; and,
- Alternatives.

## 1.5 DRAFT EIR REVIEW PROCESS

In accordance with §21091 of the CEQA Guidelines, the draft EIR will be available for public review and comment for a 45-day period. During the public review period, interested individuals, organizations, and agencies can provide written comments. Please address all comments to:

Contact:

Edda Rosso, P.E.
Capital Projects Manager
County Regional Complex
4080 Lemon Street, 3rd Floor
Post Office Box 12008
Riverside, California 92502-2208

The draft EIR will be available for review at the following locations:

- RCTC office (4080 Lemon Street, 3rd Floor, Riverside, CA 92502-2208)
- Riverside Main Library (3581 Mission Inn Avenue, Riverside, CA 92501)
- Woodcrest Library (16625 Krameria Avenue, Riverside, CA 92504)
- Moreno Valley Public Library (25480 Alessandro Boulevard, Moreno Valley, CA 92553)
- Perris Branch Library (163 E. San Jacinto Avenue, Perris, CA 92570)
- RCTC webpage (http://www.perrisvalleyline.info/)

RCTC will receive written public input on the project and the EIR during the public comment period which extends from April 5, 2010 to May 24, 2010. **Due to the time limits mandated by state law, comments must be sent to RCTC at the earliest possible date, but no later than May 24, 2010**. An agency response to this EIR should include the name of a contact person within the commenting agency. In addition, ~~two~~ three public hearings will be held on **April 14, 2010** at **9:30AM** at the Riverside County Administrative Center (4080 Lemon Street, Riverside, CA 92502), ~~and~~ on **April 22, 2010** at **6:00PM** in the City of Perris, City Council Chambers (101 North “D” Street, Perris, CA 92570 – corner of San Jacinto and Perris Boulevard), and on **May 17, 2010** at **6:00 PM** at UCR Extension – Room C (1200 University Avenue, Riverside, CA 92507).

## 1.6 ENVIRONMENTAL PERMITS

The activities identified in this EIR require consultation and possible permitting with federal, state, and local agencies:

**Table 1.6-1**
**Agency Actions and Approvals**

| Agency | Action |
|---|---|
| Riverside County Transportation Commission (RCTC) | Certify EIR |
| California Department of Fish and Game (CDFG) | 1602 Streambed Alteration Agreement |
| Santa Ana Regional Water Quality Control Board (SARWQCB) | Section 401 Permit |
| United States Army Corps of Engineers (USACE) | Section 404 Permit |
| United States Fish and Wildlife Service (USFWS) | Section 7 Consultation (if threatened or endangered species impacts are anticipated) |
| Regional Conservation Authority (RCA) | Consistency Determination with the Western Riverside County Multiple-Species Habitat Conservation Plan (MSHCP) |
| California Office of Historic Preservation | Section 106 Concurrence |
| Riverside County Flood Control and Water Conservation District | "No Rise" determination improvements to drainage structures |
| Transportation Conformity Working Group | Conformity with local air quality plans |
| SCRRA | Design Approval |
| BNSF Railway Co. | Design Approval |
| UP Railroad | Design Approval at the ROW crossing |
| March Joint Powers Authority | Design Review |
| Riverside Transit Agency | Design Review at Downtown Perris |
| City of Riverside | Design Review |
| City of Perris | Design Review |
| California Public Utilities Commission | Grade Crossing Improvements |
| Federal Communication Commission | Communication equipment frequencies |
| Airport Land Use Commission | Consistency with airport plans |

# 2.0 PROPOSED PROJECT

## 2.1 ENVIRONMENTAL SETTING

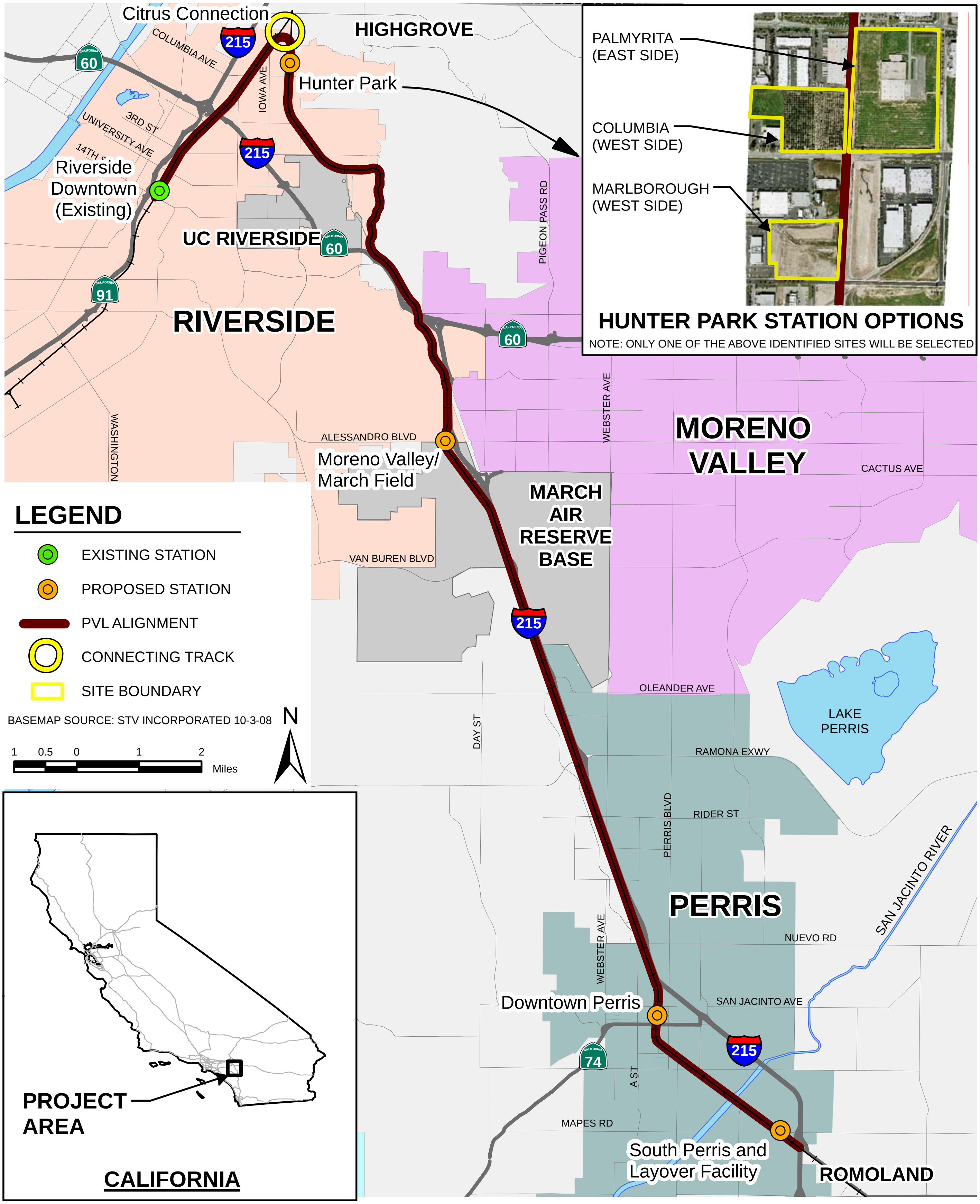
The proposed PVL project is located in the western Riverside County region of southern California. The project is approximately 70 miles east of Los Angeles, and the study area includes the cities of Riverside, Moreno Valley, and Perris, as shown on Figure 2.1-1. The study area includes an existing transportation corridor which extends approximately 24 miles southeast from Riverside to south of Perris.

The primary transportation facilities in the study area include a limited use rail freight line, the SJBL, and Interstate 215 (I-215), a limited access freeway, which run approximately parallel to one another from Riverside to Perris in a south to southeasterly direction. Two large institutions located in this study area are the University of California, Riverside (UCR) and the March Air Reserve Base (MARB), located approximately halfway between Riverside and Perris.

Natural features in the vicinity of the northern portion of the study area include the Box Springs Mountain Reserve to the northeast of the SJBL/I-215 corridor, and the Sycamore Canyon Wilderness Park to the southwest of the I-215/State Route 60 (SR-60) interchange. The southern extent of the SJBL/I-215 corridor is characterized by a more rural setting. Adjacent lands are occupied by industrial, agricultural, and aviation uses. The San Jacinto River crosses the southern extent of the project corridor near the intersection of Murrieta and Case Roads.

The proposed project would extend commuter rail service from the existing Riverside Downtown Station in Riverside south to the cities of Moreno Valley and Perris, providing an extension of the existing SCRRA/Metrolink commuter rail service from Los Angeles Union Station (LA Union Station). This new rail extension, known as the PVL, would be operated by SCRRA, the operators of the SCRRA/Metrolink commuter rail system in southern California. The PVL would be created through the use of existing rail rights-of–way (ROW) with a short new rail connection, as described in detail below.

In the city of Riverside, the PVL would connect to the existing Riverside Downtown Station from the existing BNSF ROW, an approximately three-mile segment of rail currently operating with freight and commuter service. From the existing BNSF ROW, the PVL would operate on a new curved rail segment, known as the “Citrus Connection”, which would connect the BNSF and the SJBL. The Citrus Connection would be constructed on property to be acquired, located north of Citrus Street and Springbrook Wash, in Riverside. The eastern end of the Citrus Connection would link to the existing 21-mile SJBL alignment to extend south to Perris. The PVL project would be supplemented with limited acquisition of properties to create support facilities, including station areas and a Layover Facility. It is anticipated that the PVL project would offer commuter rail service starting in 2012 with stations at Hunter Park (one of three evaluated locations), Moreno Valley/March Field, Downtown Perris, and South Perris.




| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/8/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666vicEIR.MXD |

REGIONAL AND VICINITY MAP

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
2.1-1

## 2.2 PROJECT AREA BACKGROUND

Existing conditions within the project corridor include established rail lines that were constructed in the 19th century. Originally known as the Atchison Topeka & Santa Fe Railroad (AT&SF), the existing BNSF railroad main line was constructed between 1885 and 1888 by the Santa Ana & Los Angeles Railway Company. This line originally extended southwest from Highgrove and Riverside to Santa Ana in Orange County where it connected with existing lines in Los Angeles (Myra L. Frank & Associates, Inc. [MFA], 2003).

Before the construction of the BNSF main line, the segment of the alignment now known as the SJBL was constructed in two segments over a six-year period. The California Southern Railroad completed construction of the first segment between Highgrove and Perris in 1882 to serve as part of its San Bernardino to National City main line. The second segment between Perris and San Jacinto was completed in 1888 (MFA, 2003). Both the current BNSF ROW and SJBL ROW are within their same respective corridors as originally constructed in the late 1880s.

Connecting the San Jacinto Valley with major coastal cities such as Los Angeles and San Diego by railroad contributed to the success of local agricultural economies. Farmers and ranchers built sidings along the SJBL to load produce and other farm products directly onto the trains. In addition to transporting agricultural goods, the railroad also provided passenger service to Los Angeles (Applied EarthWorks, Inc. [AE], 2009).

Later, the SJBL was acquired by AT&SF and then by RCTC in 1993. Through its operating agreement with RCTC, BNSF (AT&SF's successor) provides limited freight service to customers along the SJBL, primarily along the I-215 corridor. Both the SJBL and the BNSF lines are currently used for freight operations. The BNSF main line also accommodates Inland Empire – Orange County trains operated by SCRRA/Metrolink.

Currently, western Riverside County is linked to the coastal counties by three direct commuter rail routes via a station stop at the Riverside Downtown Station. Both the Riverside Line and the 91 Line connect to LA Union Station. The Inland Empire – Orange County Line parallels the 91 Line and then turns south to destinations in Orange County. These three existing SCRRA/Metrolink commuter rail lines would serve (link to) the proposed PVL via the Riverside Downtown Station, providing improved access between the study area and the adjacent coastal counties currently served by SCRRA/Metrolink.

The 1993 acquisition by RCTC of the entire length of the SJBL presents the opportunity to utilize the SJBL for an extension of the existing commuter rail service into the study area. Additionally, it should be noted that RCTC is a member agency of SCRRA/Metrolink. In the capacity of a member agency of SCRRA/Metrolink and the project proponent, RCTC has previously donated $26,000 to Riverside to study the potential for "quiet zones" at the grade crossings in Riverside.

<u>UCR Station</u>

The UCR Station was previously evaluated in the IS/MND which was publicly circulated in January 2009. The UCR Station would have been located within the SJBL ROW along Watkins Drive in Riverside. In response to input from the surrounding neighborhood, the station would have provided for passenger drop-off and pick-up only ("kiss and ride"), but no parking.

However, further input from the neighborhood during the public review and comment period for the IS/MND resulted in the removal of the UCR Station as part of the PVL. It should be noted, the General Plan for the City of Riverside does identify a station in the UCR neighborhood.

Highgrove Option

The concept of a Metrolink Station in the Highgrove area has been raised by members of the public throughout RCTC's commuter rail planning process. In response, RCTC studied the concept on a number of occasions between 1994 and 2010. The ~~studies~~ evaluations consistently reaffirm that a Highgrove Area Station is not a feasible ~~viable~~ option for the PVL project. (State CEQA Guidelines § 15126.6(f)(1) [feasibility of alternatives can be determined based on factors such as site suitability, economic viability, availability of infrastructure].) Below is an explanation of why the Highgrove Area Station is not feasible.

During the planning period for the proposed project, site conditions have changed at the commenter's Highgrove area station site. The previously undeveloped 34± acres of private land now has an approved Parcel Map and Design Review (Planning Case P06-1506 and P06-1508) from the City of Riverside (November 2007) for development of the Citrus Business Park. Improvements to the property will include constructing four new industrial buildings (509,787 square feet). Access was approved via Citrus Street; emergency access is via Villa Street.

With public access to the site limited to Citrus Street, access across Springbrook Wash is the only way to access the two designated parcels north of the Wash. This area, north of the wash, was approved for two industrial buildings as part of the approval for the Citrus Business Park. The approved access is from a new crossing constructed on the western portion of the site, adjacent to the BNSF right-of-way. Since the approval of the Citrus Business Park, the two industrial buildings south of Springbrook Wash have been constructed. As such, the existing condition for the commenter's proposed Highgrove station site consists of two industrial buildings with access from Citrus Street and a crossing at Springbrook Wash at the western boundary of the property adjacent to the BNSF.

The proposed PVL project would construct the Citrus Connection on the two parcels north of Springbrook Wash. As discussed in the environmental document, the Citrus Connection would connect the BNSF main line with the SJBL/RCTC ROW via a short curved track to be constructed. This would replace the two industrial buildings proposed for this northern area.

In addition to the approved Citrus Business Park, the City of Riverside is scheduled to start construction of a railroad grade separation at Iowa Street on the BNSF main line. The planned grade separation would allow Iowa Street to be raised over the BNSF main line between Palmyrita Street and Spring Street. Citrus Street would remain in the current configuration but only a right turn in/right turn out would be allowed to and from Iowa Street.

It should also be noted that construction has started on the Spring Mountain Ranch development, along the northern section of Pigeon Pass Road. The Riverside County Transportation Department (RCTD) is currently studying alternatives for roadway alignment through the development to connect Pigeon Pass Road with the City of Riverside. Currently, neither Center Street nor Villa Street (Highgrove area) connect to the east to provide access to the Spring Mountain Ranch area. The closest connection for Pigeon Pass Road would be at

Marlborough Street which allows access to the Hunter Park Station. These alignments will continue to be studied by RCTD.

~~Starting~~ The planning began in 1988 when~~,~~ RCTC initiated studies of potential station sites on the BNSF main line to serve future commuter rail service to Orange County. As a result, RCTC decided to purchase passenger rail operating rights on the BNSF. As the Metrolink system expanded within Riverside County, existing stations were reaching capacity and various station selection studies were undertaken. Unlike other Metrolink member agencies, RCTC takes responsibility to fund the capital and operating costs for Metrolink Stations within the county. As such, RCTC takes into account both capital, operation, and maintenance costs when evaluating station locations.

Commuter rail station siting and selection considerations are based on a number of factors, including projected ridership and revenue; operational requirements; geographic spacing in relation to other stations; right of way requirements and availability; local conditions such as surrounding land use and traffic circulation; and rail configuration. Additionally, both the BNSF and the CPUC prefer the Marlborough Station location over the Highgrove site. The BNSF is concerned the Highgrove station location would cause increased congestion on the main line and not be a feasible option (Project Meeting, February 25, 2009). The CPUC identifies the Marlborough Station as the preferred location because of the existing roadway access. The Highgrove station would require two new grade crossings while Marlborough would not require any (email communication, February 2, 2011).~~The Highgrove Area Station fails to adequately meet these considerations.~~

From an engineering perspective, the Highgrove area station is infeasible for the reasons enumerated below:

Prior to planning the PVL project RCTC received public input concerning the constructio~~n~~n~~g~~ of transit facilities in the Highgrove area. The desired facilities included locating a station on the BNSF main line near Citrus and Villa Streets. RCTC has revisited the feasibility of this option numerous times in the past (1994, 1999, 2003, 2007, and 2009). In general, the concerns ~~initially~~ identified by RCTC in early evaluations~~studies~~ have not changed over the years. During a January 2006 evaluation, RCTC identified ~~five~~ the following key reasons to decline development of a Metrolink commuter rail station at Highgrove area on the BNSF~~ which are listed below~~. The findings included:

1. Public preference was to expand existing stations (38%) compared to construction brand new stations (only 6% of the public wanted a Highgrove option when compared to three other station sites);

2. Constrained Operating Environment – Highgrove weekday volume ranks the lowest in comparison to the current train volumes for the five existing RCTC Metrolink stations. The closest station (existing Riverside Downtown Station) to the Highgrove area is only 3.7 miles away. The Riverside Downtown Station train volume is more than 4 times that of a potential Highgrove option. Riverside Downtown serves three commuter lines while Highgrove would serve just one line.

~~3) A feasibility study was performed for Highgrove to determine current and projected ridership forecasts. The results indicated that ridership is very low compared to actual trips at the existing stations.~~

~~4) Highgrove serves a limited number of commuter trains combined with low ridership and high capital costs. Construction of a Highgrove option was estimated to be $15M - $20M with annual operating costs estimated at $200K - $250K. RCTC determined this would not be cost effective.~~

~~5~~3. It was determined that the opportunity to have a station site on the RCTC owned SJBL alignment, at a location just south of the Highgrove area (Hunter Park region), would be a better solution instead of ~~needing to~~ purchasing~~e~~ property from BNSF.

The Hunter Park Station would also allow for commuters from the Spring Mountain Ranch the shortest access via Marlborough Avenue or Palmyrita Street (which connects to the Ranch development directly). Neither Citrus Avenue nor Villa Street connect east across the SJBL/RCTC ROW to allow access to a station from the east.

Subsequently, after the January 2006 presentation, members of the public requested additional ~~studies~~ evaluations to determine the viability of the Highgrove Station option as part of the PVL project. In February 2009 RCTC requested STV Incorporated to prepare a Highgrove Station Site Plan Study. The results of this study indicated 13 impediments to the construction of a Highgrove Station. On September 19, 2009, Barney Barnett submitted a letter rebutting STV Incorporated's study. STV Incorporated prepared a response to Mr. Barnett's rebuttal by letter dated January 11, 2010. A summary of STV's response is outlined below:

1, Reconfiguration of the Villa Street grade crossing ~~and~~ would be necessary. ~~and~~ This would include extensive and costly safety and engineering enhancements ~~is costly~~ and poses potential vehicular and pedestrian safety issues. In addition, the City of Riverside will not allow regular truck and vehicular access from Villa Street to the northern parcels in the Parcel Map and Design Review document dated November 8, 2007 (Planning Cases P06-1506 and P06-1508) that would cause adverse impacts the existing adjacent residential neighborhood. The CPUC has indicated, in a project email, dated February 2, 2011, that they will not allow a station at Highgrove because of the need to improve two at grade crossings when none require improvements at Hunter Park.

2. Extending Spring Street westward through an existing vacant residential property and creating a new vehicular and pedestrian grade crossing creates risks of train and vehicular/pedestrian collisions and is not feasible for the same reasons as accessing the site from Villa Street. In addition, the CPUC has reviewed the Highgrove alternative and prefers the Hunter Park Station (Marlborough alternative) because of the close proximity of the two sites and existing crossings provide access to the Hunter Park Station (Marlborough alternative). The CPUC implementation practice for General Order Number 88-B is to not allow the construction of new at-grade crossings when not absolutely necessary. The CPUC views new at-grade crossings at Spring Street or over the Citrus Connection track as not absolutely necessary because of the option for a station to be located at Hunter Park (email communication, February 2, 2011).

3. The existing topography and evidence of substantial ponding on either sides of the crossing within the right-of-way (ROW) indicate serious drainage and visibility problems that would need to be addressed by extensive excavation and grading. Such work would add substantial construction and operational/maintenance costs and would also introduce new impacts to soils, geology and air quality during excavation. Thus, it's not "environmentally friendly" as commenter claims.

4. Diverting traffic into the Villa Street neighborhood to access the station parking on the northern parcels is not viable because the City of Riverside will not allow regular truck and vehicular access from Villa Street to the northern parcels. This limitation was stated as a condition of approval in the Parcel Map and Design Review document dated November 8, 2007 (Planning Cases P06-1506 and P06-1508). The City of Riverside indicated that Villa Street could only be used for emergency access into the site.

5. The original estimate in the 2009 Site Plan Study of 7 acres of available land for parking was based upon utilizing only the parcel north of the Citrus Connection track. Due to further design development and moving the Citrus Connection track further north to avoid the Springbrook Wash conservation easement, the northern parcel area available for parking has been reduced. STV Incorporated has reevaluated the available land for parking and included a portion of the parcel south of the Citrus Connection track in parking land area calculation netting approximately 9.3 acres total available land for parking. Although, considering the size, shape and configuration of the parcels available, a less than efficient parking plan would be the result. The actual area available for parking in the Citrus Connection area is slightly less than the Marlborough alternative containing 9.5 acres. The current total area north of Springbrook Wash is 16.47 acres. This 16.47 acres would then have the Citrus Connection track through the center of it which would result in a net usable area of 6.6 acres. Access to the approximately 6.6 acres on the north parcel would be dependent upon a vehicular undercrossing beneath the Citrus Connection track due to the access restrictions at Villa Street discussed above. The land area needed for an undercrossing would severely restrict the 6.6 acres available.

6. RCTC cannot limit access to the western driveway to only Metrolink passengers. The existing western driveway is shared access with the current property owner of the parcels (currently an existing industrial warehouse use) south of the Springbrook Wash, forcing passenger traffic to mix with semi-truck traffic and creating an unsafe condition for access to the station parking. Per an easement in the Covenants, Codes and Restriction's for the purchase of the property by RCTC, access from this western driveway must be maintained for the owner of existing warehouse development. Any parking facilities located within the parcel area south of the Citrus Connection track are limited by the California Department of Fish and Game 50' setback from the Springbrook Wash due to Condition 22 of the Agreement Regarding Proposed Stream or Lake Alteration imposed on the subject property dated 5/30/08.

7. The only viable location for disabled parking is immediately adjacent or in the near vicinity of the platform and the ticket vending machine which would be in the western drive and does not fit due to the placement of the adjacent warehouse building. The alternative is to place the disabled parking north of the Springbrook Wash which would impose an unreasonable travel distance (in excess of 800 feet) from the closest parking spaces to the ticket vending machine and platform for disabled passengers.

8. BNSF representatives have stated that they prefer not to have a platform in their ROW in this location due to operational congestion and track capacity because of the high volume of freight traffic on their Main Line (Project Meeting, February 25, 2009).

9. The Highgrove station would require an inner-track fence to separate the station track (4th track) from the three BNSF Main Line tracks for safety reasons. This would move the 4th track further east, thus requiring a design modification to the Citrus Connection curve increasing the degree of the curve causing decreased train speed, higher wheel noise, and higher maintenance due to the increased wear on the track. In addition, the minimum width with required clearances (approximately 44 feet) would force the platform to encroach into the driveway. Per an easement in the CC&R's for the purchase of the property by RCTC, access from this western driveway must be maintained for the owner of the warehouse development on the southern parcels.

10. There is adequate bus service to the area proposed for the Highgrove station alternative, but there would be no on-site bus drop-off area near the platform because of the constrained space between the platform and the existing open access driveway. Bus passengers would be dropped off curb-side on either Iowa Avenue or Citrus Street.

11. Reconfiguration of Citrus Street would be required. It is agreed that the Citrus Street connection to Iowa Avenue will remain unchanged. Because of the length of the platform and the required distance (150') from the switch for the Citrus Connector track, reconfiguration, including real property acquisition on the east side of the street, would be required to move Citrus Street eastward where it curves adjacent to the BNSF Main Line ROW. This would result in an increase in project cost related to the property acquisition and the road reconfiguration. These costs would not be required for the Hunter Park station location.

12. A possible option to attempt to accommodate a station in the Highgrove location just south of the Citrus Connection is for RCTC to purchase the western-most building and property of the existing warehouse development on Parcel 4, demolish the building, and convert the property to on-site bus drop-off, disabled parking, and kiss-and-ride (drop off area with no parking) drop-off. This option presents traffic and congestion challenges due to the single entry and exit for passenger vehicles and buses. This would also require the demolition of the newly constructed industrial buildings at the site. Additionally, the vehicular access issues discussed above for the parcels north of the Citrus Connection would remain unchanged due to restrictions from the City of Riverside and CPUC.

As a result of additional study subsequent to the Site Plan Study prepared by STV Incorporated dated 2/27/09, the difference in cost to locate a station at this Highgrove site is now estimated at an additional $35 Million to $45 Million.

Many commenters suggested that the "existing" depot in Highgrove could be used as a station site to avoid the cost of constructing a new station. However, there is no existing Highgrove depot. The Highgrove depot was originally located just south of Center Street and was demolished in 1953 (DEIR Cultural Resources Technical Report, page 23). The former depot location is located approximately 2,300 north of Citrus Street and adjacent to where the BNSF mainline and the SJBL currently connect. This proposed location would only allow for access to the BNSF mainline and not the proposed PVL project because the PVL project does not travel that far north. Additionally, this area is a low income minority area that would be significantly impacted by moving services north of Villa Street.

> ~~There is limited parking capacity available at the Highgrove site; bus and public access to the site has moderate to severe traffic congestion implications to the neighborhood. The site plan also reveals potential impacts to environmental justice issues that would require acquisition of real estate. Platform configuration is not feasible in terms of location, operational congestion, track capacity, and public access specifically for handicapped patrons. Additionally, Citrus Street would need to be reconfigured, and access from Iowa Avenue, due to the planned grade separation, would require stairs and an elevator to access the station. The latest study indicates an estimated cost increase of about $6M in construction ($12M in project costs) in addition to the estimated construction cost for the Hunter Park area station, which is $7.2 million ($14.4 project cost). Right of way acquisition cost is not included in this estimate.~~

For all the above stated reasons, the Highgrove Station option was not included as a component of the PVL project or as a feasible alternative, and therefore is not evaluated further within this EIR.

## 2.3 STATEMENT OF GOALS AND OBJECTIVES

RCTC developed a Purpose and Need, as well as Goals and Objectives, for the PVL through the *San Jacinto Branchline/I-215 Corridor Study Alternatives Analysis* (STV Inc., 2004). The Alternatives Analysis (AA) is the FTA process for reaching a broad consensus on what type of improvement(s) best meet locally-defined Goals and Objectives for a specified study area. The Purpose and Need established through the AA was developed based upon understanding of the transportation conditions, problems, and issues in the study area that would need to be addressed by a major transportation investment.

The AA identified that the purpose of proposed transportation improvements is to provide alternatives to help alleviate traffic congestion on the freeway segment and arterials in the study area, thereby improving the mobility of people and goods. The improvements should also provide or improve linkages to the overall transportation system, support the achievement of regional air quality goals, and avoid environmental and community impacts to the extent possible.

As described above, the primary transportation facilities in this corridor include I-215, a limited access freeway with a segment that runs from Riverside to Perris in a south/southeasterly direction, and a limited use rail freight line, the SJBL. Both I-215 and the SJBL run approximately parallel to one another for the length of the corridor. The SJBL is an existing non-highway transportation ROW that is significantly underutilized from a passenger transportation perspective. As noted in the AA, opportunities to use this existing ROW have been explored in the past with general conclusions that it has the potential to relieve pressure on existing and forecasted congestion on the regional transportation network. The I-215/SJBL alignment is in need of an improved transportation system independent of the ever growing and increasingly congested roadway system. The needs of the I-215/SJBL alignment were developed through outreach to the public, affected communities, stakeholders and concerned individuals. The needs identified are listed below:

- Reduce roadway congestion;
- Provide transit travel options to growing population and employment centers;
- Coordinate transportation planning and community development; and,
- Improve use of underutilized transportation resources.

Transportation movement in the area occurs primarily via the heavily congested I-215 freeway, which overlaps SR-60 between Riverside and Moreno Valley. Current and planned freeway improvements cannot fully accommodate forecasted demand. In addition, potential freeway expansion beyond currently planned improvements would have substantial impacts on adjoining neighborhoods (STV Inc., 2004).

The northern end of the study area is served by SCRRA/Metrolink commuter rail service to San Bernardino, Los Angeles and Orange counties. Existing rail ROW, including BNSF and SJBL, could provide a transit alternative to I-215, avoiding the freeway bottleneck and congestion. This potential commuter rail service provides an opportunity for transferring some patrons to a transit mode within the study area, and provides the opportunity for extending commuter rail service further south and east into Riverside County.

Four goals and complementary objectives were established by RCTC for the I-215/SJBL alignment based on the corridor's issues and the potential for a transit system to achieve or help achieve the project's overall goals. The Goals and Objectives are:

*Goal 1 – Improve the Transportation System with Alternate Travel Choices*

Objective:

- Reduce highway congestion in the corridor;
- Improve the attractiveness of public transit as a commuter alternative to the automobile by making it available, reliable, and convenient to use;
- Establish and expand the regional transit network within and beyond the study corridor; and,
- Promote a seamless regional transit system.

*Goal 2 – Promote Community/Transit Oriented Development*

Objective:

- Strengthen the older urban communities as centers of economic opportunity;
- Broaden the range and availability of public transportation alternatives between the various urban areas along the corridor for a variety of trip purposes;
- Encourage transit-friendly communities, at higher densities; foster transit-oriented development around transit stations; and,

- Provide improved mobility opportunities to the transit dependent.

*Goal 3 – Minimize Adverse Environmental Impacts*

Objective:

- Contain residential, commercial, and industrial “sprawl” development;
- Conform to the State Implementation Plan (SIP) as required by the Clean Air Act (CAA) Amendments of 1990;
- Minimize impacts to the natural and human-made environment; and,
- Minimize the need for new ROW, thereby reducing land use impacts to the study corridor.

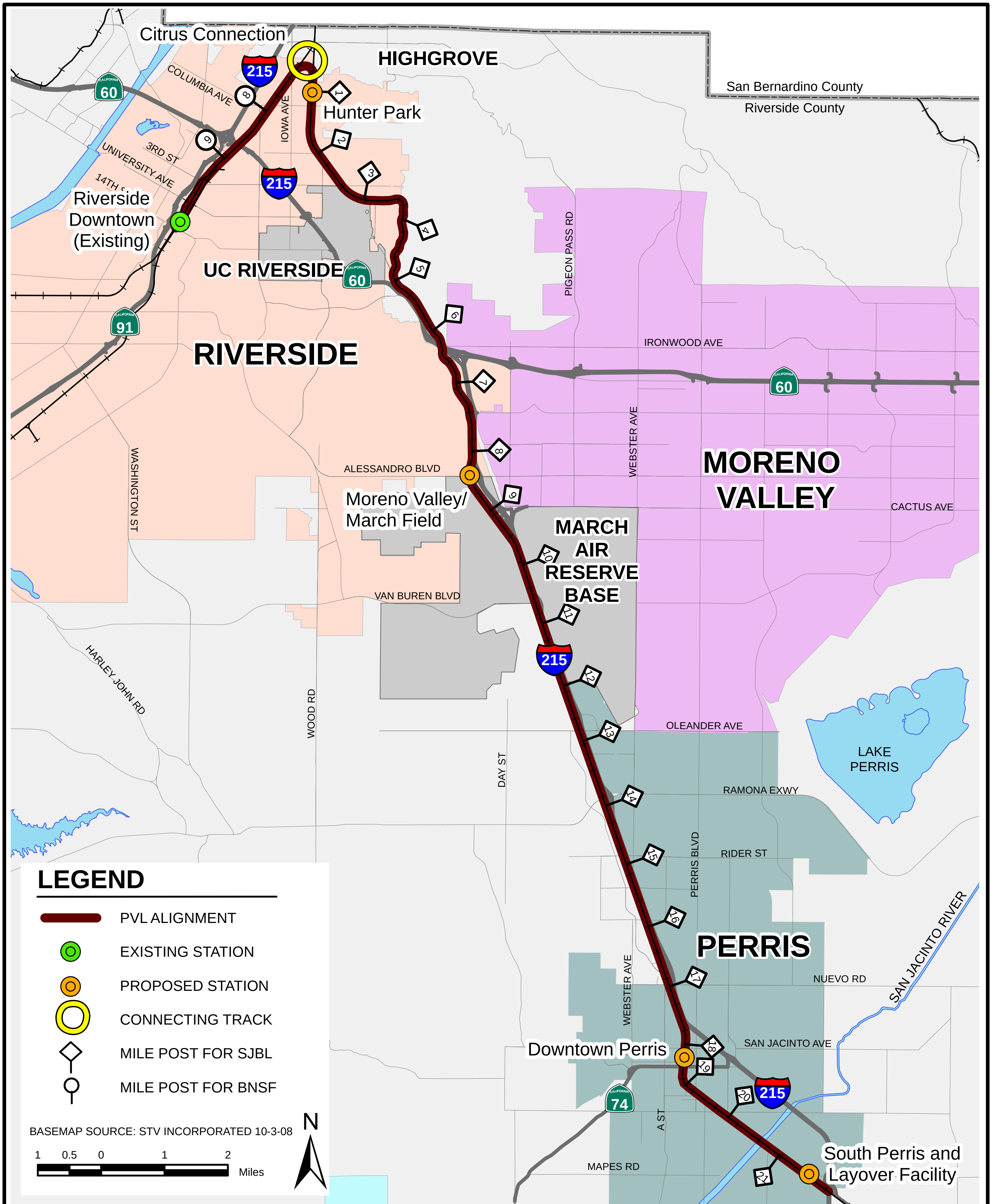
*Goal 4 – Invest and Deploy Resources Effectively and Efficiently*

Objective:

- Invest resources efficiently;
- Improve the productivity and cost-effectiveness of transit services in the corridor;
- Enhance and build upon the existing public transportation system within the corridor; and,
- Select investments that build upon underused and abandoned transportation resources.

## 2.4 PROJECT DESCRIPTION

The proposed PVL project would consist of the existing BNSF and SJBL alignments, and corridor Mile Post (MP) locations along the SJBL alignment are shown on Figure 2.4-1. The proposed PVL project would be an extension of the SCRRA/Metrolink 91 line from the existing Riverside Downtown Station, as shown on Figure 2.4-2, along a portion of the BNSF main line and would connect to the SJBL using the proposed Citrus Connection. For the opening year of 2012, the PVL would include installation and rehabilitation of track; construction of four stations and a Layover Facility; improvements to existing grade crossings and select~~ed~~ culverts; installation of new traffic signals, replacement of two existing bridges along the SJBL at the San Jacinto River; and construction of communication towers and landscape walls. (In the context of the PVL project, the term “landscape wall” describes a free-standing, masonry block walls to be constructed to provide a visual screen; landscape walls have no noise mitigation role. A landscape wall will be constructed as part of the PVL project at Highland Elementary School and Hyatt Elementary School. Additionally, RCTC will fund another landscape wall at Nan Sanders Elementary School. See Section 2.4.9 for additional details).

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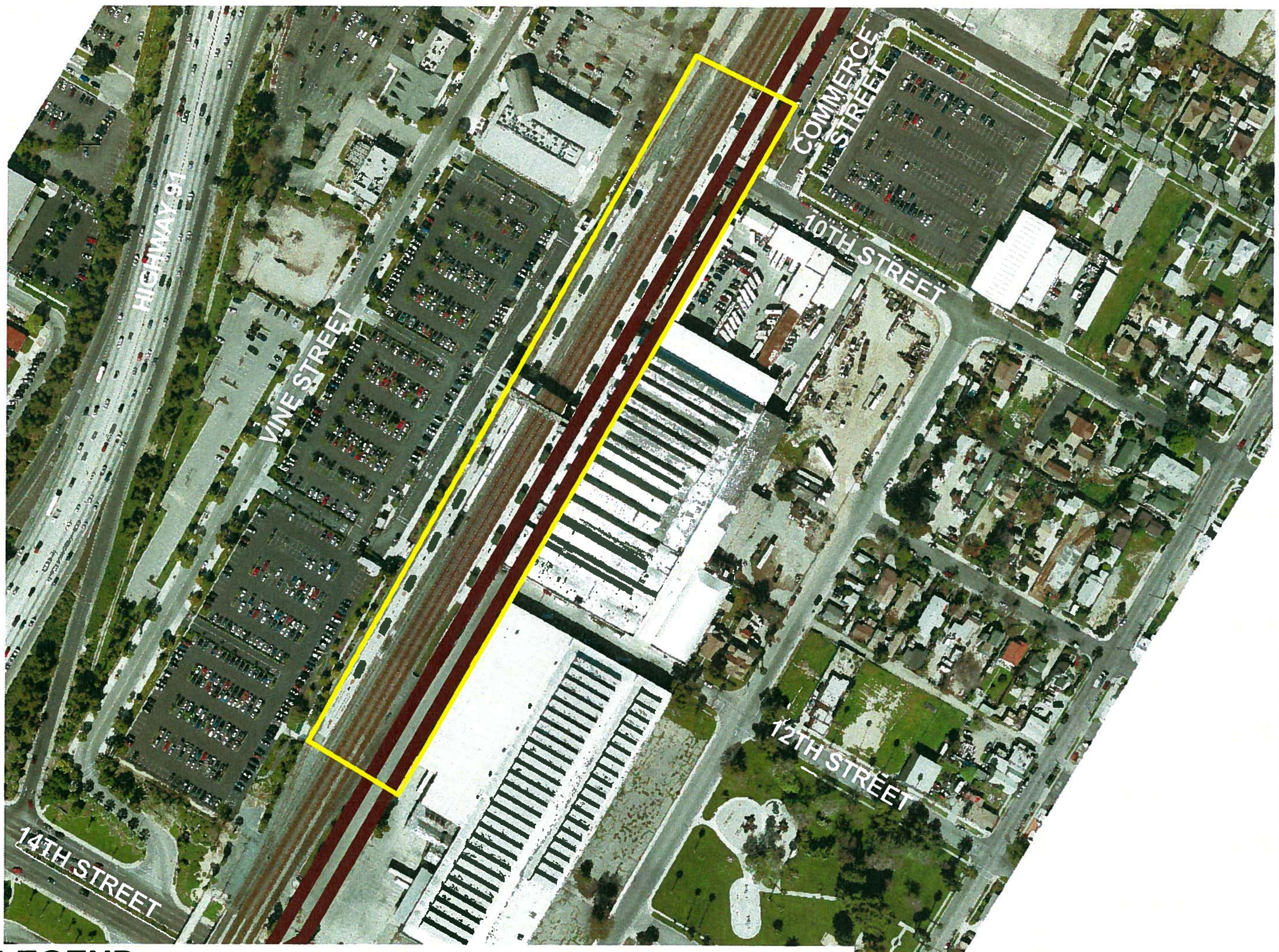
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 2/9/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666mpEIR.MXD |

PERRIS VALLEY LINE
CORRIDOR MILE POSTS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
2.4-1


SITE PHOTOGRAPH (VIEW NORTHEAST)




SITE AERIAL

## LEGEND

SITE BOUNDARY

PVL ALIGNMENT

0 300 Feet

N

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | RIVERSIDE DOWNTOWN (EXISTING) STATION | FIGURE |
| DRAWN: | 12/8/09 | | 2.4-2 |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666riverEIR.MXD | | | |

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Project features include:

- Construction of a new rail segment (Citrus Connection) between the BNSF and the SJBL;
- Replacement and rehabilitation of existing rail and railroad ties (as necessary);
- Installation of set-out tracks;
- Construction of four ADA-compliant commuter rail stations;
- Installation of a new bypass track along the I-215 corridor;
- Replacement of two bridges (San Jacinto River located at MP 20.70, and San Jacinto River Overflow Channel located at MP 20.80);
- Construction of a Layover Facility;
- Closure and improvements to existing grade crossings along the SJBL;
- Installation of traffic signals;
- Culvert replacement at designated locations;
- Construction of nine communication towers;
- Construction of landscape walls at ~~selected locations; and~~Highland Elementary School and Hyatt Elementary School and provision for one at Nan Sanders Elementary School; and~~,~~
- Street improvements at designated locations.

*2.4.1 Track Improvements*

All track improvements would occur within the existing SJBL ROW. Work would meet SCRRA/Metrolink commuter rail standards. This work would include replacement of wood ties with concrete ties and new ballast (as necessary). In order to more accurately describe the improvements to the track, the alignment is broken into the following segments with the identified changes, as shown on Figure 2.4-3:

- Citrus Connection: To connect the BNSF to the SJBL, a new approximately 2,000-foot long track would be constructed, as shown on Figure 2.4-4 and Figure 2.4-5.
- MP 1.40 to MP 5.10~~3.50~~ (approximately Marlborough Avenue south to Poarch Road~~Mount Vernon Avenue~~): The track would be upgraded with new concrete ties, new welded rail, and new ballast as required.
- MP 5.10~~3.50~~ to MP 7.00 (approximately Poarch Road~~Mount Vernon Avenue~~ to Box Springs Boulevard): Wooden ties would be replaced as needed and new ballast added.

- MP 7.00 to approximately MP 7.50 (approximately Box Springs Boulevard to Eastridge Avenue): This track would be upgraded with new concrete ties and new welded rail.

- MP 7.50 to MP 16.90 (approximately Eastridge Avenue to Nuevo Road): A second track, identified as a by-pass track, would be constructed on the I-215 side of the existing SJBL track within the existing RCTC ROW. This track would be constructed with new concrete ties and new welded rail. The existing track would remain for freight service only, but would be moved slightly where the ROW passes underneath roadway overpasses. This change is required to allow for enough clearance for both tracks and the supports for the roadway overpasses.

- MP 16.90 to MP 18.20 (approximately Nuevo Road to San Jacinto Avenue): The track would be upgraded with new concrete ties and new welded rail.

- MP 18.20 to approximately MP 19.00 (approximately San Jacinto Avenue to D Street/8th Street): The track would be relocated so that the PVL would align with the new platforms at the Perris Multimodal Transit Facility. The new track would be constructed of new concrete ties and new welded rail, approximately 18 feet from the existing track, and the existing track would be removed.

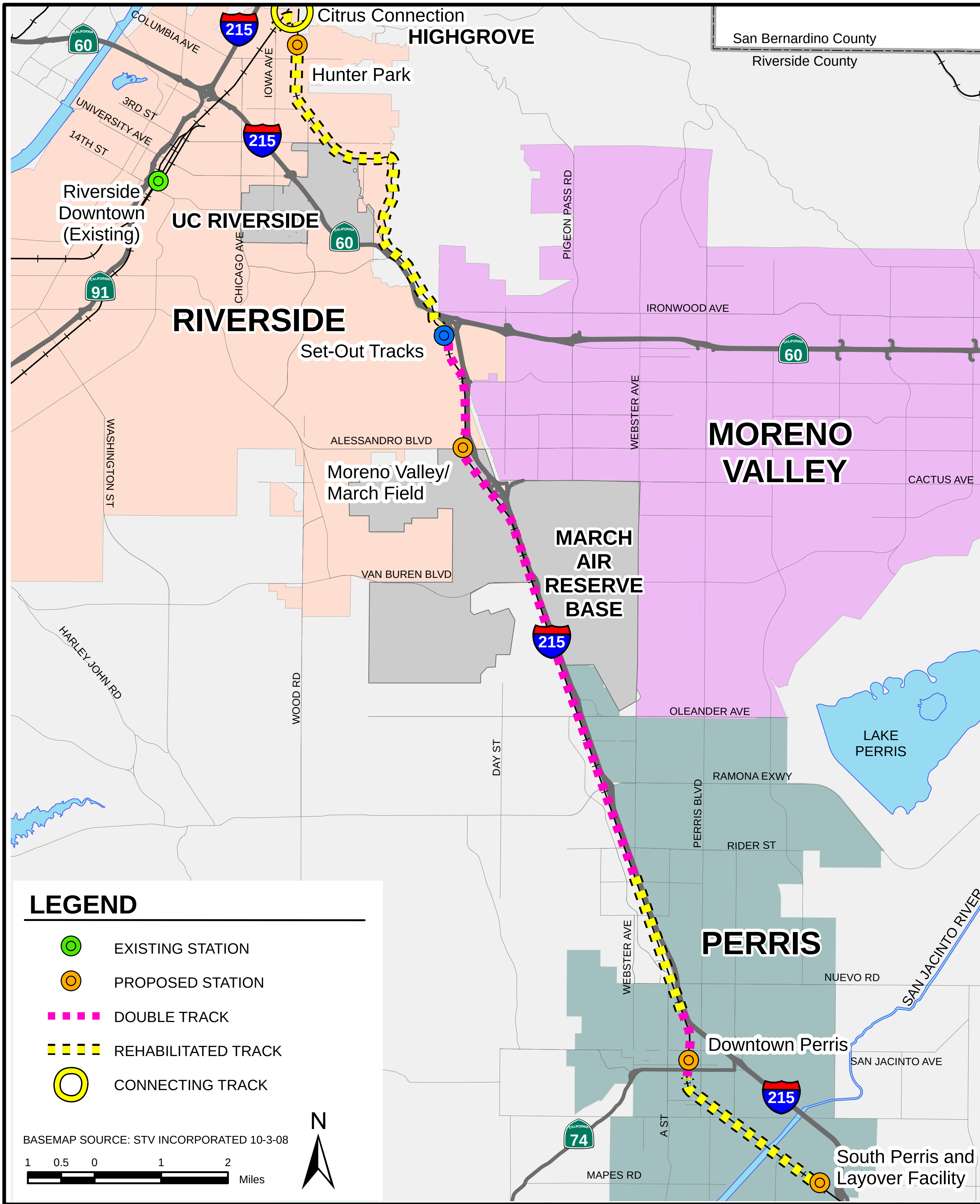
- MP 19.00 to MP 22.00 (approximately D Street/8th Street to I-215): The track would be upgraded on the existing alignment with new concrete ties, new welded rail, and new ballast.

### *2.4.2 Stations and Other Facilities*

<u>Stations</u>

Based on projected ridership, RCTC is proposing four stations for the opening year of 2012 including Hunter Park Station (one of three studied locations), Moreno Valley/March Field Station, Downtown Perris Station, and South Perris Station.

Each of the proposed stations built as part of the PVL project would be constructed with 680-foot long side platforms, and ADA-compliant in accordance with federal law and SCRRA/Metrolink design standards, as shown on Figure 2.4-6. The "typical" platform is constructed of concrete with steps up and ADA-compliant walkways from the surrounding grade to reach track elevation. In addition to the platform, there would be a trackside canopy structure, ticket kiosks, schedule information, a shelter comprised of mast-supported roof planes (sloped to facilitate drainage), and decorative fencing to direct riders to the appropriate areas for either boarding or disembarking from trains as shown on Figure 2.4-7. All parking areas would be at-grade. Each station is described below in greater detail.

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| PROJECT NO. | 92666 |
| DRAWN: | 1/30/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666impr1EIR.MXD |

SJBL TRACK IMPROVEMENTS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

2.4-3

## LEGEND

PVL ALIGNMENT

SITE BOUNDARY

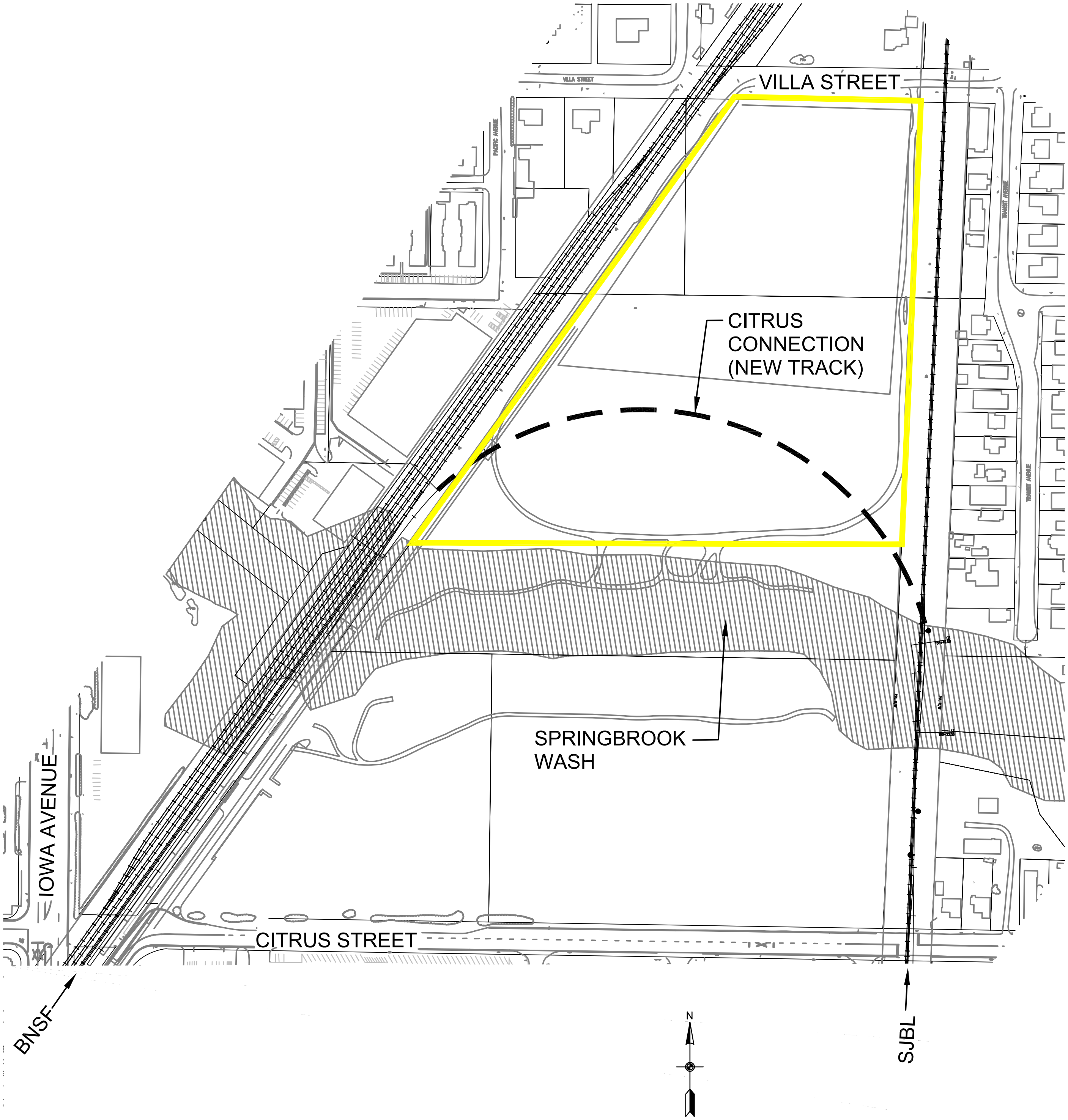
**SITE PHOTOGRAPH (VIEW WEST)**


**SITE AERIAL**

N

0 300 Feet

| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | | CITRUS CONNECTION | FIGURE |
| DRAWN: 12/8/09 | | | |
| DRAWN BY: JP | | | 2.4-4 |
| CHECKED BY: RM | | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666citrusEIR.MXD | | | |




**LEGEND**

SITE BOUNDARY

SOURCE:

30% DESIGN DRAWINGS

NOT TO SCALE

| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 11/23/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666citrusE_EIR.dwg |

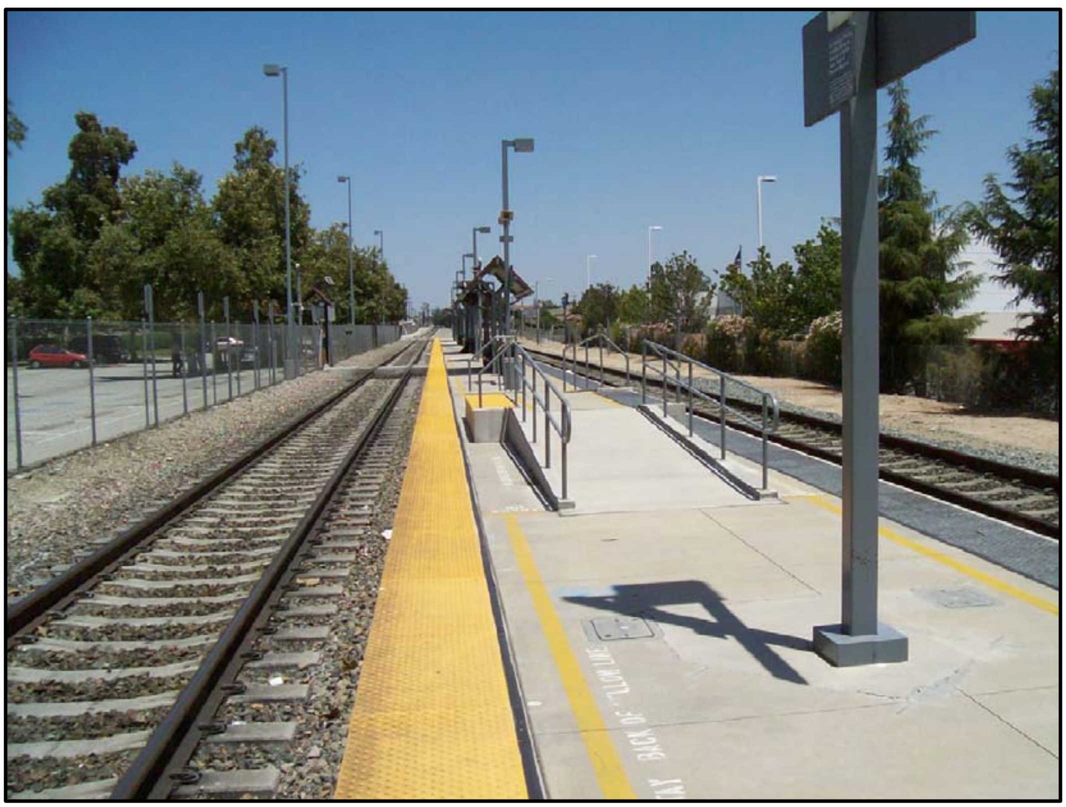
**CITRUS CONNECTION ENGINEERING SITE PLAN**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

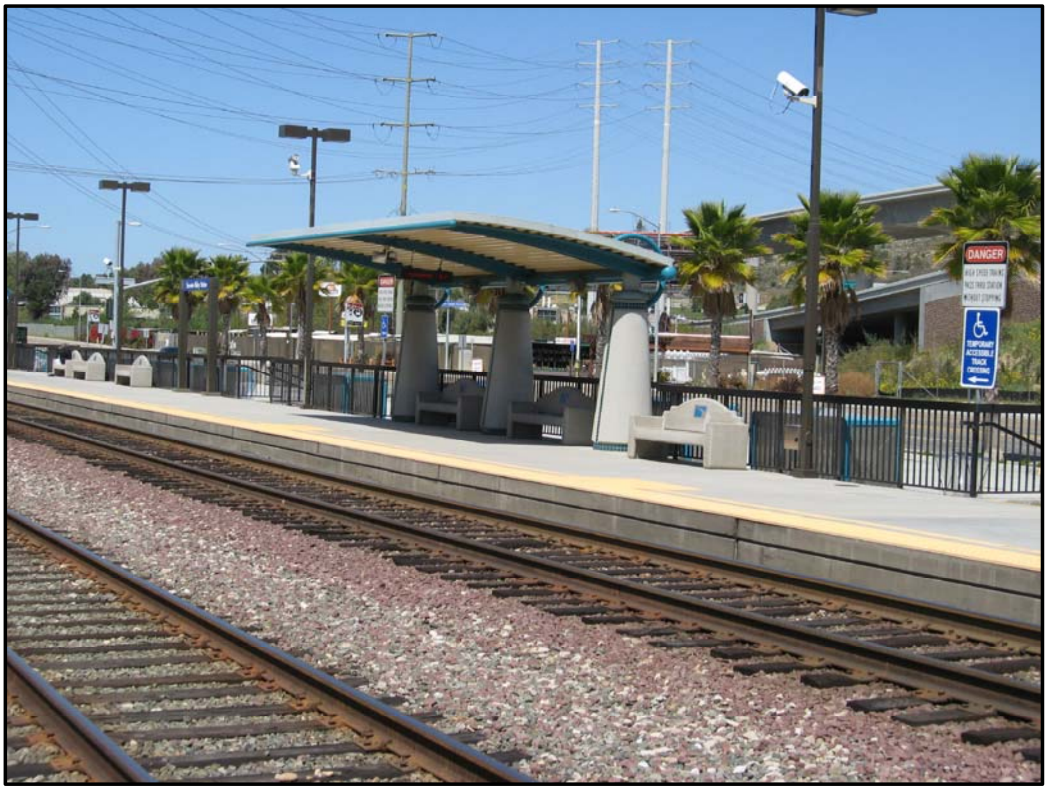
2.4-5

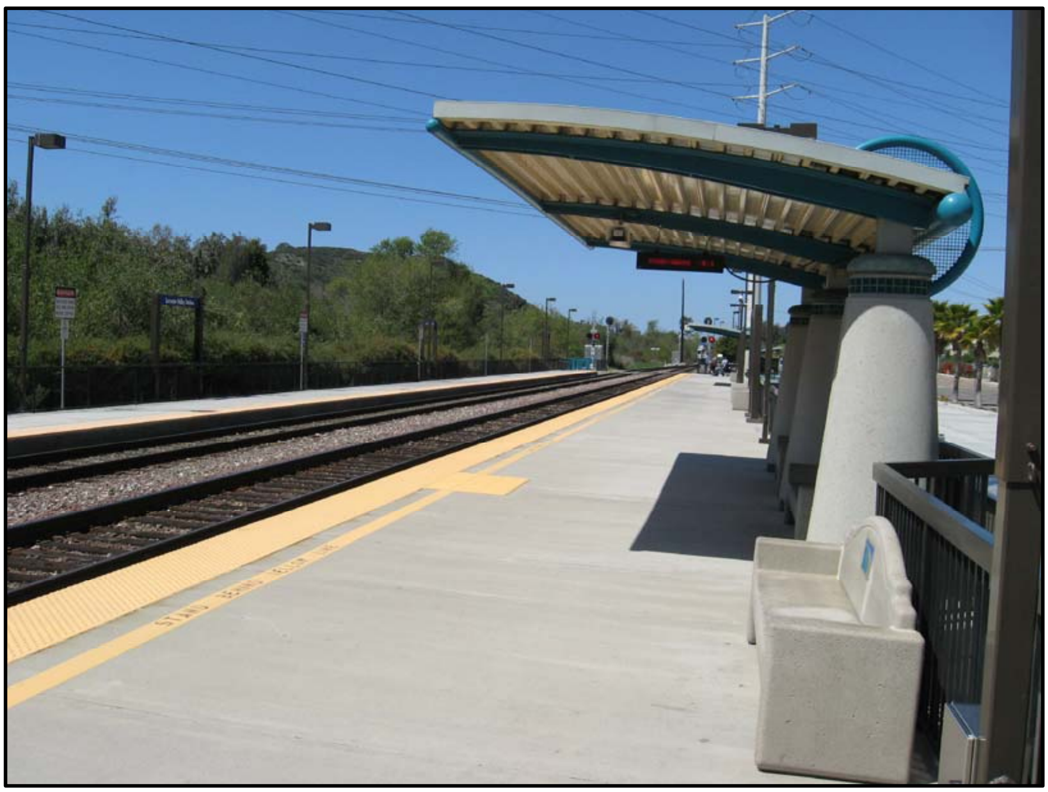

**BARRIER-FREE PATH OF TRAVEL FROM PARKING LOT TO PLATFORM**




**MINI-HIGH PLATFORM FOR BOARDING AT FLOOR LEVEL OF TRAIN CARS**

| | | | |
|---|---|---|---|
| Perris Valley Line / RCTC / KLEINFELDER Bright People. Right Solutions. | PROJECT NO. 92666 | **TYPICAL STATION FEATURES FOR ADA MOBILITY** | FIGURE |
| | DRAWN: 11/23/09 | | |
| | DRAWN BY: JP | | **2.4-6** |
| | CHECKED BY: RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| | FILE NAME: 92666PHOTO1EIR.dwg | | |





| PROJECT NO. | 92666 |
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| DRAWN: | 11/23/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: 92666PHOTO_EIR.dwg | |

**TYPICAL VIEWS OF PLATFORM AND CANOPY STRUCTURE**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
**2.4-7**

For 2012, the four proposed stations are:

- Hunter Park Station, as illustrated on Figure 2.4-8, would be located east of I-215 at one of three proximate site options, shown on Figure 2.4-9, Figure 2.4-10, and Figure 2.4-11. The Palmyrita Station option is proposed for the east side of the SJBL main track at Iowa Avenue between Palmyrita and Columbia Avenues. The Columbia and Marlborough Station options have been identified on the west side of the main track, with entry and exit from Columbia and Marlborough Avenues, respectively. Selection of the Palmyrita Station option would require a new main track to be constructed east of the existing SJBL, between Citrus Street and Marlborough Avenue, to accommodate the station. Any of these station options would accommodate parking for approximately 480 vehicles and cover approximately 8 acres including landscaping.
- Moreno Valley/March Field Station would be located west of I-215 and south of Alessandro Boulevard on property currently owned by the March Joint Powers Authority (March JPA) and would be donated to RCTC. RCTC would be responsible for the construction, operation, and maintenance of the station and parking areas as shown on Figure 2.4-12 and Figure 2.4-13. The associated parking area would have a capacity of approximately 445 vehicles and cover approximately 7 acres including landscaping.
- Downtown Perris Station would be located southwest of I-215 between San Jacinto Avenue and 4th Street at the existing Perris Multimodal Transit Facility, as shown on Figure 2.4-14 and Figure 2.4-15. Improvements to be undertaken by RCTC would include; an expansion of the existing parking capacity to approximately 440 spaces covering approximately 6 acres including landscaping and track realignment within the ROW to allow for proper spacing between the platform and the train. The Perris Multimodal Transit Facility, currently under construction, would include eight bus bays and five canopies. The facility would be operated as a bus terminal by Riverside Transit Agency (RTA) prior to the opening of the proposed PVL project. With the opening of the PVL, it would become a multimodal transit facility.
- South Perris Station would be located west of I-215 near the intersection of the SJBL ROW and State Route 74 (SR-74), as shown on Figure 2.4-16 and Figure 2.4-17. The associated parking area would have a capacity of approximately 880 vehicles and cover approximately 11 acres including landscaping.

It should be noted that the rail station lay-out and design will be coordinated with the appropriate land use agencies (i.e. City of Riverside, March JPA, and City of Perris).

Layover Facility

The proposed Layover Facility would be located southeast of the South Perris Station and west of I-215, as shown on Figure 2.4-18 and Figure 2.4-19. In the 2012 opening year, the Layover Facility would accommodate four ten-car trains arriving from Riverside in the afternoon. Trains would be stored overnight on the four storage tracks (approximately 1,000 feet in length), and would receive light maintenance, cleaning, and operational testing prior to morning departures. The Layover Facility would include an ADA-accessible employee support building with modular offices, storage, and parking. The parking capacity is approximately 40 vehicles covering an area of less than one acre. The employee support building would be raised by six feet to remain out of the 100-year floodplain.

**SITE PHOTOGRAPH - MARLBOROUGH (VIEW SOUTH)**

**SITE PHOTOGRAPH - COLUMBIA (VIEW SOUTH)**

**SITE PHOTOGRAPH - PALMYRITA (VIEW NORTH)**


**SITE AERIAL**

N

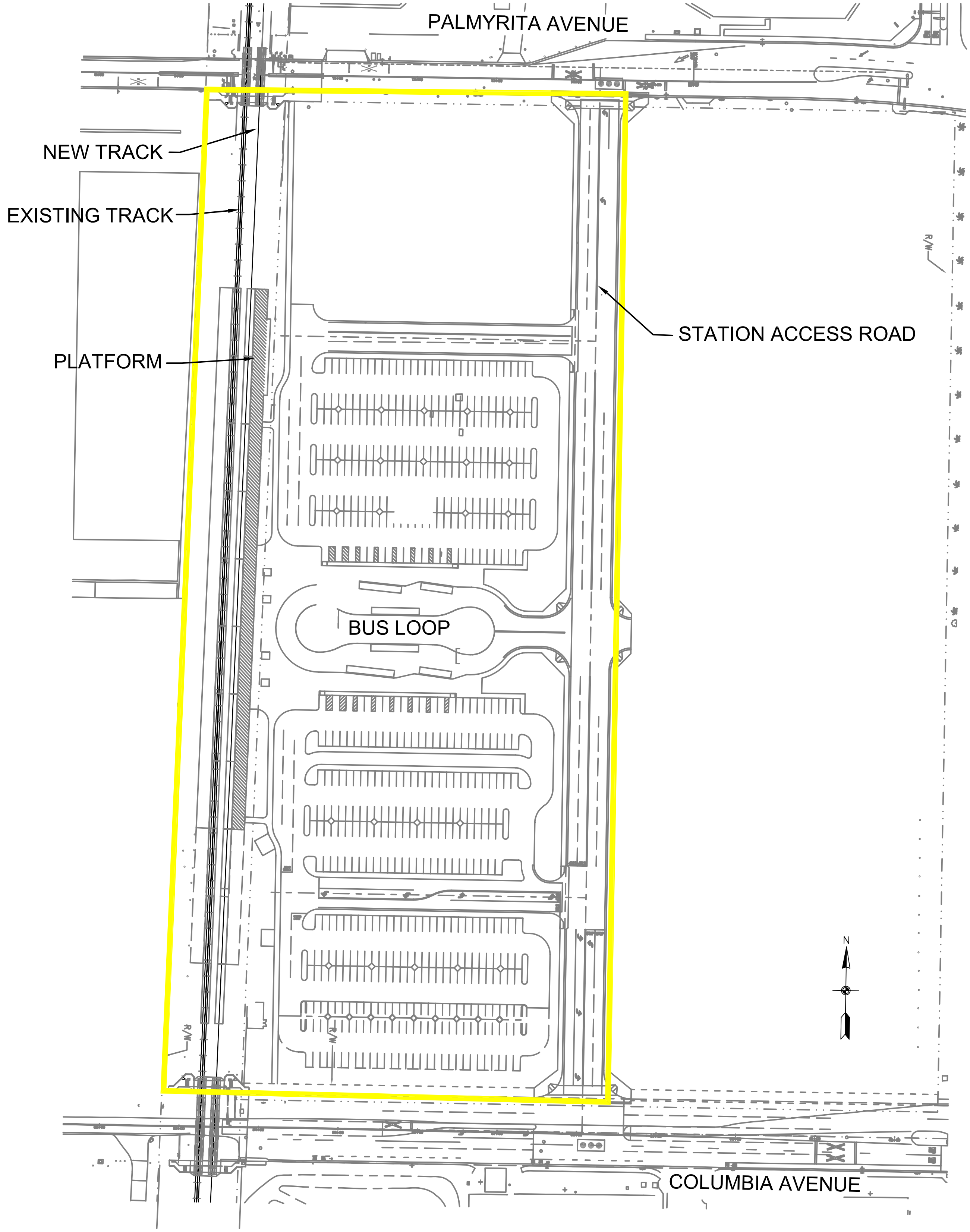
0 500 Feet

## LEGEND

SITE BOUNDARY

PVL ALIGNMENT

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | HUNTER PARK STATION OPTIONS | FIGURE 2.4-8 |
| DRAWN: | 12/8/09 | | |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666stationsEIR.MXD | | | |




SOURCE:

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**LEGEND**

SITE BOUNDARY

NOT TO SCALE

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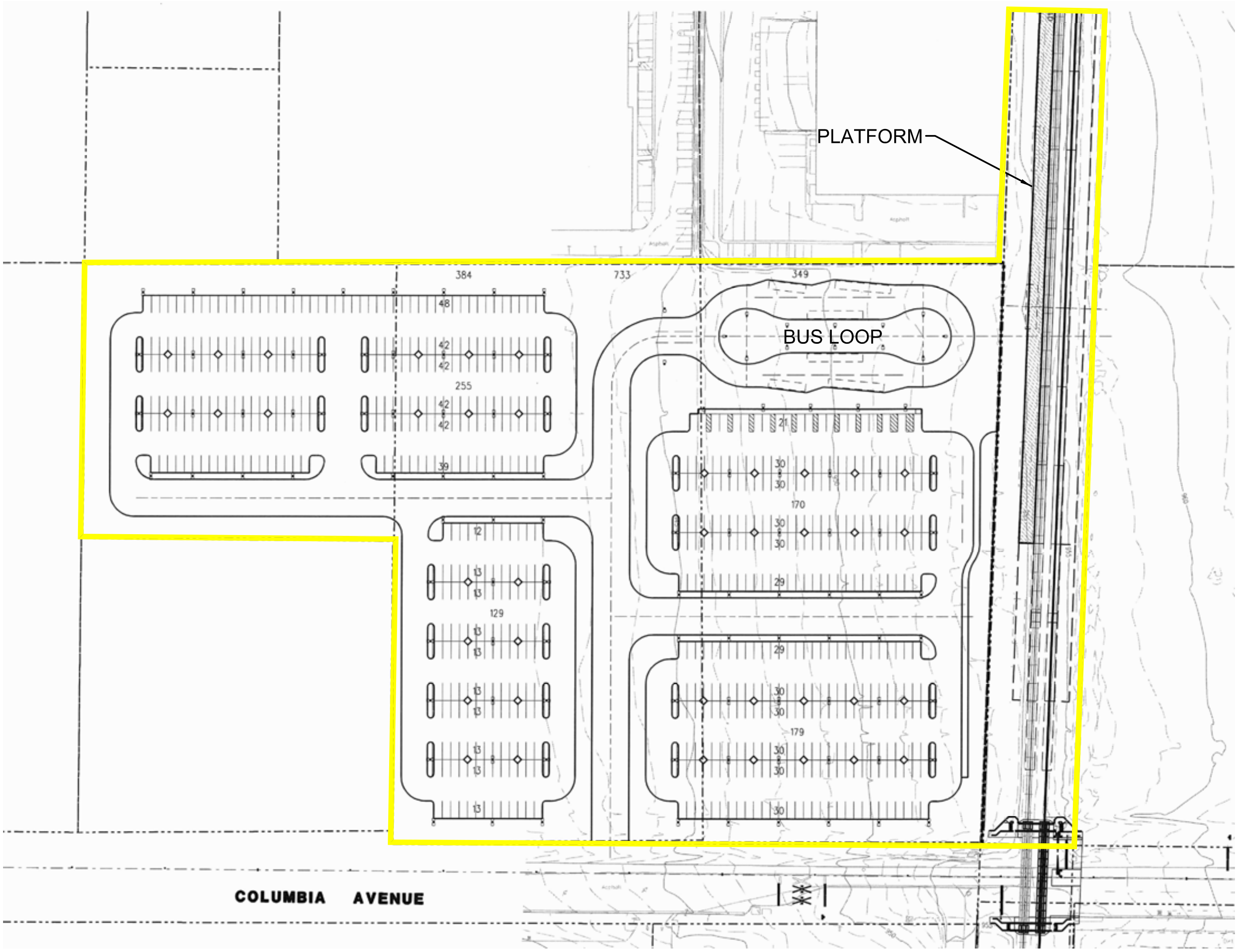
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 11/23/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666PalmE_EIR.dwg |

**HUNTER PARK STATION**
**PALMYRITA AVENUE OPTION**
**ENGINEERING SITE PLAN**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

**2.4-9**




SOURCE:

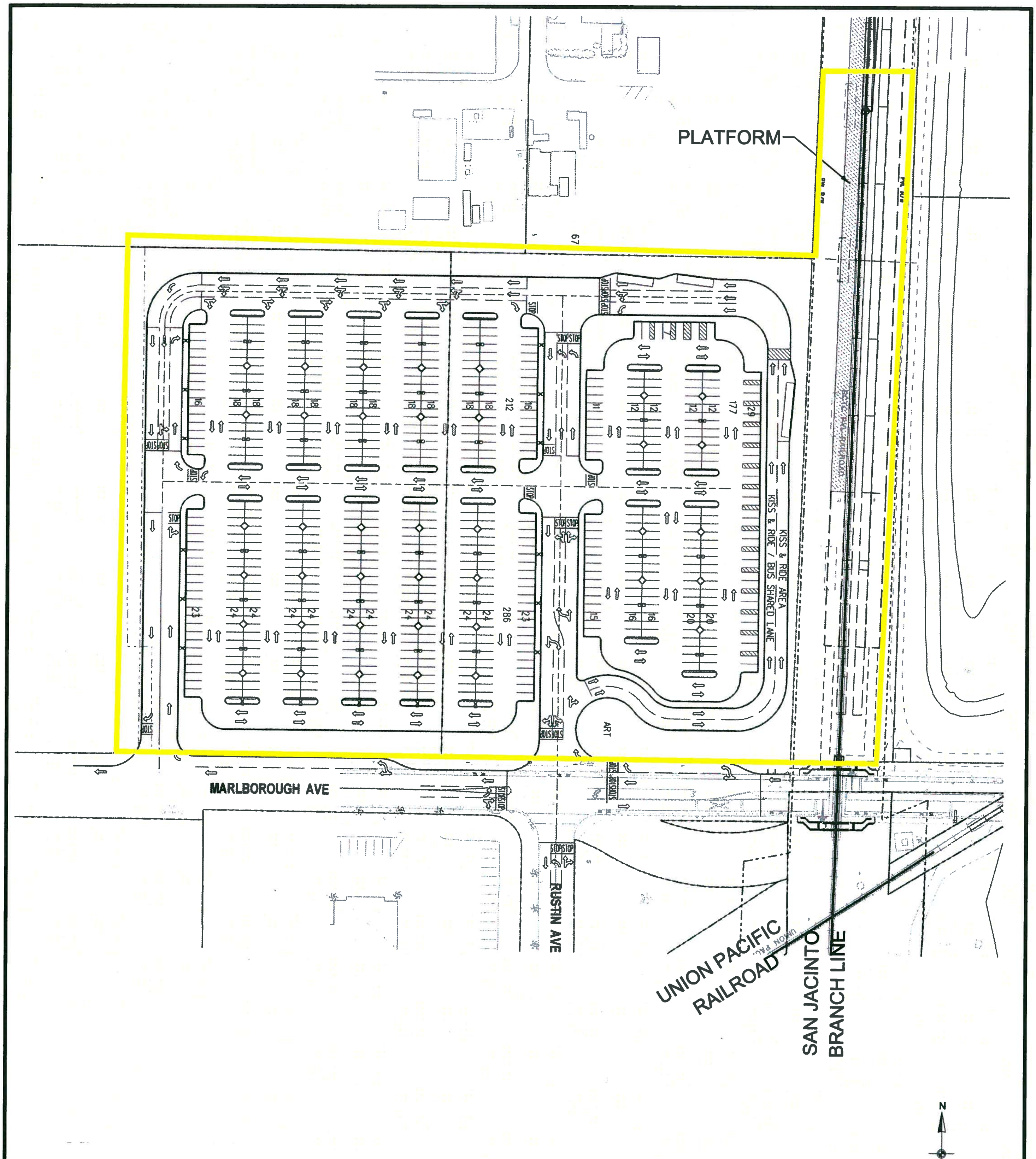
POST 30% DESIGN DRAWING UPDATE

**LEGEND**

SITE BOUNDARY

NOT TO SCALE

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | **HUNTER PARK STATION COLUMBIA AVENUE OPTION ENGINEERING SITE PLAN** | FIGURE |
| DRAWN: | 11/23/09 | | **2.4-10** |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666columE_EIR.dwg | | | |

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**LEGEND**

SITE BOUNDARY

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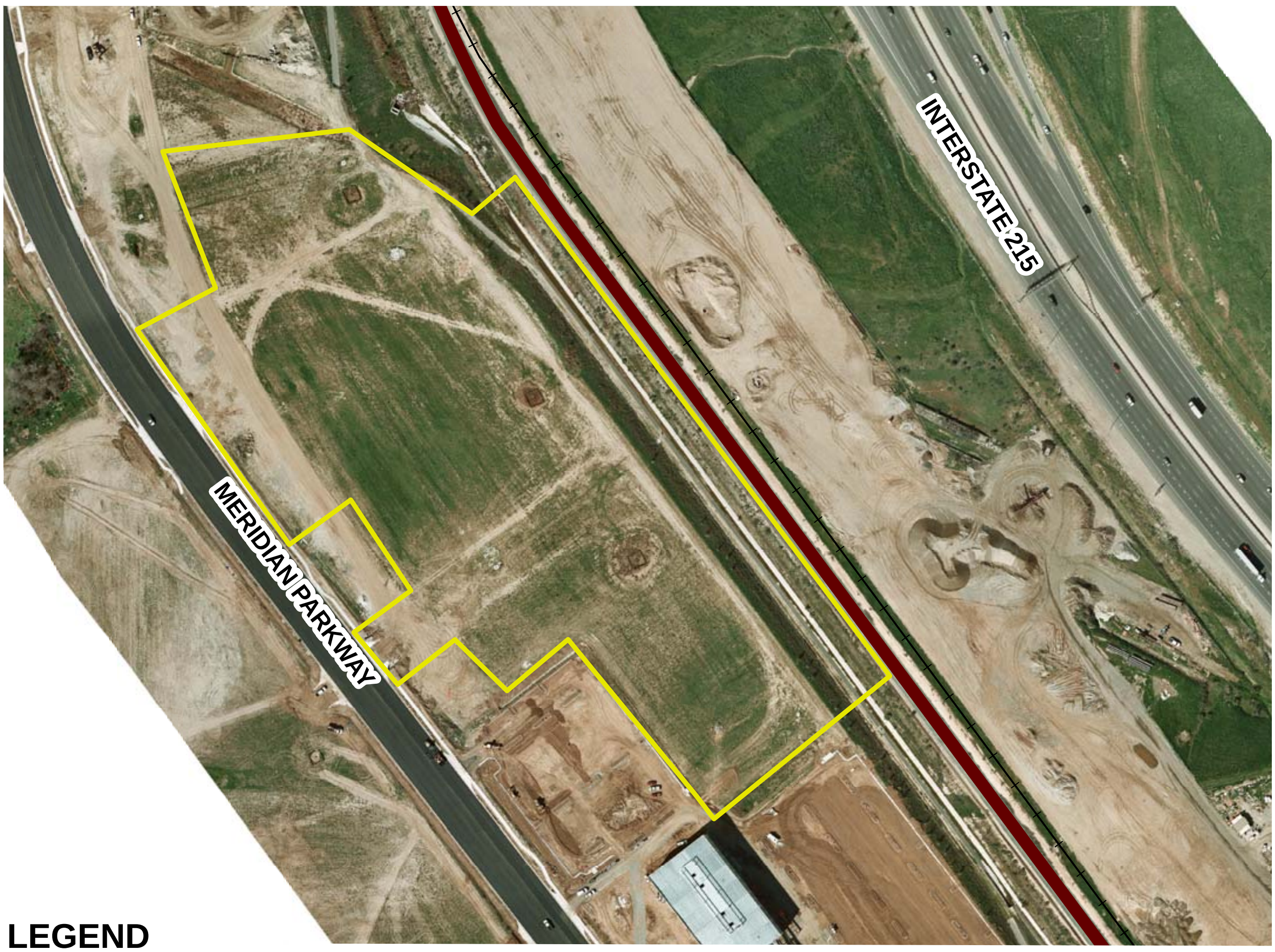
|---|---|---|---|
| PROJECT NO. 92666 | | **HUNTER PARK STATION MARLBOROUGH AVENUE OPTION ENGINEERING SITE PLAN** | FIGURE |
| DRAWN: 12/16/09 | | | **2.4-11** |
| DRAWN BY: JP | | ENVIRONMENTAL IMPACT REPORT | |
| CHECKED BY: RM | | RIVERSIDE COUNTY TRANSPORTATION COMMISSION | |
| FILE NAME: 92666marlE_EIR.dwg | | PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA | |

KLEINFELDER Bright People. Right Solutions.

**SITE PHOTOGRAPH (VIEW SOUTH)**




## LEGEND

- SITE BOUNDARY
- PVL ALIGNMENT

**SITE AERIAL**

N

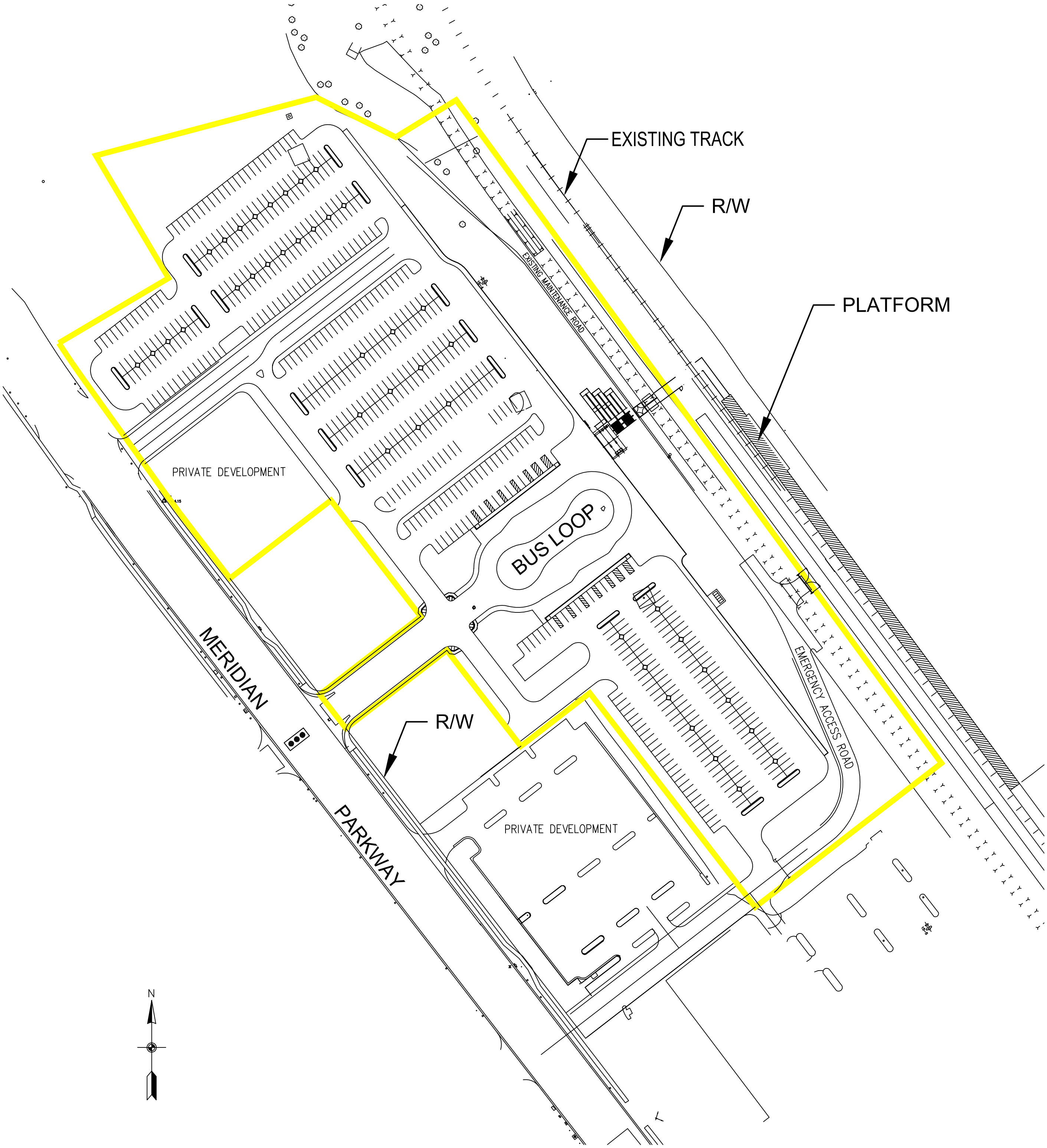
0 300 Feet

| | | | | |
|---|---|---|---|---|
| PROJECT NO. | 92666 | MORENO VALLEY/ MARCH FIELD STATION | FIGURE |
| DRAWN: | 12/8/09 | | | 
| DRAWN BY: | JP | | 2.4-12 |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT RIVERSIDE COUNTY TRANSPORTATION COMMISSION PERRIS VALLEY LINE RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666mv_mfEIR.MXD | | | |

Perris Valley Line

RCTC

KLEINFELDER




SOURCE:

30% DESIGN DRAWINGS

**LEGEND**

SITE BOUNDARY

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|---|---|---|---|
| PROJECT NO. | 92666 | **MORENO VALLEY/ MARCH FIELD STATION ENGINEERING SITE PLAN** | FIGURE |
| DRAWN: | 11/23/09 | | |
| DRAWN BY: | JP | | **2.4-13** |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME:<br>92666morenoE_EIR.dwg | | | |

## LEGEND

SITE BOUNDARY

PVL ALIGNMENT

**SITE PHOTOGRAPH (VIEW NORTH)**


**SITE AERIAL**

N

0 300 Feet

| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | | DOWNTOWN PERRIS STATION | FIGURE |
| DRAWN: 12/8/09 | | | |
| DRAWN BY: JP | | | 2.4-14 |
| CHECKED BY: RM | | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
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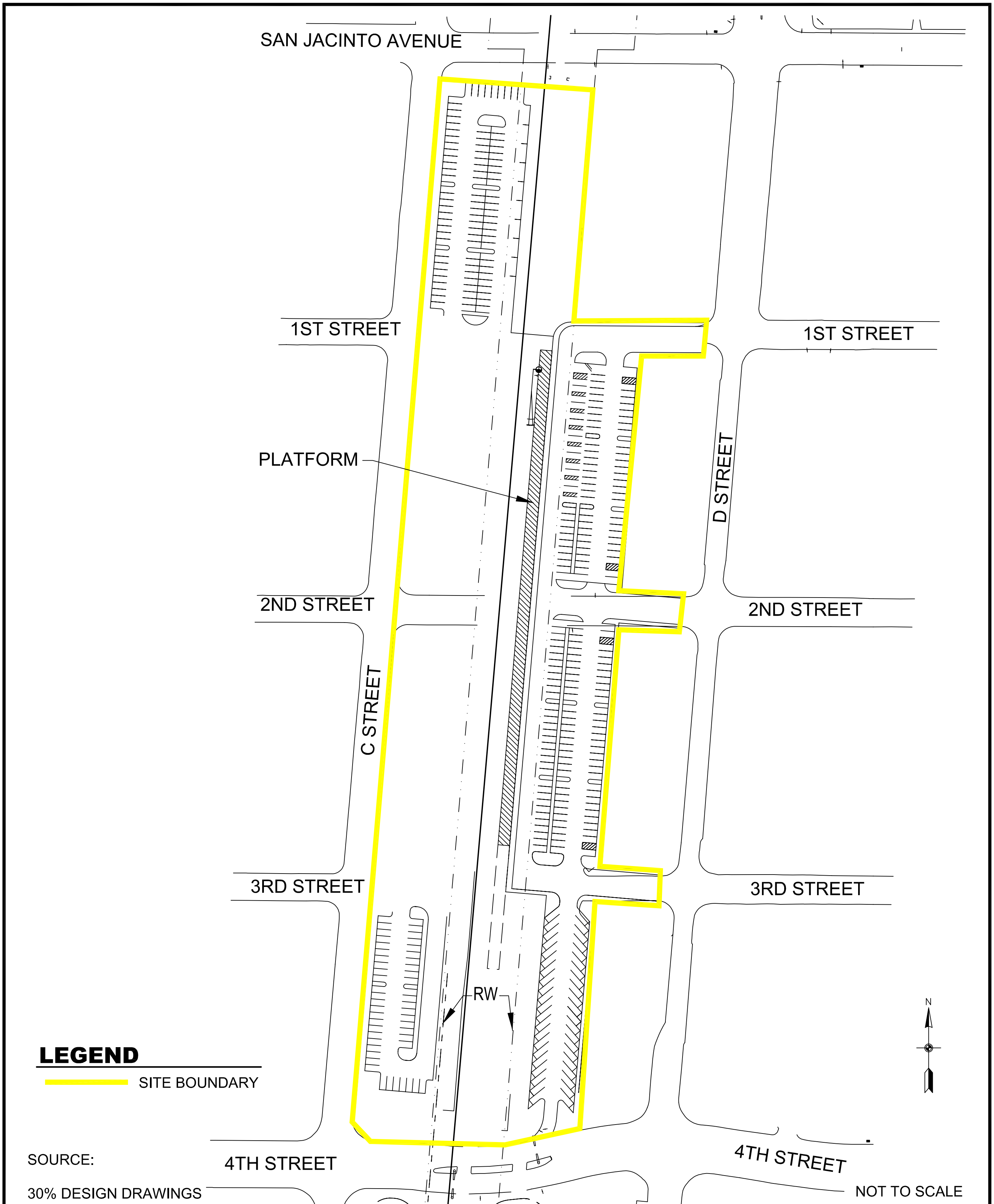


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|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 11/23/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666DPerrisE_EIR.dwg |

**DOWNTOWN PERRIS STATION ENGINEERING SITE PLAN**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

**2.4-15**

SITE PHOTOGRAPH (VIEW NORTH)


## LEGEND

SITE BOUNDARY

PVL ALIGNMENT

SITE AERIAL

N

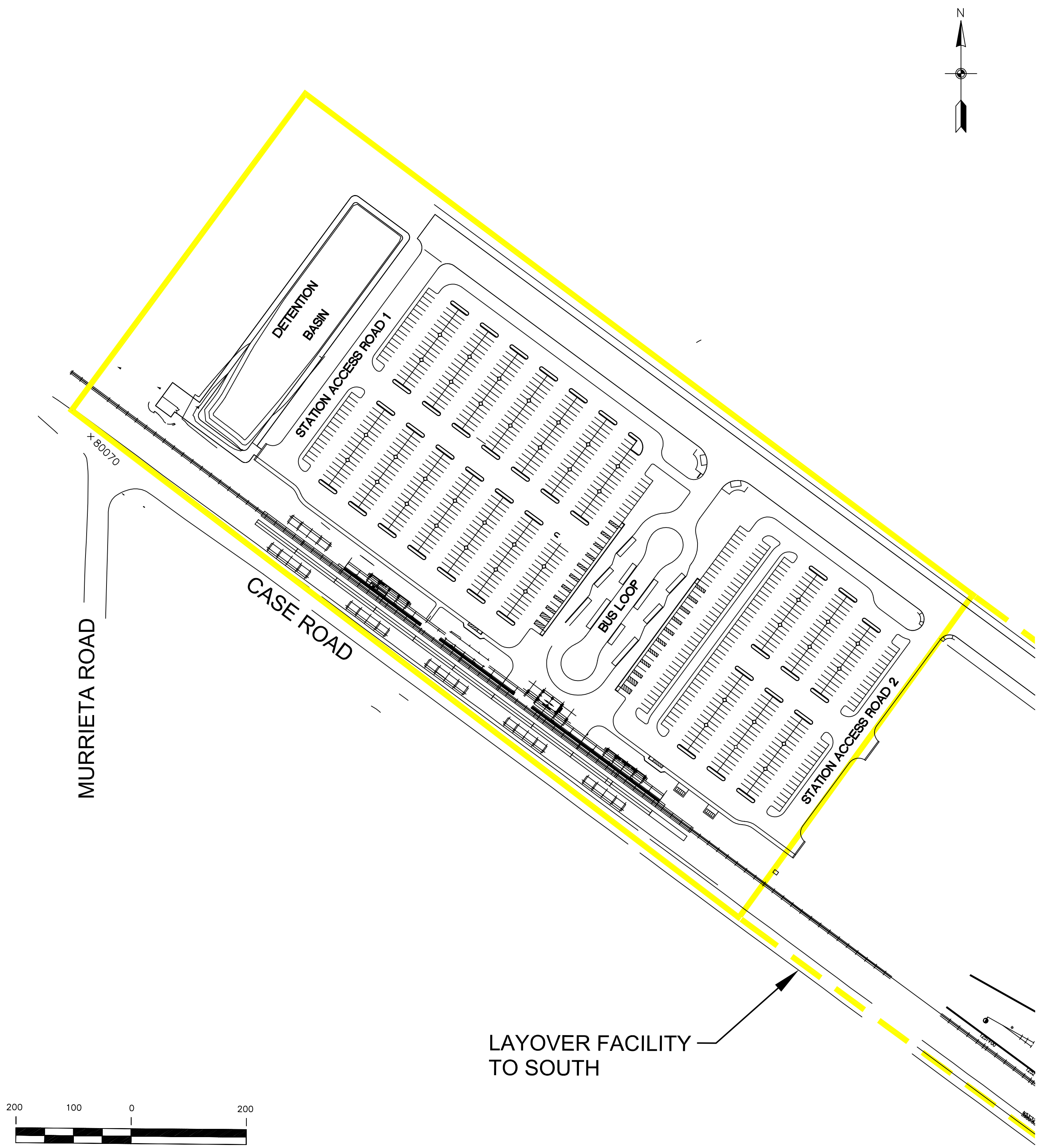
0 1,000 Feet

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | SOUTH PERRIS STATION | FIGURE |
| DRAWN: | 12/8/09 | | |
| DRAWN BY: | JP | | 2.4-16 |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME:<br>92666perrisEIR.MXD | | | |

Perris Valley Line RIVERSIDE—MORENO VALLEY—PERRIS

RCTC

KLEINFELDER Bright People. Right Solutions.




SOURCE:

65% DESIGN DRAWINGS

**LEGEND**

SITE BOUNDARY

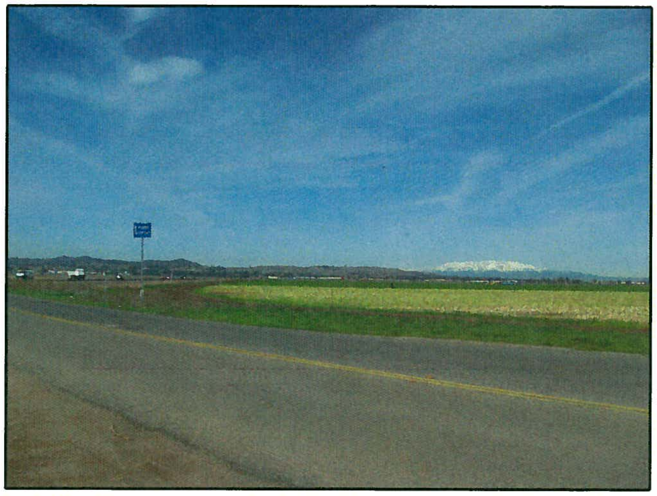
| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 4/7/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666PerrisE_EIR.dwg |

**SOUTH PERRIS STATION ENGINEERING SITE PLAN**

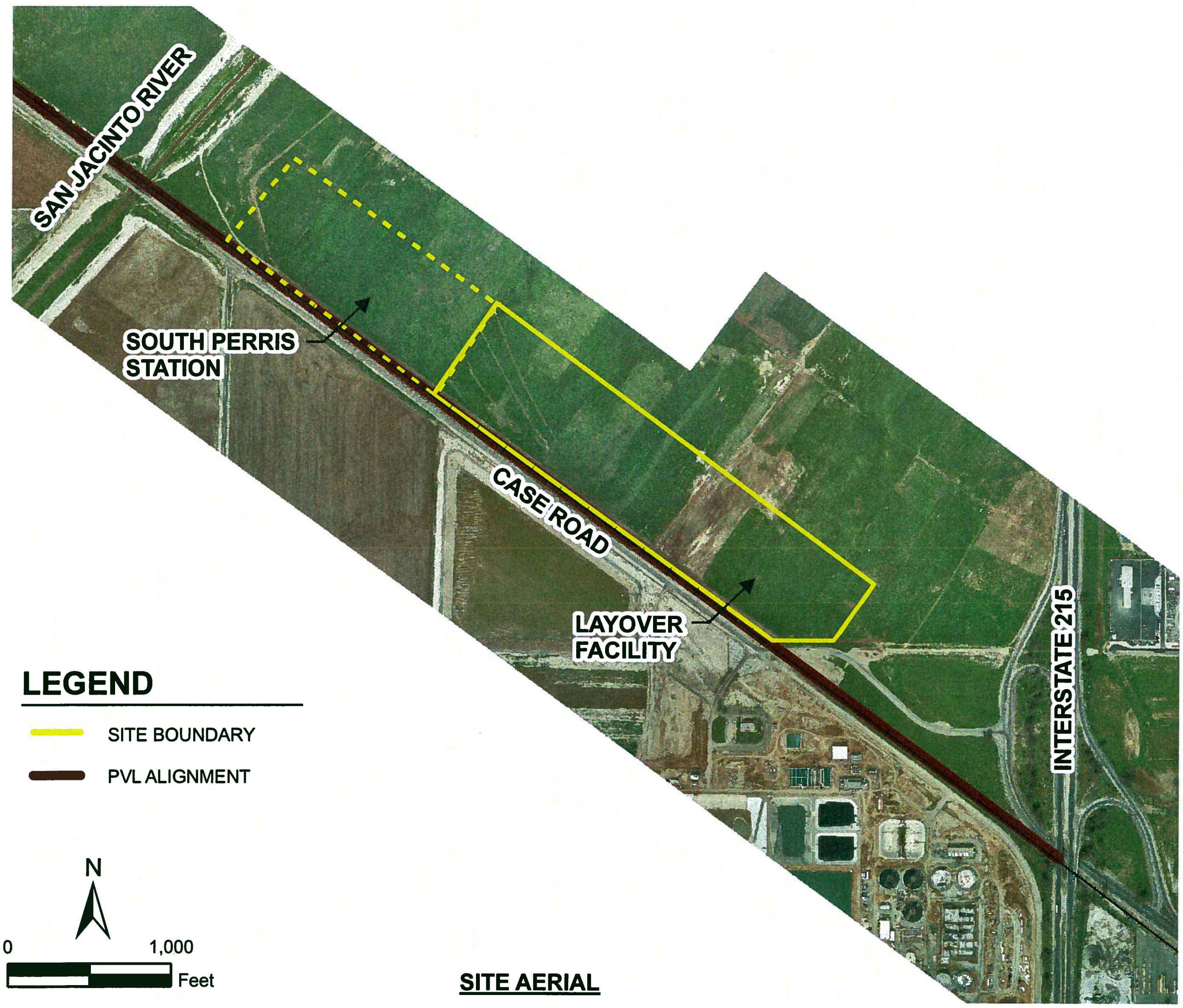
ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

2.4-17

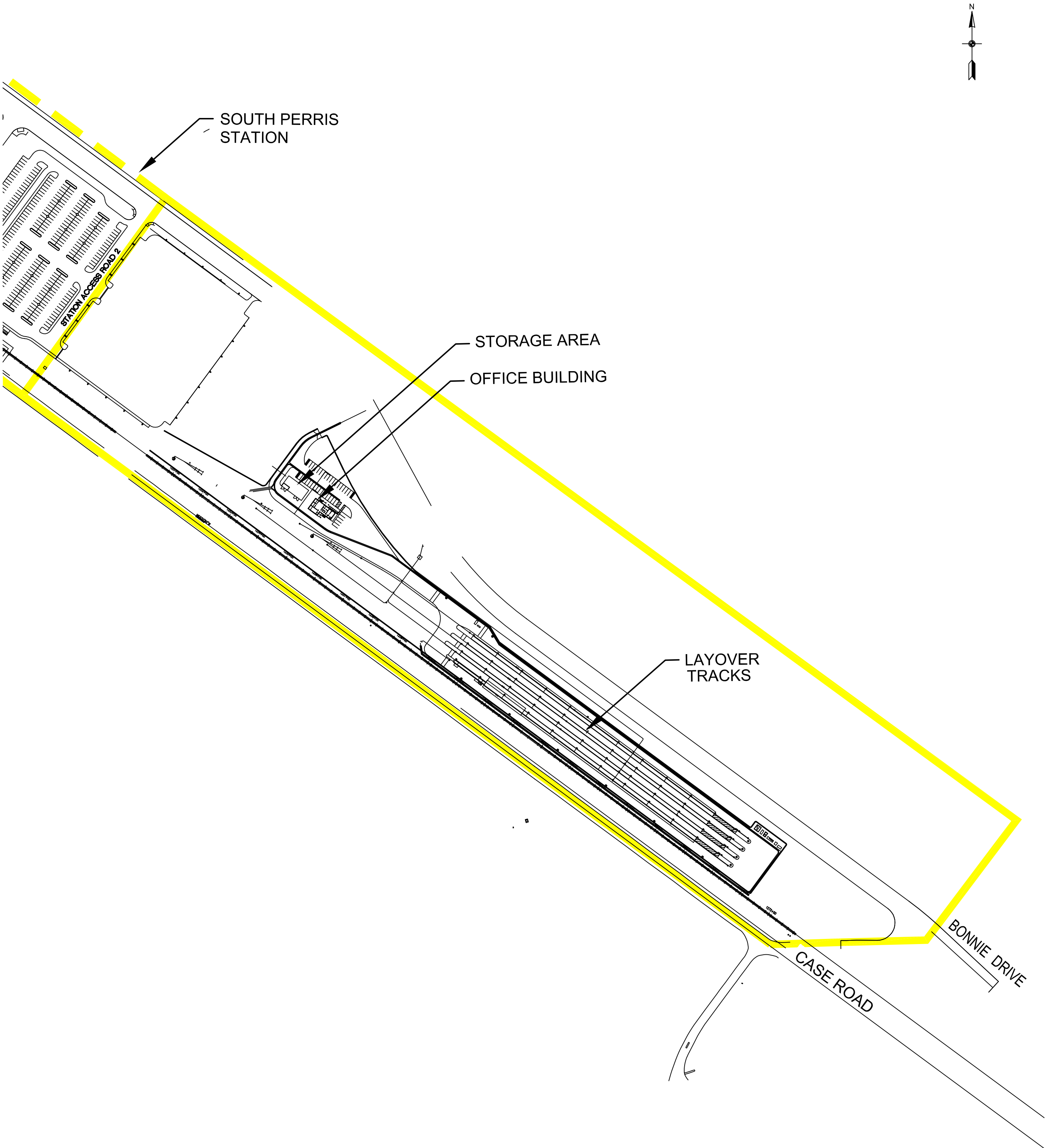


SITE PHOTOGRAPH (VIEW NORTH)




SITE AERIAL

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | **LAYOVER FACILITY** | FIGURE |
| DRAWN: | 12/8/09 | | **2.4-18** |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME:<br>92666layoverEIR.MXD | | | |




**LEGEND**

SITE BOUNDARY

NOT TO SCALE

| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 4/7/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666layoverE_EIR2.dwg |

**LAYOVER FACILITY**
**ENGINEERING SITE PLAN**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
**2.4-19**

### *2.4.3 Acquisitions and Relocations*

~~The PVL will affect approximately twelve parcels of land.~~ RCTC currently owns the existing SJBL ROW, however, parcels would be required for the Citrus Connection, Hunter Park Station, South Perris Station, Layover Facility, and for project related street improvements. Parcels are in the process of being obtained by the RCTC for the Moreno Valley/March Field and are already secured for the Downtown Perris Station options.

Citrus Connection

Right-of-way must be acquired to create the connection between the BNSF and SJBL. The Citrus Connection would require the acquisition of approximately ~~16.47~~17.22 acres, comprising two parcels which are currently vacant. The assessor parcel numbers (APNs) for these parcels are 247-112-007 and 247-150-040 and are shown on Figure 2.4-20.

Hunter Park Station Options

The location for the Hunter Park Station will be selected from three options, which are generally adjacent to one another, and described below. Depending on the Hunter Park Station option selected by RCTC, the required acquisitions would range between 9.34 acres (for the Columbia Station option) and 24.08 acres (for the Palmyrita Station option). The Hunter Park Station parcels to be acquired are shown on Figure 2.4-21.

*Palmyrita Station option*: Located between Palmyrita and Columbia Avenues on the east side of the SJBL, this site is approximately 24.08 acres in area, although planned for development to include a warehouse, the site is currently vacant. If selected for the Hunter Park Station, existing improvements would require demolition. The APN for this site option is 249-060-033.

*Columbia Station option*: Also located between Palmyrita and Columbia Avenues, on the west side of the SJBL, the Columbia site is about 9.34 acres. This site is currently a citrus grove. The APNs for this site option are 249-060-034 and 249-060-035.

*Marlborough Station option*: Located on the west side of the SJBL, on a parcel south of Columbia Avenue and north of Marlborough Avenue, the site is about 9.36~~5~~ acres. The site is currently undeveloped. The APNs for this site option ~~is~~ are 249-070-042 and 249-070-043.

Moreno Valley/March Field Station

RCTC is currently in the process of obtaining the Moreno Valley/March Field Station site from March JPA, by donation. This station and associated impacts were evaluated in the March Business Park (now Meridian) EIR. This station site is about 14.46~~50~~ acres, which is currently undeveloped. The APN is 297-100-036 and is shown on Figure 2.4-22.

South Perris Station and Layover Facility

For the South Perris Station and Layover Facility, approximately ~~40.00~~26.50 acres will need to be acquired by the RCTC. This site is currently undeveloped. The APNs are 327-200-001~~,~~ and 327-020-009~~, and 330-110-003~~ as shown on Figure 2.4-23.

Project Related Street Improvements

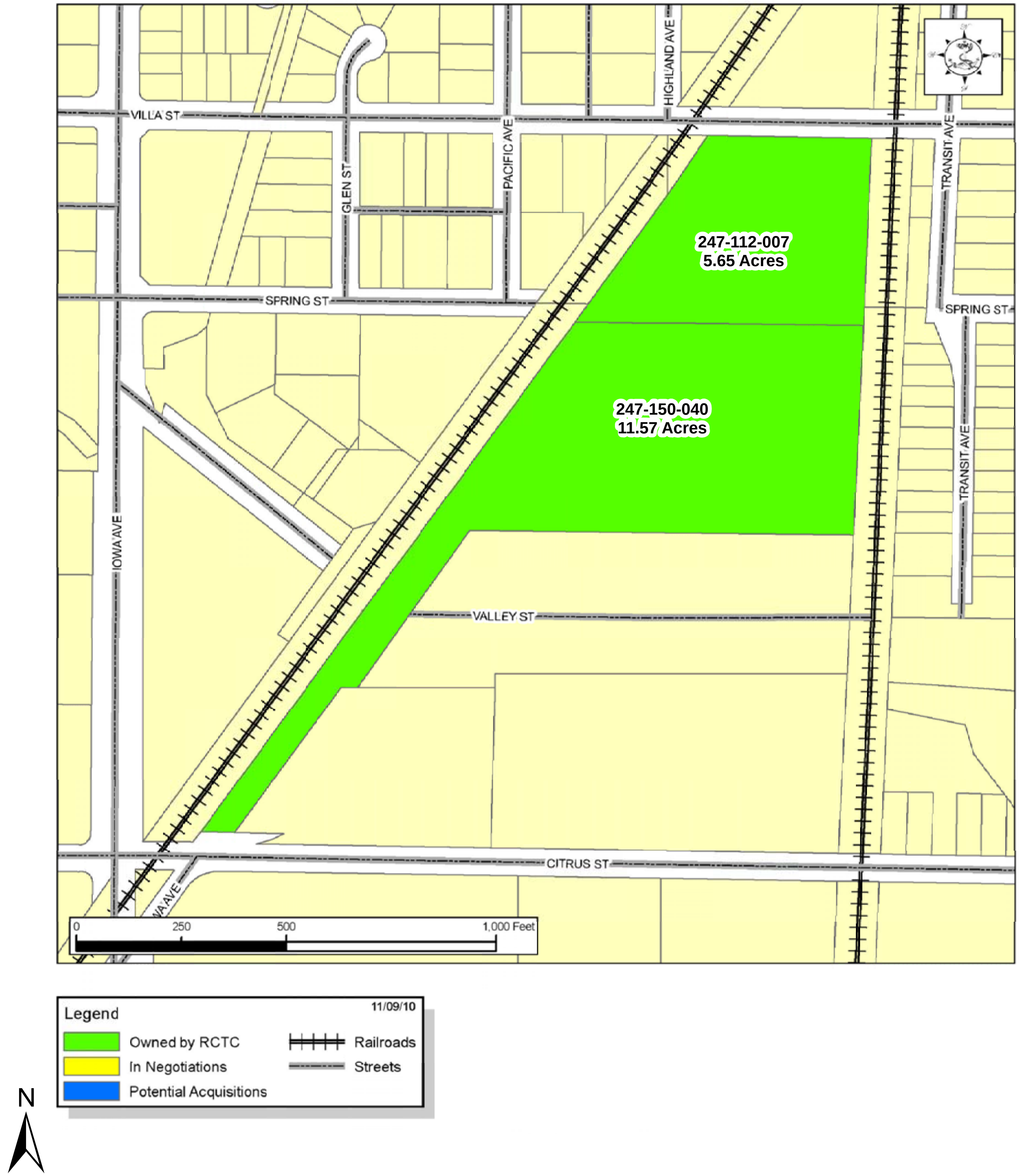
~~Two a~~Additional parcels will ~~need to~~ be acquired to do project related street improvements in the City of Perris. One site is on San Jacinto Avenue at C Street, APN 311-100-021~~, as shown on Figure 2.4-24~~. Approximately 0.04 acres will need to be acquired by RCTC. The second site is located on ~~11th~~ 7th Street at D Street, APN 313-114-005. ~~at South Perris Boulevard, APN 313-272-009.~~ Approximately 0.01~~19~~ acres will need to be acquired by RCTC. Another site is located along Case Road, APNs 310-140-019 and 310-160-070. Approximately 0.02 and 0.01 acres will need to be acquired by RCTC, respectively. The last site is located along Perris Boulevard, APNs 310-150-002, 313-272-009, and 313-282-048. Approximately 0.03, 0.01, and 0.01 acres will need to be acquired by RCTC, respectively. These sites are shown on Figure 2.4-24.~~This site is currently undeveloped and is shown on Figure 2.4-25.~~

For any of the facilities identified above, there is currently no need for relocation. Table 2.4-1 summarizes PVL's proposed acquisitions, although additional acquisitions may be necessary based on final engineering. In addition, it should be noted that during construction there may be a need for temporary access to specific areas depending on the construction activity and the type of construction equipment. These temporary work areas would be identified as 'temporary construction easements'.

**Table 2.4-1**
**PVL Parcel Acquisitions**

| Site | APN | Owner | Parcel Acres | Acreage Required for PVL |
|---|---|---|---|---|
| Citrus – Parcel 1 | 247-112-007 | Lincoln National Life Insurance Company ~~Citrus Business Park, LLC~~ | 5.65 | 5.65 |
| Citrus – Parcel 2 | 247-150-040 | Lincoln National Life Insurance Company ~~Citrus Business Park, LLC~~ | 11.57 ~~10.82~~ | 11.57 ~~10.82~~ |
| Hunter Park Station Palmyrita Option | 249-060-033 | MDC Hunter Park, LLC | 24.08 | 24.08 |
| Hunter Park Station Columbia Option – Parcel 1 | 249-060-034 | Thompson, Kenneth & Vera Ann | 4.78 | 4.78 |
| Hunter Park Station Columbia Option – Parcel 2 | 249-060-035 | Thompson, Kenneth & Vera Ann | 4.56 | 4.56 |
| Hunter Park Station Marlborough Option – Parcel 1 | 249-070-042 | Grove Business Park, LLC | 9.35 | 9.35 |
| Hunter Park Station Marlborough Option – Parcel 2 | 249-070-043 | Grove Business Park, LLC | 6.61 | 0.01 |
| Moreno Valley/March Field Station | 297-100-036 | LNR Riverside II, LLC | 14.46 ~~14.50~~ | 14.46 ~~14.50~~ |
| South Perris and Layover Facility – Parcel 1 | 327-200-001 | Intex Property Perris Valley | 140.51 ~~141.77~~ | 37.70 ~~37.47~~ |
| South Perris – Parcel 2 | 327-020-009 | Intex Property Perris Valley | 104.24 ~~105.60~~ | 1.65 ~~2.50~~ |
| ~~South Perris – Parcel 3~~ | ~~330-110-003~~ | ~~Rodeffer Family Trust~~ | ~~0.41~~ | ~~0.03~~ |

| Site | APN | Owner | Parcel Acres | Acreage Required for PVL |
|---|---|---|---|---|
| 7th Street and D Street Improvements | 313-114-005 | American Legion Perris Post 395 | 0.65 | 0.01 |
| San Jacinto Avenue Improvements | 311-100-021 | County of Riverside | 4.89 | 0.04 |
| Case Road and G Street Improvements – Parcel 1 | 310-140-019 | Arturo and Isabel Munoz | 0.31 | 0.02 |
| Case Road and G Street Improvements – Parcel 2 | 310-160-070 | Integrity Capital Palomar, LLC | 3.32 | 0.01 |
| Perris Boulevard and 11th Street Improvements – Parcel 1 | 310-150-002 | Orlando and Matilde Sanchez | 0.21 | 0.03 |
| Perris Boulevard and 11th Street Improvements – Parcel 2 | 313-272-009 | Pentecostal Church of God | 0.19 | 0.01 ~~0.19~~ |
| Perris Boulevard and 11th Street Improvements – Parcel 3 | 313-282-048 | Apolinar and Florina Sanchez | 0.25 | 0.01 |
| **Parcel Totals** | | | **335.63** ~~**326.60**~~ | **113.93** ~~**113.97**~~ |




SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOLUTIONS, DECEMBER 2009

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | CITRUS CONNECTION PARCEL ACQUISITION | FIGURE |
| DRAWN: | 12/14/10 | | |
| DRAWN BY: | JP | | 2.4-20 |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666parcel11EIR.MXD | | | |

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SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM,
AND EPIC LAND SOLUTIONS, DECEMBER 2009

**Legend**

- Proposed Acquisitions
- Railroads
- Streets

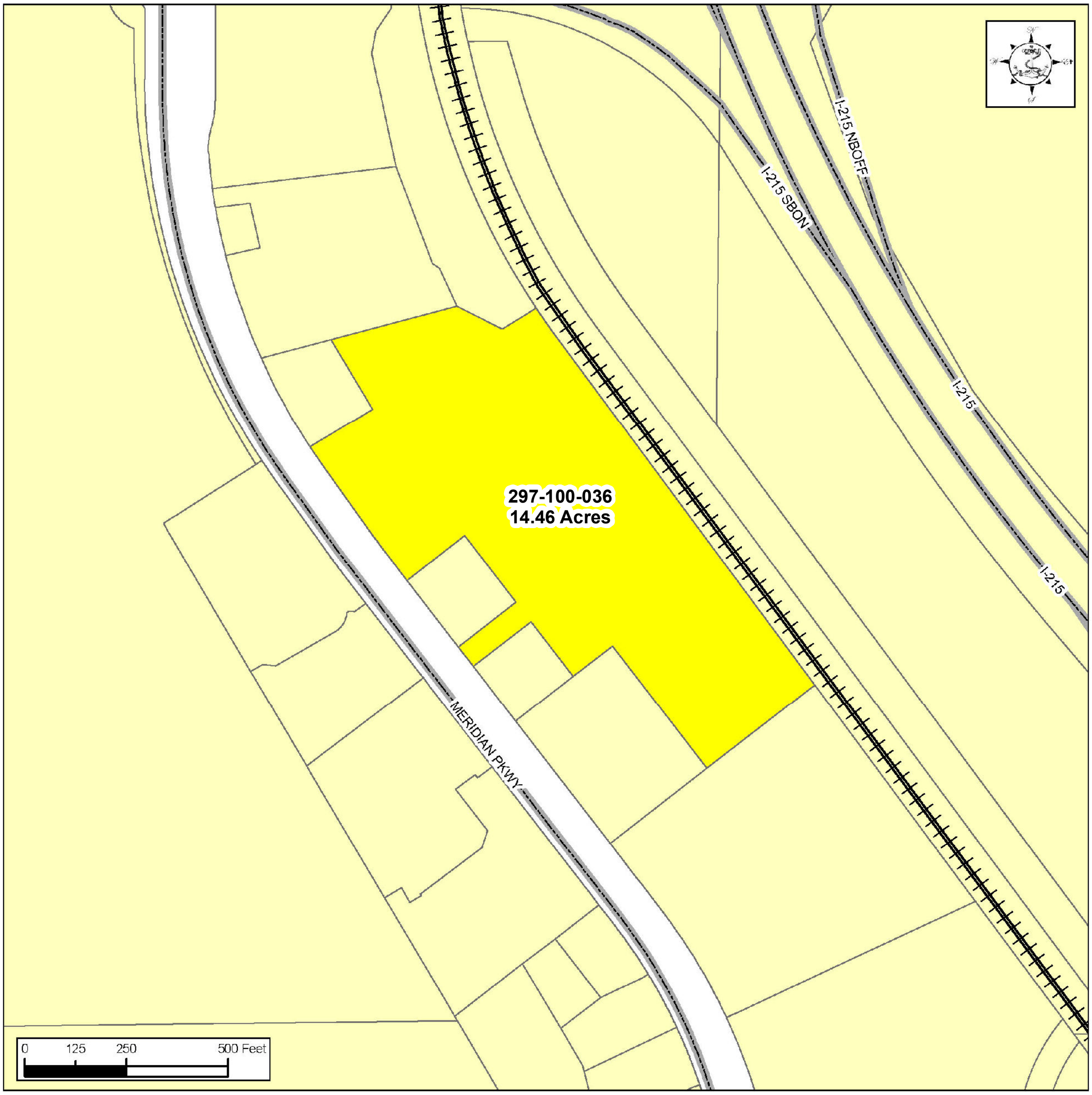
| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/14/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666parcel12EIR.MXD |

**HUNTER PARK STATION**
**PARCEL ACQUISITION**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

**2.4-21**




Legend 11/10/10

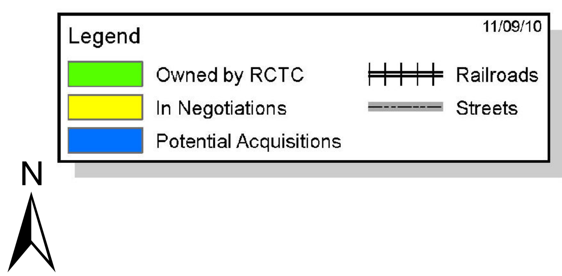
Owned by RCTC
In Negotiations
Potential Acquisitions
Railroads
Streets

N

SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOLUTIONS, DECEMBER 2009

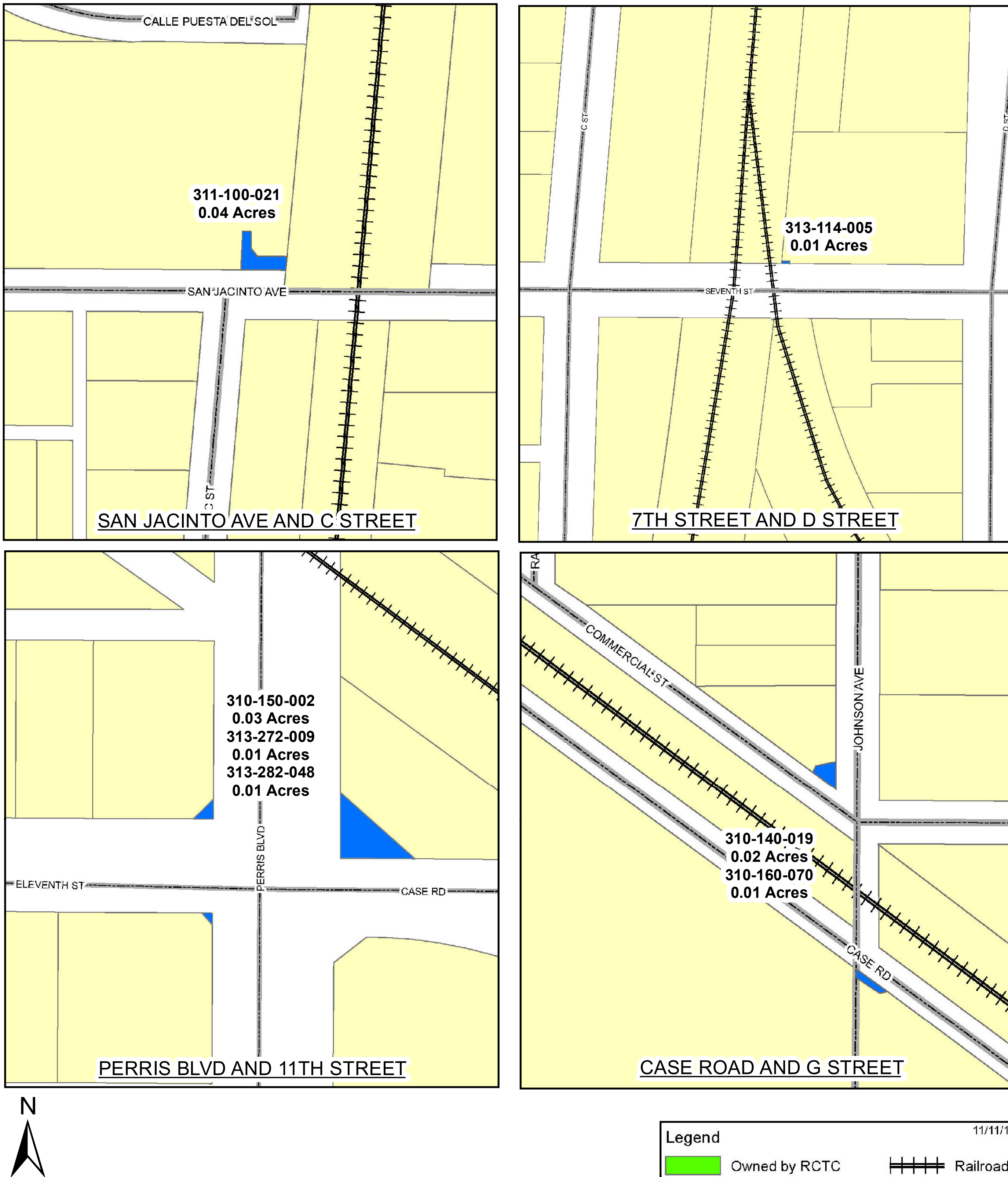
| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | | **MORENO VALLEY/ MARCH FIELD STATION PARCEL ACQUISITION** | FIGURE |
| DRAWN: 12/14/10 | | | |
| DRAWN BY: JP | | | **2.4-22** |
| CHECKED BY: RM | | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666parcel13EIR.MXD | | | |


SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOLUTIONS, DECEMBER 2009

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | **SOUTH PERRIS STATION AND LAYOVER FACILITY PARCEL ACQUISITION** | FIGURE |
| DRAWN: | 6/22/11 | | **2.4-23** |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666parcel14EIR.MXD | | | |




Legend 11/11/10

- Owned by RCTC
- In Negotiations
- Potential Acquisitions
- Railroads
- Streets

SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM
AND EPIC LAND SOULTIONS, DECEMBER 2009

NOT TO SCALE

| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/14/10 |
| DRAWN BY: | JP/KH |
| CHECKED BY: | RM |
| FILE NAME: | 92666parcel15EIR.MXD |

**STREET IMPROVEMENTS**
**PARCEL ACQUISITION**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
**2.4-24**


N

**Legend**

- Proposed Acquisitions
- Railroads
- Streets

SOURCE:

RIVERSIDE COUNTY LAND INFORMATION SYSTEM, AND EPIC LAND SOLUTIONS, DECEMBER 2009

Perris Valley Line — I-215: RIVERSIDE—MORENO VALLEY—PERRIS

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|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 6/23/11 |
| DRAWN BY: | JP/KH |
| CHECKED BY: | RM |
| FILE NAME: | 92666parcel8eir.MXD |

**SAN JACINTO AVENUE IMPROVEMENTS PARCEL ACQUISITION**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

**2.4-25**

### *2.4.4 Culvert Replacement and Extension*

There are approximately 53 drainage culverts along the SJBL that were evaluated in an *Existing Conditions Report* (JL Patterson & Associates, Inc., 2008). Within this evaluation, 30 drainage culverts were identified for replacement or extension as part of the project, as shown on Figure 2.4-26. Of the 30 identified for replacement on the SJBL, eight treated-wood box culverts would be replaced with reinforced concrete box culverts.

### *2.4.5 Bridge Replacements*

There are two bridges on the SJBL that require replacement, one at the San Jacinto River (MP 20.70) and a second at the San Jacinto River Overflow Channel (MP 20.80), as shown on Figure 2.4-27. Both bridges will be replaced in-kind and will have a similar appearance as the original bridges. The current San Jacinto River single-track bridge is an open-deck pile, wooden trestle of 142 feet in length. The San Jacinto Overflow Channel single-track bridge (MP 20.80) is an open-deck pile, wooden trestle.

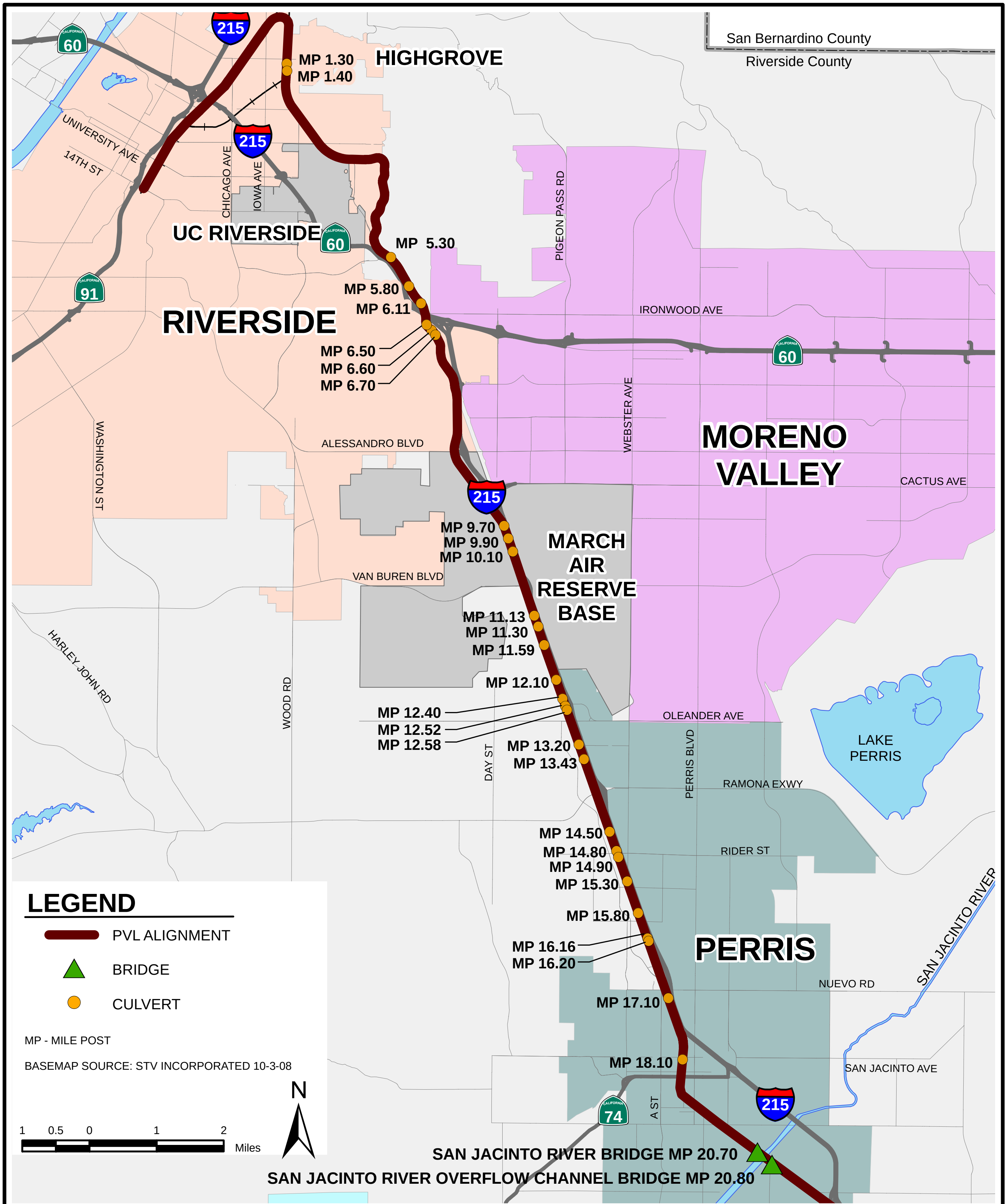
### *2.4.6 Grade Crossings*

As required by the ~~California Public Utilities Commission (~~CPUC~~)~~, modifications will be made to several existing grade crossings along the SJBL to ensure public safety, and to facilitate safe train movements. These modifications include improvements to several grade crossings, as well as the closure of other grade crossings. The locations of grade crossings to be improved or closed are shown on Figure 2.4-28.

Improvements are proposed at 15 grade crossings along the SJBL to include: flashing warning devices and gates, raised center medians, striping, signage and pavement markings, crossing safety lighting, signalization, and pedestrian safety improvements. Proposed improvements would reduce the potential for pedestrian and motor vehicle conflict at these grade crossings. The exact warning device configuration is to be determined by a diagnostic team consisting of the CPUC, SCRRA, and BNSF representatives. To date, four field diagnostic meetings have been held to review grade crossings for the PVL, with members from the CPUC, SCRRA, BNSF, RCTC, County of Riverside, and cities of Riverside and Perris. A list of proposed grade crossing modifications identified at the meetings, which includes improved crossings and warning devices, is provided in Appendix C, Grade Crossing Modifications Table.

Two grade crossings would be closed to the public to accommodate the PVL project. The closings are at Poarch Road (MP 5.02) in Riverside, and at ~~West~~ 6th Street (MP 19.03) in Perris. It should be noted that the existing grade crossing at Poarch Road is planned to be closed to the public but will continue to be accessible to emergency vehicles only (with a locked gate). The existing grade crossing at 6th Street is planned to be closed to vehicles but would still be accessible by pedestrians to cross. The closure of ~~West~~ 6th Street to vehicular traffic is in accordance with Riverside's Downtown General Plan.

In ~~addition~~Perris, 5th Street has been temporarily closed by the City ~~of Perris~~ and will be formally vacated for this project. In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. This closure is necessary due to potential safety issues at the tracks as the turning movements involve an acute angle and can present the motorist with limited sight distance. Although this closure is expected to affect fewer than five vehicles during any one hour, 9th Street, which is currently a dirt road, would be paved to accommodate local property access.




| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | BRIDGE AND CULVERT IMPROVEMENT LOCATIONS | | FIGURE |
| DRAWN: 1/30/10 | | | 2.4-26 |
| DRAWN BY: JP | | | |
| CHECKED BY: RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | | |
| FILE NAME: 92666culvEIR.MXD | | | |

SAN JACINTO RIVER BRIDGE MP 20.70

SAN JACINTO RIVER OVERFLOW CHANNEL BRIDGE MP 20.80

| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | SAN JACINTO RIVER BRIDGES | FIGURE |
| DRAWN: 1/30/10 | | |
| DRAWN BY: JP | | 2.4-27 |
| CHECKED BY: RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME:<br>92666PHOTO2EIR.dwg | | |

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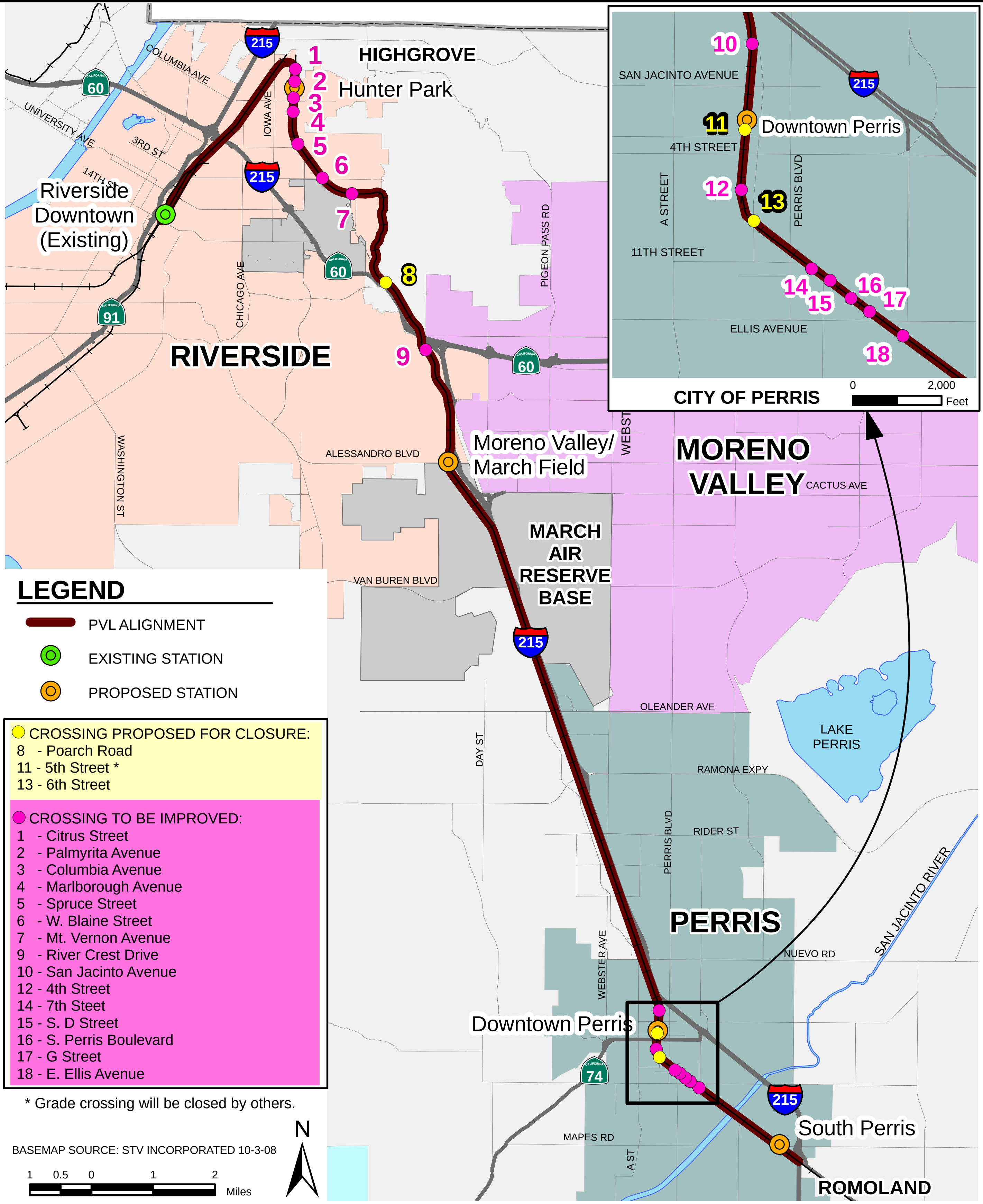


Perris Valley Line
RCTC
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| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | PVL GRADE CROSSING IMPROVEMENTS AND CLOSURES | FIGURE |
| DRAWN: | 1/30/10 | | **2.4-28** |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666crossEIR1.MXD | | | |

Other work to existing grade crossings, located within the PVL corridor, includes grade separations. Currently there are plans by others to create grade separations at three grade crossings. These are not part of the PVL project. These three locations are along the BNSF alignment at 3rd Street, Columbia Avenue, and Iowa Avenue in the city of Riverside.

### *2.4.7 Communication Systems*

The PVL communication systems would consist of communication towers and associated equipment shelters, and underground cables. This portion of the PVL project would include the construction of nine communication towers: East Maintenance Facility (outside of the PVL corridor), Control Point (CP) Citrus (near the Citrus Connection), Hunter Park Station option microwave tower, CP Marlborough, CP Eastridge (between Alessandro Boulevard and the I-215/SR-60 interchange), CP Oleander (south of MARB), CP Nuevo (north of Nuevo Road), South Perris Station communication shelter and tower, and CP Mapes (south of South Perris Station). Details of the two types of communication towers are described in Section 4.1 Aesthetics.

The electronics at PVL crossings would be upgraded with crossing predictors to sense the speed and presence of trains. The work would include new or upgraded grade crossing warning devices and new pedestrian crossing warning devices; signal system upgrades; and replacement of control cables, housings, and equipment. The crossing predictors would enable the crossing gates to lower and rise in equal time durations regardless of the speed of approaching trains. Overlay circuits would be installed at each crossing to detect trains while they are still at least one crossing away. Rubberized or asphalt crossings would be replaced with concrete panel crossings.

### *2.4.8 Noise Barriers*

During the analysis of the project noise related impacts were identified in the Watkins Drive area in the City of Riverside. The feasible and appropriate mitigation for the identified impacts are the construction of noise barriers. The noise barriers will be located near the outside edge of the RCTC ROW. In some cases the new barrier would replace the current boundary fencing between the private residences and the ROW. Additionally, the built environment in this area has developed with buildings, landscape trees, and fencing such that the addition of noise walls would not block views of the nearby mountains. Details regarding the noise barriers are provided in Section 4.10 Noise and Vibration.

### *2.4.9 Landscape Walls*

Landscape walls have been identified for three schools along the SJBL alignment: Highland Elementary School, Hyatt Elementary School, and Nan Sanders Elementary School. It should be noted that there are ROW constrictions at Nan Sanders Elementary School, therefore, RCTC will provide funding for the design and construction of the landscape wall on the school's property.

In contrast to noise barriers, landscape walls are not mitigation for any identified impacts. ~~Instead, landscape walls are primarily aesthetic.~~ In discussions with the Riverside Unified and Perris Union School Districts, it was mutually agreed that the three schools along the PVL would receive a benefit from a landscape wall~~visual barrier~~ that would provide a screen between the schools and the railroad ROW.

As such, RCTC agreed that the PVL project will provide landscape walls.The landscape walls will be located within the PVL ROW adjacent to the school properties~~ as a "good neighbor" gesture to the schools~~, not as mitigation. The landscape walls are not intended to provide any function beyond that of a visual screen. They are neither a noise barrier, nor shall they be construed as a safety measure.

*2.4.10 Construction*

It is anticipated that project construction would start in 2011, and continue until revenue service can commence in 2012. The work would be performed in a manner that allows freight deliveries to continue while the PVL improvements are being undertaken. Freight delivery schedules would be adjusted to accommodate the work, balancing the need to support business activity of the freight shippers/receivers with the need to remove old track and install new track. Some construction work may be performed at night or on weekends and some train operations may shift to nights or weekends to accomplish the project schedule. In the event that nighttime and weekend work are determined necessary, coordination with the affected local jurisdictions will be undertaken.

Federal regulations and traditional safety practices require that train operations and workers on or near the tracks be protected from each other. This separation is performed by flagmen who assure that workers near the track are safe from oncoming trains, direct the workers to retreat to a place of safety when trains pass, and who assure that the tracks are safe for train operation before permitting trains to pass.

The core of the PVL work would be to remove the existing track and replace it with new track components. This work would likely be performed with specialized equipment that can install about ½ mile of track per day. This equipment is a specialized rail machine that runs on the track and carries the supplies necessary to complete the rehabilitation work. This machine also makes sure that the two rails are level in relation to each other when the work is complete. Other tasks include removing and replacing grade crossings, selected culverts, and bridges. All of these tasks require that the contractor have extended periods (18-96 hours) of exclusive use of the track. Some of the contractor's tasks would not interfere with the operation of trains, and these tasks would be performed during normal working hours. Examples of non-interfering tasks include changes to the embankments, station areas, noise barriers, and signal installations. Segments of wholly new track in the area between Eastridge Avenue and Ramona Boulevard and the areas of very limited freight operations, roughly Ramona Boulevard to the South Perris Station, may be constructed without interference with freight train operation.

Construction activities would be generally broken up by three parallel efforts, including construction of the tracks, crossings, and systems. The construction process would begin with the relocation of any public utilities along the alignment. This work is to be done by contractors hired by the utility owners and subject to the control of railroad flagmen. The next step would be the staging of construction materials and equipment. Where needed, the contractor would perform rough grading for embankment changes and construction equipment access. Bridges, selected culverts, and grade crossings would be removed and reconstructed. Replacement of the San Jacinto River bridges would require pile driving.

Once the embankment and culverts are functionally complete, track removal and replacement would be undertaken. Track removal would be performed by typical construction equipment including end loaders, dump trucks, and all-terrain cranes. Replacement of the track would begin with the distribution of a base course of crushed rock ballast. Then, specialized track equipment would be used to place the concrete ties on the ballast and install the rail. About one to two miles of track would be reconstructed during each three to four day work period. After the track is assembled, more crushed rock ballast would be delivered by rail cars and the track would be lined, surfaced, and welded into its final configuration. This would be followed with final shaping of the embankment, cleanup, and installation and testing of the signals. Road crossing work would be coordinated with the train operations and with local traffic authorities to assure that there is advance public notice and adequate alternate routes.

It should also be noted that any equipment staging areas will be within disturbed areas of the ROW or RCTC property, and not within 500 feet of environmentally sensitive areas.

### *2.4.11 Operations*

RCTC anticipates the PVL would become operational in 2012. The operation of trains on the PVL will be the responsibility of SCRRA/Metrolink under agreement with RCTC. The 2012 opening year operating schedules would include four trains from the South Perris Station to the Riverside Downtown Station, with continuing service on the SCRRA/Metrolink 91 line to LA Union Station during the morning peak, and one morning train serving reverse commute trips from LA Union Station to the South Perris Station. In addition, two mid-day, off-peak trains would operate in each direction. During the afternoon peak, four trains would operate from LA Union Station to the South Perris Station, and one in-bound train would operate from the South Perris Station to LA Union Station. In all, it is anticipated that there would be a total of twelve daily trips. The interval between each peak period run would be approximately 50 to 60 minutes in the 2012 opening year, as shown in Table 2.4-2.

**Table 2.4-2**
**Preliminary Opening Year Operations Schedule**

| To Los Angeles | | 701 | 703 | 7X1 | 7X3 | 7X5 | 7X7 |
|---|---|---|---|---|---|---|---|
| 91 Line [Perris V, Riverside, Fullerton, Downtown LA] | **South Perris** | 3:51 AM ~~3:48~~ | 4:51 AM ~~4:48~~ | 5:51 AM ~~5:48~~ | 6:21 AM ~~6:18~~ | 2:13 PM ~~2:10~~ | 3:55 PM ~~3:52~~ |
| | **Downtown Perris** | 3:56 AM ~~3:53~~ | 4:56 AM ~~4:53~~ | 5:56 AM ~~5:53~~ | 6:26 AM ~~6:23~~ | 2:18 PM ~~2:15~~ | 4:00 PM ~~3:57~~ |
| | **Moreno Valley/ March Field** | 4:10 AM ~~4:07~~ | 5:10 AM ~~5:07~~ | 6:10 AM ~~6:07~~ | 6:40 AM ~~6:37~~ | 2:32 PM ~~2:29~~ | 4:14 PM ~~4:11~~ |
| | **Hunter Park** | 4:19 AM ~~4:22~~ | 5:19 AM ~~5:22~~ | 6:19 AM ~~6:22~~ | 6:49 AM ~~6:52~~ | 2:41 PM ~~2:44~~ | 4:23 PM ~~4:26~~ |
| | **Riverside - Downtown** | 4:30 AM | 5:30 AM | 6:30 AM | 7:00 AM | 2:52 PM | 4:34 PM |
| | **Riverside – LA Sierra** | 4:40 AM | 5:40 AM | 6:40 AM | 7:10 AM | 3:02 PM | 4:44 PM |
| | **North Main Corona** | 4:48 AM | 5:48 AM | 6:48 AM | 7:18 AM | 3:10 PM | 4:52 PM |
| | **West Corona** | 4:54 AM | 5:54 AM | 6:54 AM | 7:24 AM | 3:16 PM | 4:58 PM |
| | **Fullerton** | 5:19 AM | 6:19 AM | 7:19 AM | 7:49 AM | 3:41 PM | 5:21 PM |
| | **Buena Park** | 5:26 AM | 6:26 AM | 7:26 AM | 7:56 AM | 4:07 PM | 5:26 PM |
| | **Norwalk/Santa Fe Springs** | 5:34 AM | 6:34 AM | 7:34 AM | 8:04 AM | 4:15 PM | 5:34 PM |
| | **LA Union Station** | 6:00 AM | 7:00 AM | 8:00 AM | 8:30 AM | 4:39 PM | 6:00 PM |

**Table 2.4-2 (cont'd)**
**Preliminary Opening Year Operations Schedule**

| To Perris Valley | | 700 | 702 | 704 | 706 | 708 | 710 |
|---|---|---|---|---|---|---|---|
| 91 Line [Perris V, Riverside, Fullerton, Downtown LA] | **LA Union Station** | 6:15 AM | 11:30 AM | 3:30 PM | 4:30 PM | 5:30 PM | 6:15 PM |
| | **Norwalk/Santa Fe Springs** | 6:36 AM | 11:51 AM | 3:51 PM | 4:51 PM | 5:51 PM | 6:36 PM |
| | **Buena Park** | 6:42 AM | 11:57 AM | 3:57 PM | 4:57 PM | 5:57 PM | 6:42 PM |
| | **Fullerton** | 6:49 AM | 12:04 PM | 4:04 PM | 5:04 PM | 6:04 PM | 6:49 PM |
| | **West Corona** | 7:12 AM | 12:27 PM | 4:27 PM | 5:27 PM | 6:27 PM | 7:12 PM |
| | **North Main Corona** | 7:18 AM | 12:33 PM | 4:33 PM | 5:33 PM | 6:33 PM | 7:18 PM |
| | **Riverside – LA Sierra** | 7:27 AM | 12:42 PM | 4:42 PM | 5:42 PM | 6:42 PM | 7:27 PM |
| | **Riverside - Downtown** | 7:45 AM | 1:00 PM | 5:00 PM | 6:00 PM | 7:00 PM | 7:45 PM |
| | **Hunter Park** | 7:51 AM | 1:06 PM | 5:06 PM | 6:06 PM | 7:06 PM | 7:51 PM |
| | **Moreno Valley/ March Field** | 8:03 AM ~~8:06~~ | 1:18 PM ~~1:21~~ | 5:18 PM ~~5:21~~ | 6:18 PM ~~6:21~~ | 7:18 PM ~~7:21~~ | 8:03 PM ~~8:06~~ |
| | **Downtown Perris** | 8:17 AM ~~8:20~~ | 1:32 PM ~~1:35~~ | 5:32 PM ~~5:35~~ | 6:32 PM ~~6:35~~ | 7:32 PM ~~7:35~~ | 8:17 PM ~~8:20~~ |
| | **South Perris** | 8:22 AM ~~8:25~~ | 1:37 PM ~~1:40~~ | 5:37 PM ~~5:40~~ | 6:37 PM ~~6:40~~ | 7:37 PM ~~7:40~~ | 8:22 PM ~~8:25~~ |

### *2.4.12 Maintenance*

Currently, maintenance of the SJBL ROW is the responsibility of BNSF under agreement with RCTC. RCTC anticipates that project maintenance will be according to SCRRA/Metrolink standard practices which include: checking/correcting alignment of the rail, checking/correcting alignment of the ties, controlling vegetation within the ROW, and ensuring drainage pathways are clear and functioning. Additional maintenance checks include: checking the crossing gates and associated electronics, and general condition assessment of rail-related facilities.

The trains would receive overnight service at the Layover Facility by SCRRA/Metrolink personnel or assigned contractors. This service would include cleaning the inside and outside of the trains, emptying the restroom holding tanks, and a general visual evaluation of the trains. Heavy maintenance, including engine overall, parts replacement, scheduled lubrication and fluid replacement, of SCRRA/Metrolink engines and cars would continue to be performed at SCRRA/Metrolink facilities near Colton.

### *2.4.13 Freight Usage*

As part of the planning effort for the PVL, RCTC commissioned a study in 2008 to inventory the current freight usage along the SJBL and to determine whether track improvements planned for commuter rail service would facilitate the expansion of freight service along the SJBL (Wilbur Smith Associates, 2008). Under the shared use agreement between BNSF and RCTC, freight usage of the improved SJBL would continue following the start of revenue service of the PVL.

Currently, there are eight shippers between Riverside and Romoland with sidings off of the SJBL. The existing facilities ship a variety of products, including paper stock, resins, lumber, chlorine, and agricultural products. Many of the freight shippers using the SJBL transport goods outside of California and the western states, and in some cases, to Canada.

According to the findings of the study, it is unlikely that the improvements would benefit shippers in any material way. No shippers indicated that the improvements will result in an increase of their rail shipments. Track improvements and other upgrades proposed as part of the PVL are aimed at improving operations and safety to accommodate commuter rail service. These improvements will provide safety benefits that accrue to both commuter and freight operations (for example, grade and pedestrian crossing improvements and improved communications). However, rail improvements are not needed to accommodate freight loading, as the existing SJBL track and sidings can already carry the heaviest car weight of 286,000 pounds. Because no additional weight capacity would be added, or is even needed for existing users of the BNSF, PVL-related track improvements would not create conditions that could either increase the volume of freight shipped per carload or the number of weekly carloads.

Although track upgrades would improve operations and theoretically allow trains to travel at faster speeds, freight trains are limited to traveling at 20 miles per hour (mph) north of Perris. Southbound freight trains would continue to operate at lower speeds to maneuver the climb through Box Springs Canyon. The current freight inventory indicates that freight shipments often travel thousands of miles, and therefore any upgrades to the existing 21-mile-long SJBL segment to allow for even minor increases in train speed have little overall impact on the total travel time of the shipment.

Improvements to the SJBL to provide for commuter rail service would not facilitate expansion of freight volume or the number of freight trains operating along the PVL alignment. While PVL track improvements would provide for reduction in potential schedule conflicts, upgrades to the rail line would not result in additional freight demand. The study concluded that economic factors, rather than rail improvements, dictate freight demand.

The SJBL is already accessible to the BNSF via the existing connection near Center Street in the community of Highgrove. The existing connection could also be used by commuter rail and was previously analyzed in the Alternatives Analysis as the Commuter Rail Alternative with Highgrove Turnback (see Chapter 3.0 for Project Alternatives). However, one of the key factors for commuter rail viability is travel time. Use of the Highgrove Turnback at Center Street to move between the BNSF and SJBL would require trains to stop and reverse direction and undergo a number of safety checks prior to continuing along the alignment. The additional time required for this maneuver would effectively degrade commuter rail travel time such that its viability becomes questionable. However, freight operations are not as time sensitive to operate effectively.

Freight operations are dictated by costumer demand; in turn, customer demand is a function of economic conditions. The relationship between an improved SJBL alignment and increased freight operations is tenuous, at best. The business decision to provide freight service along the SJBL is profit driven. As long as the customer demand for freight service is low, there is no reason to assume BNSF would increase operations on the SJBL, regardless of track conditions.

*2.4.14 SCRRA/Metrolink Operation Lifesaver*

For safety and security reasons, SCRRA/Metrolink has developed a safety education program as a service to schools and communities along Metrolink lines (11 schools are located within 0.25 miles of the SJBL). This safety education program incorporates Operation Lifesaver, which is a non-profit international public education program established in 1972 to end collisions, deaths, and injuries at highway-rail grade crossings and along railroad ROWs. The program addresses rail safety and teaches students at age-appropriate levels to understand rail signage, the importance of avoiding the railroad ROW, and safe driving skills in the vicinity of railroads. Operation Lifesaver provides free presentations to schools and community groups. The majority of the PVL operations would not occur during the school session because most scheduled runs occur either before the start of the school day or after its completion (see Table 2.4-1). SCRRA/Metrolink with RCTC encourages school and community group participation in Operation Lifesaver.

*2.4.15 Positive Train Control*

Operational safety is a major concern of RCTC and SCRRA, and safety is designed into the PVL and rail projects starting with Federal Railroad Administration (FRA) track safety standards. SCRRA initiates safety through the design of its locomotives, which are outfitted with light sources at the lower half of the train to illuminate the track for the safety of the train and surrounding areas. At the national level, FRA is developing the standards for implementation of Positive Train Control (PTC) for passenger rail operators. PTC refers to technology that is capable of preventing train-to-train collisions, over-speed derailments, and casualties or injuries to roadway workers (e.g., MOW workers, bridge workers, signal maintainers, contractors) operating within their limits of authority. PTC systems vary widely in complexity and sophistication based on the level of automation and functionality they implement, the system architecture utilized, and the degree of train control they are capable of assuming. Current PTC system designs act as a safety overlay of existing train control systems. PTC has been mandated nationally, and reportedly, the SCRRA/Metrolink fleet will be compliant once SCRRA has finalized the design of the system. Space provisions have been incorporated into the signal equipment and enclosures to accommodate the PTC upgrade when the SCRRA's program is finalized.

In southern California, installation of PTC is the agency's highest safety priority project. As a result, SCRRA is developing an accelerated strategy with a goal to have PTC operational on Metrolink rolling stock by 2012, in conjunction with the BNSF and Union Pacific (UP) freight railroads aim to complete the implementation of wayside PTC along their ROW in the Los Angeles basin by 2012. SCRRA's objective is to have the full PTC system in place in advance of the 2015 federal mandate (Solow, 2009).

# 3.0 PROJECT ALTERNATIVES

## 3.1 INTRODUCTION

### *3.1.1 RCTC Responsibilities*

State law created the Riverside County Transportation Commission in 1976 to oversee funding and coordination of all public transportation services within Riverside County. The Commission's governing board is made up of 32 members including a city council member from each incorporated city and the five members of the Board of Supervisors and a non-voting Governor appointee.

RCTC serves as the tax authority and implementation agency for Measure A, a 1/2 cent sales tax program initially approved by voters in 1988 and subsequently in 2002, and will remain in place until 2039. Measure A funds highway, street and road, and transit projects throughout Riverside County. In addition to Measure A funding, RCTC also allocates state and federal transportation dollars to their local jurisdictions.

The Commission also implements new transportation projects through a Highway and Rail Delivery Plan. In transit RCTC operates and funds commuter rail services and stations, works with local employers to provide commuter assistance programs, oversees public transit funding and providers, and administers the Call Box and Freeway Service Patrol programs. Additionally, the Commission serves as Riverside County's Congestion Management Agency, and actively participates in regional goods movement issues. RCTC is also one of a five-county joint powers authority that makes up the Southern California Regional Rail Authority better known as Metrolink.

In 2004 RCTC developed goals to identify transportation and community related needs within western Riverside County and develop transit solutions to meet those needs. Study efforts have documented a significant increase in population and development within western Riverside County. The accompanying land use patterns that have shaped this growth have additional transportation impacts. The suburban low-density residential developments in this area require an automobile for almost all trips. Even more pronounced is the reduced availability of employment in Riverside County relative to its population, and as a result many residents must commute long distances to jobs outside the county. These factors have resulted in significant burdens on transportation system users, the roadway network, and residents.

RCTC considered existing and projected transportation conditions within the western Riverside County based upon highway congestion, the growth of population and employment centers, and planned transportation improvements within the I-215/SR-60 corridor. RCTC determined that this corridor is severely constrained by several conditions, including:

- Both local and regional transportation movement occurs primarily via the already congested I-215 freeway between the cities of Riverside and Moreno Valley;
- At the convergence of I-215/SR-60, a bottleneck is created in the region's transportation network, and there are no roadway alternatives that could relieve congestion in the I 215/SR-60 area;

- Current and planned freeway improvements will not meet forecasted travel demand; and,

- Potential freeway expansion beyond currently planned improvements would have substantial adverse impacts on adjoining neighborhoods.

While a number of transportation improvements have been implemented to reduce traffic congestion, community and transportation related needs have not been fully addressed. The region's existing transportation facilities have not been able to accommodate the growing trip volumes without experiencing extensive congestion along the corridor. Consideration of the transportation issues in the study corridor, including the constraints to additional freeway widening, the existence of underutilized transportation resources, and the need to provide transit travel options to a growing population and employment centers lead to the development of project goals and objectives. In order to focus on an appropriate range of transportation solutions, RCTC developed project related goals and objectives.

### *3.1.2 Project Goals and Objectives*

A set of goals and objectives has been developed from the needs observed, documented, and expressed through public outreach to affected communities, stakeholders, and concerned individuals. Defining the project's goals and objectives is a key step in determining what is specifically desired from the project investment. The goals and objectives succinctly define how the purpose and need for the project will be fulfilled (goals), and where possible, incorporate quantifiable measures (objectives) that will help in the development of evaluation criteria. Four goals with objectives were identified to outline the mobility needs of western Riverside County. These goals were determined in RCTC's *San Jacinto Branchline/I-215 Corridor Study Alternatives Analysis* (AA) prepared in 2004 (STV Inc., 2004) see Technical Report A.

**Goal 1 – Improve the Transportation System with Alternative Travel Choices:**

<u>Objectives</u>

- To establish and expand the regional transit network within and beyond the study corridor.
- To improve the attractiveness of public transit as a commuter alternative to the automobile, by making it available, reliable and convenient to use.
- To reduce highway congestion in the corridor.
- To promote a seamless regional transit system.

**Goal 2 – Promote Community/Transit Oriented Development:**

<u>Objectives</u>

- To strengthen the older urban communities as centers of economic opportunity.
- To broaden the range and availability of public transportation alternatives between the various urban areas along the corridor for a variety of trip purposes.
- To encourage transit-friendly communities, at higher densities.
- To foster transit-oriented development around transit stations.

- To provide improved mobility opportunities to the transit dependent.

**Goal 3 – Minimize Adverse Environmental Impacts:**

Objectives

- To establish help reduce residential, commercial, and industrial “sprawl” development.
- To conform to the State Implementation Plan as required by the Clean Air Act Amendments of 1990.
- To minimize impacts to the natural and human-made environment.
- To reduce the need for new right-of-way resources thereby reducing land use impacts to the study corridor.

**Goal 4 – Invest and Deploy Resources Effectively and Efficiently:**

Objectives

- To invest resources efficiently.
- To improve the productivity and cost effectiveness of transit services in the corridor.
- To enhance and build upon the existing public transportation system within the corridor.
- To select investments that build upon underused and abandoned transportation resources.

### *3.1.3 CEQA Guidelines*

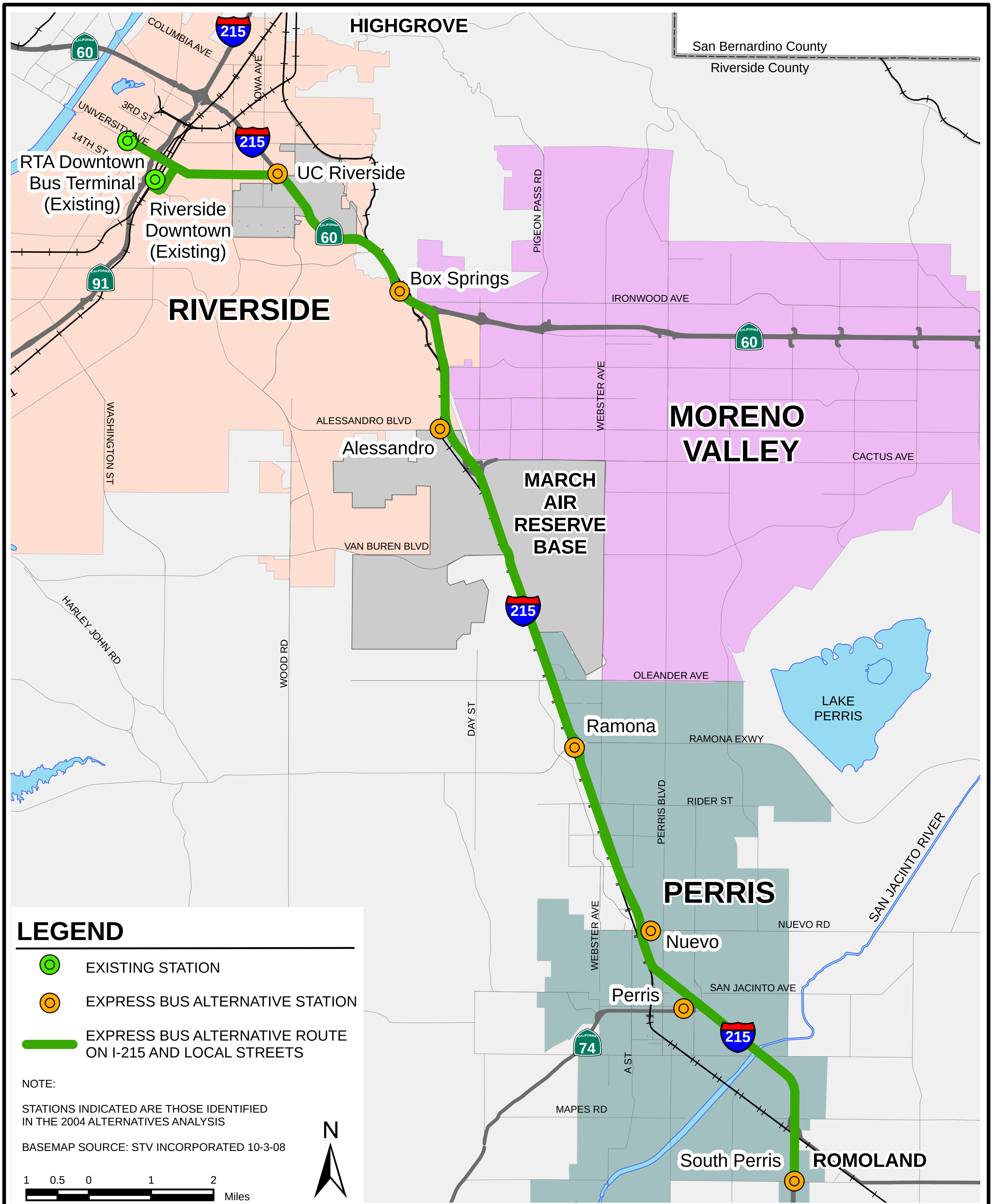
CEQA Guidelines §15126(d)(2) states that the range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lesse~~o~~n one or more of the significant environmental impacts of the proposed project. CEQA specifically requires the discussion of a “No Project” alternative. The reasonable range is to include alternatives that focus on the mitigation or avoidance of significant effects associated with the proposed project, permits a reasoned choice for the decision makers, and is feasible. §15126(d)(5) states that among the factors which may be taken into account when addressing the feasibility of alternatives are site availability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.

The treatment of alternatives in an EIR must include an analysis of attainment of the project objectives, assess the significant environmental effects, develop screening criteria for feasibility of alternatives, and identify the environmentally superior alternative. This chapter reviews the transit alternatives and compares each of the transit alternatives, as described in the AA (STV Inc., 2004). The analysis of alternatives is the process for reaching a broad consensus on exactly what type of improvement or improvements best meet locally-defined Goals and Objectives for a specified study area (I-215 corridor).

## 3.2 DESCRIPTION OF ALTERNATIVES

RCTC considered five alternatives in its AA to alleviate existing and future transportation deficiencies through the use of existing transportation resources in the study corridor. The alternatives were described and evaluated based upon criteria that measured the ability of each alternative to satisfy the Goals and Objectives of the study. The five alternatives included:

- No Project Alternative – Planned roadway improvements along I-215 because it represents a continuation of current transportation planning efforts.
- Express Bus Alternative – Potential improvements in express bus service on the highway network as shown in Figure 3.2-1.
- Commuter Rail Alternatives – new commuter rail service options that runs parallel to a substantial portion of the I-215 with different connection options:
    - New connection to Union Pacific Riverside Industrial Lead (UP RIL), as shown in Figure 3.2-2.
    - Connection to BNSF with Highgrove Turnback, as shown in Figure 3.2-3.
    - New connection to BNSF at Citrus Street (Citrus Connection), as shown in Figure 3.2-1.

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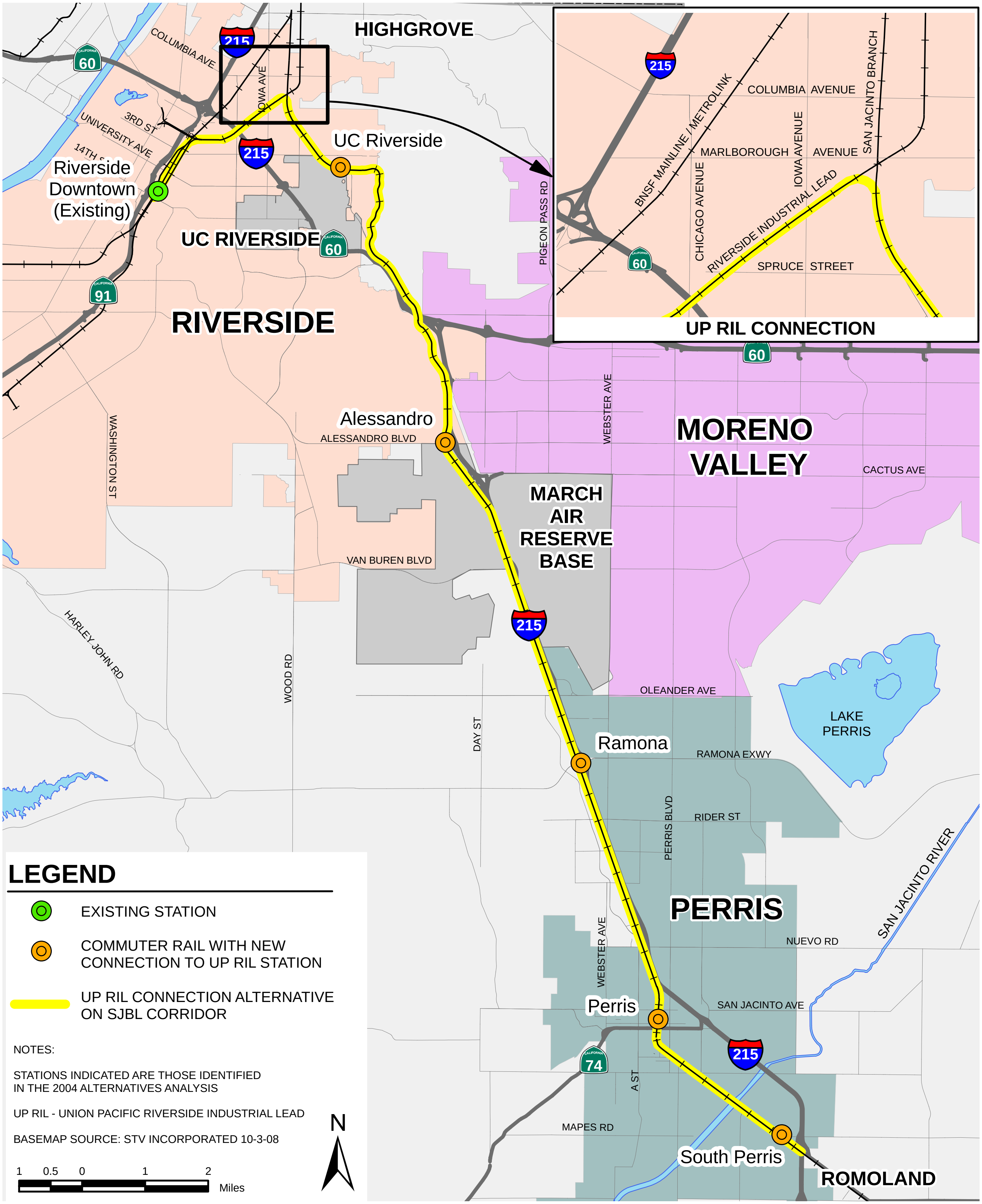
| DRAWN: | 3/9/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666busEIR.MXD |

2004 ALTERNATIVES ANALYSIS - EXPRESS BUS ALTERNATIVE

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

3.2-1

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| DRAWN BY: | JP |
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2004 ALTERNATIVES ANALYSIS - COMMUTER RAIL ALTERNATIVE WITH NEW CONNECTION TO UP RIL

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

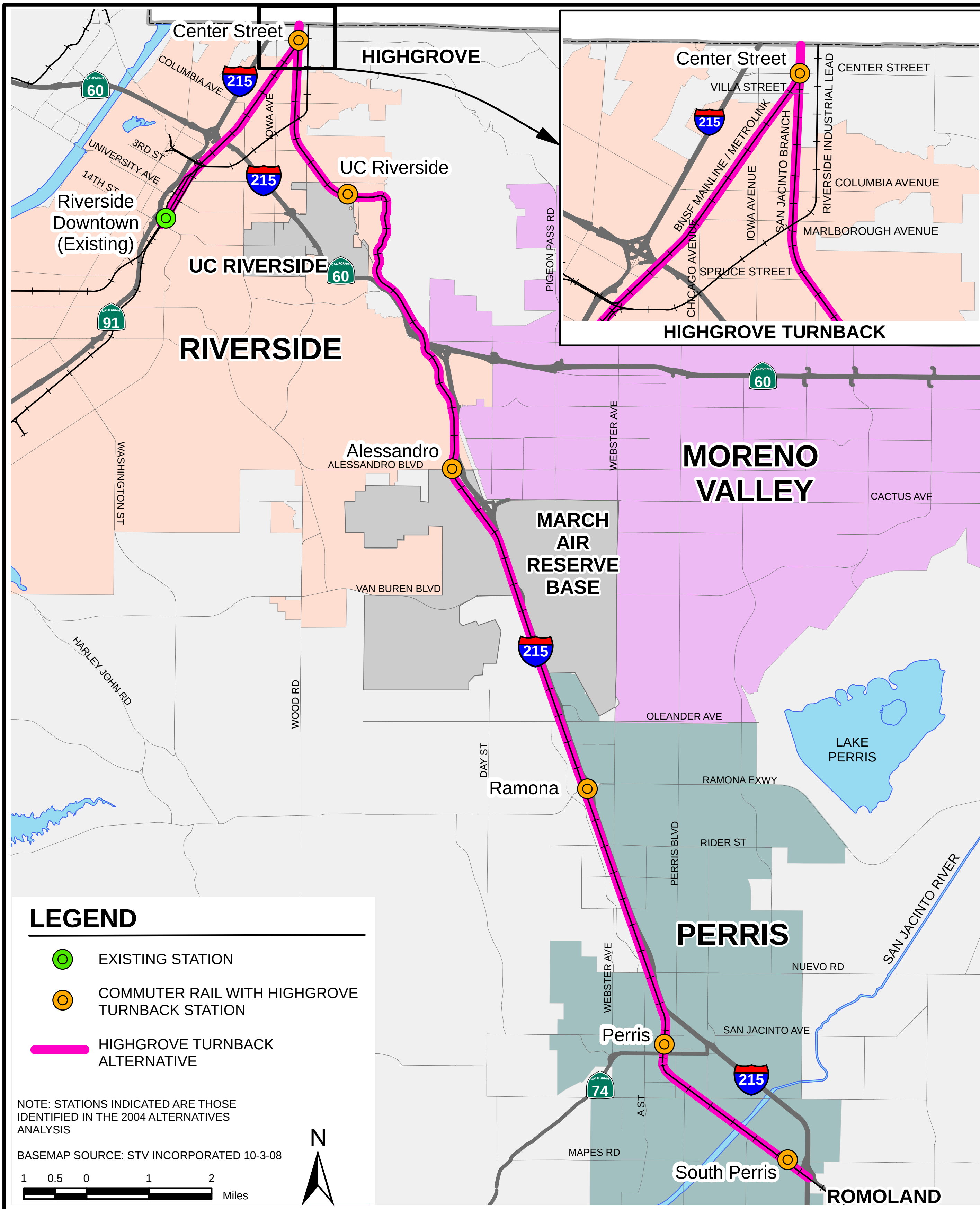
FIGURE

3.2-2

Perris Valley Line

RCTC

KLEINFELDER

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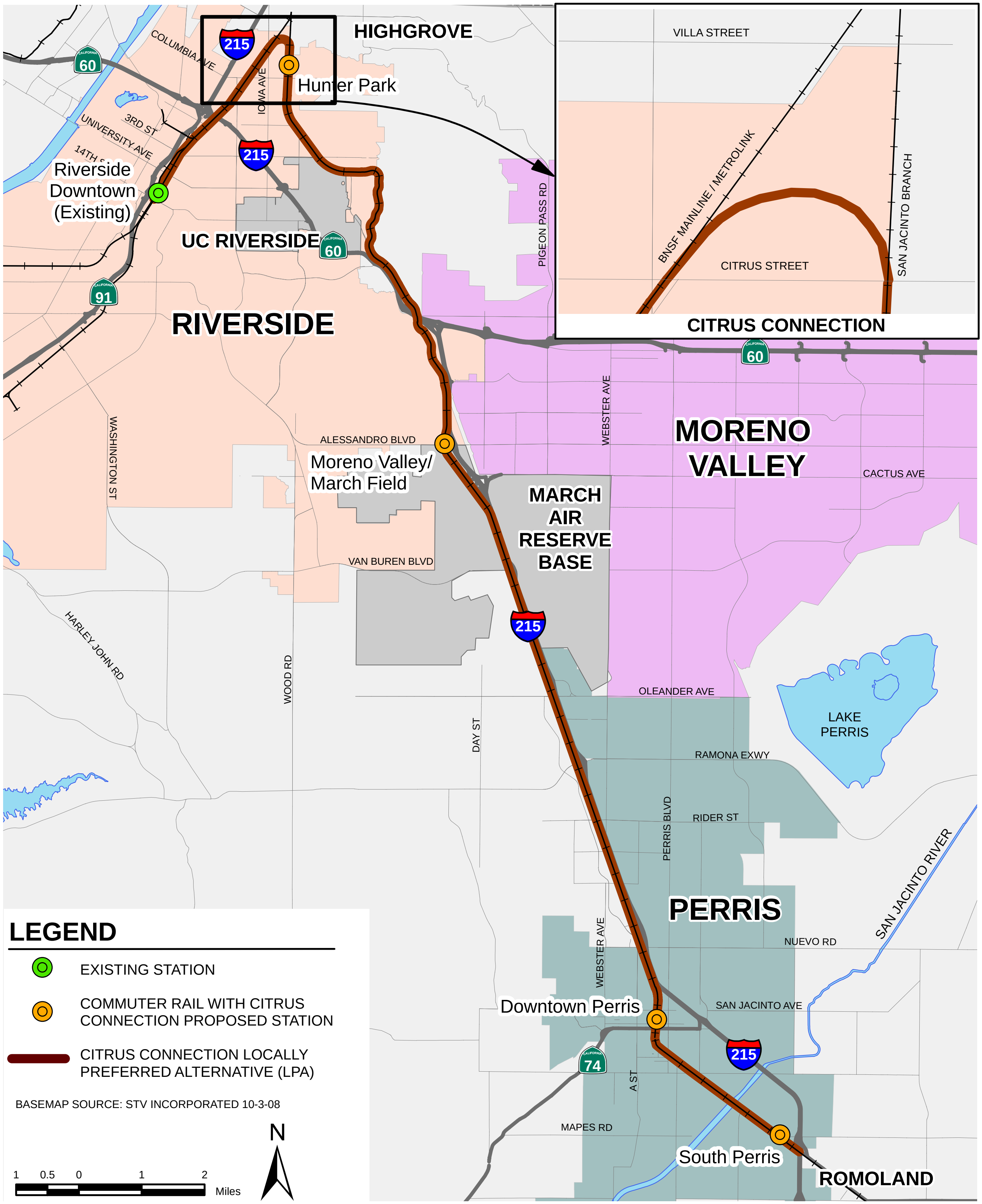
|---|---|---|---|
| PROJECT NO. | 92666 | 2004 ALTERNATIVES ANALYSIS - COMMUTER RAIL ALTERNATIVE WITH HIGHGROVE TURNBACK | FIGURE |
| DRAWN: | 3/9/10 | | 3.2-3 |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666hgroveEIR.MXD | | | |

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| DRAWN BY: | JP |
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| FILE NAME: 92666commEIR.MXD | |

LOCALLY PREFERRED ALTERNATIVE
COMMUTER RAIL
WITH CITRUS CONNECTION

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
3.2-4

### *3.2.1 No Project Alternative*

The No Project Alternative would be the continuation of current and long-range plans for highway improvements, and maintaining the existing rail corridor for continued freight service. There are several planned and programmed roadway improvements along I-215 to include widening this freeway between the I-215/SR-60 interchange and Nuevo Road, between Nuevo Road and Scott Road, and between Scott Road and Murrieta Hot Springs Road. Even with current and programmed improvements that include additional general purpose and High-Occupancy Vehicle (HOV) lanes, I-215 is forecasted to continue to operate at unsatisfactory service levels. As evidenced by increasing travel times, the I-215 freeway cannot keep pace with the projected demand resulting from population, employment, and development growth in the study corridor. With the major transportation facilities in the corridor, I-215 and SR-60, expected to continue experiencing unsatisfactory levels of service even with programmed roadway improvements over the coming years, there is a need for a new transportation alternative to accommodate current and future mobility needs.

The No Project Alternative would not meet any of the identified project Goals and Objectives. This alternative would not provide a different mode of passenger transportation between Riverside and Perris (auto and bus modes would still be tied to the congested roadway network). Additionally, it would not reduce highway congestion in the corridor, thus furthering impacts to the natural environment with increased impacts to air quality within the corridor. The No Project Alternative would not broaden the range of public transportation alternatives between the various urban areas along the corridor and region, nor would it build upon an underused transportation resource within the corridor. Therefore, the No Project Alternative was eliminated from further evaluation, since it did not meet any of the goals and objectives for the project.

### *3.2.2 Express Bus Alternative*

The Express Bus Alternative consists of low-capital improvements to existing transit facilities and services that would operate on I-215 HOV lanes between Downtown Riverside and Perris, as shown on Figure 3.2-1. To support this service, local feeder bus connections are proposed for the express bus route. Metrolink commuter rail service in Riverside would also benefit from any additional transfers from the feeder buses. The Express Bus Alternative comprises seven new stations within the I-215 corridor and two existing stations, including the Riverside Downtown Metrolink Station and the RTA Downtown Bus Terminal in downtown Riverside. The express bus service would be coordinated to reach the Riverside Downtown Metrolink Station during peak periods such that connections could be made to departing (AM) and arriving (PM) trains. In addition, linkages to local bus route services will complement the proposed service. Several local routes will incorporate an additional “express bus stop” in order to provide greater connectivity and faster transportation service between the municipalities in the corridor.

This alternative would not adequately meet a majority of the four established project goals and their respective objectives. While improving the attractiveness of public transit as an alternative to the automobile this option does not reduce highway congestion in the corridor. The congested freeways, in particular the I 215/SR-60 interchange, affect the ability for the Express Bus Alternative to provide congestion relief. The operation of this alternative would require the buses to continually cross highly congested mixed-flow lanes to use the planned HOV lanes between the new stations, thus adversely affecting their travel times and ridership. Ridership growth was projected to be minimal, largely due to longer travel times on the increasingly congested freeways. Minimizing environmental impacts for this alternative would not be met as effectively as the commuter rail alternatives. Seven new stations are proposed for the Express Bus Alternative, the greatest number of stations compared to the other alternatives, requiring more right-of-way acquisition which increases land use impacts to the corridor. As a result of the longest travel time from increasing highway congestion throughout the forecast years, impacts to air quality and traffic would be significant. Lastly, while this alternative proves to be the most cost effective (lowest total capital expenditure) the performance of this alternative was deemed insufficient to meet the needs of commuters in the corridor.

### *3.2.3 New Commuter Rail Alternatives*

Three build alternatives were identified that would implement commuter rail service in the corridor between Riverside and Perris. The study corridor includes an existing railroad right-of-way, the SJBL, which could provide a commuter rail route that would avoid the impediments to mobility that are found in the corridor and which cannot be adequately addressed by the other alternatives. The three new commuter rail alternatives are comparable because the alternatives are similar in terms of operation.

Each commuter rail alternative extends the Metrolink 91 Line service from the existing Downtown Riverside Station to San Bernardino, Orange, and Los Angeles Counties. The differences in the three commuter rail alternatives include the various options to connect the SJBL mainline for service to the existing Metrolink station in downtown Riverside. The commuter rail service would operate during the peak period and in the peak direction. The operating schedule will be such that arrival and departure at Los Angeles Union Station would coincide with typical work schedules, in an effort to make the new service as attractive as possible to commuters. Different route lengths and operational considerations for each alternative are described in detail below.

The Commuter Rail Alternatives successfully meet a majority of the project goals and objectives. Specifically, these alternatives build upon underused transportation resources since track in the region is currently only servicing freight operations. Commuter rail service expands not only the regional transit network but also beyond the study corridor and promotes a seamless transit system. These alternatives would strengthen older urban communities as centers of economic opportunity by fostering transit-oriented development. Improving mobility through the corridor without the dependency to rely on and add to the congestion of highways. Since all three commuter rail alternatives would satisfy the above stated project goals and objectives the remainder of the discussion will focus on the goals and objectives, specifically in terms of environmental impacts, that would not be meet by each alternative.

<u>Commuter Rail with New Connection to UP RIL</u>

This commuter rail alternative would connect the SJBL to the existing Riverside Downtown Station via the Union Pacific Riverside Industrial Lead (UP RIL) (an active freight service line) without connecting to the BNSF main line, as shown on Figure 3.2-2. A connection track would be constructed between the SJBL and the UP RIL near Rustin Avenue in Riverside. The new connection track would allow for continuous movement between the SJBL and the existing Riverside Downtown station. This commuter rail alternative with new Connection to UP RIL would include the construction of five stations.

The new connection at Rustin Avenue would require acquisition of one vacant tract and a parcel that contains an existing building. In addition, a new grade crossing with signal protection would be required. The new track would require the displacement of a commercial property and acquisition of new property for a new grade crossing both which would have significant land use impacts to the corridor. Further, this option resulted in significant vibration and displacement impacts that neither of the other commuter rail alternatives would induce. Although this alternative would provide direct access to the existing Downtown Riverside Station with the shortest travel time, this alternative would require the agreement and purchase of the RIL alignment from the Union Pacific and the RIL would need to be reconstructed resulting in higher initial capital costs as compared to the other commuter rail alternatives. While the UP RIL connection provides an alternative to highway congestion in the corridor and builds upon underused transportation resources it does not adequately coincide with the other project goals and objectives.

<u>Commuter Rail with Highgrove Turnback</u>

The Commuter Rail with Highgrove Turnback Alternative proposes an alignment that follows existing track along the SJBL and switches over to the BNSF mainline, as shown on Figure 3.2-3. The existing connection would require trains traveling in either direction to Riverside or Perris to reverse movement at Highgrove to continue to the next station. This alignment would join the BNSF main line track to continue on to the existing Riverside Downtown Station. FRA requires a safety check prior to a train changing direction. This safety check includes a brake check and a visual inspection by the train engineer, which results in significantly longer travel times. The connection to the BNSF track to reach the existing station in Riverside requires no new construction for track, but included in this alternative would be the construction of six new stations.

The evaluation of this alternative revealed operational issues resulting from a significant delay caused by the turnback movement in Highgrove. The time needed to reverse the train and conduct the required FRA brake tests results in a significantly longer travel time, and would likely reduce ridership levels. Because it does not require additional track, the Commuter Rail with Highgrove Turnback Alternative would not need to acquire any new property to connect the BNSF and SJBL alignments (only acquisition of station sites). As a result of increased idling time required for the commuter train to make its reverse movement, travel time increases and subsequently do does the impacts to air quality. Additionally, the reverse movement will impact traffic congestion in the Highgrove area with the commuter train blocking grade crossings as it sits idle. Although this alternative operates existing track and requires no acquisition for the track alignments, this alternative would have significant operational issues and environmental impacts. Therefore, the Commuter Rail with Highgrove Turnback Alternative does not meet the project goals and objectives.

<u>Commuter Rail with New Connection to BNSF at Citrus Street Alternative</u>

The Commuter Rail with New Connection to BNSF at Citrus Street Alternative (Citrus Connection) proposes a new, curved connection track north of Citrus Street between the SJBL and the BNSF right-of-way, as shown on Figure 3.2-4. The new connection track at Citrus Street would require a property acquisition, with no displacements. The proposed connection track would negate the need for a turnback operation as required in the Highgrove Turnback Alternative. This alignment would utilize the BNSF mainline to access the existing Riverside

Downtown Station. This commuter rail alternative, the Citrus Connection would include the construction of four stations.

The evaluation of this alternative reveals that it does not have the operational constraints of the Highgrove Turnback Alternative and would avoid the environmental and acquisition impacts of the UP RIL Alternative. This alternative would have higher initial capital costs due to a new track connection at Citrus Street. The utilization of existing transportation resources would be improved due to the use of the existing and available BNSF and SJBL mainlines. The Commuter Rail with New Connection to BNSF at Citrus Street Alternative provides the best opportunity to implement a quality transit alternative within the corridor that serves the goals and objectives of the project, and one that is not impeded by either highway congestion or railroad operational issues.

## 3.3 EVALUATION OF ALTERNATIVES

The alternatives were evaluated based upon the ability to meet the goals and objectives of the project. The matrix compares the alternatives in order to identify the alternative with the least environmental impact and best performing operationally and is shown in Table 1.3-1. RCTC concluded that commuter rail service would provide the best solution to the specific transportation problems in the study corridor.

In April 2008, RCTC adopted the Commuter Rail with New Connection to BNSF at Citrus Street Alternative ("Citrus Connection") as the Locally Preferred Alternative (LPA). The reasons for adopting this alternative include minimizing the impacts to the community by reducing business relocation, reducing air quality impacts, and decreasing the amount of acquisitions without the need for displacements. This alternative most closely meets the goals and objectives established for the corridor, therefore, this alternative was selected by the RCTC as the LPA in April 2008. The LPA has also been identified as the environmentally superior alternative.

**Table 3.3-1**
**Comparison of Alternatives to Proposed Project LPA**

| Environmental Issue Areas | Alternatives Considered in Draft EIR | | Alternatives Considered and Subsequently Rejected[(1)] | | |
|---|---|---|---|---|---|
| | No Project Alternative | Proposed Project LPA | Express Bus Alternative | Commuter Rail with New Connection to UP RIL Alternative | Commuter Rail with Highgrove Turnback Alternative |
| Meets Identified Project Objectives? | No | Yes | Yes | Yes | Yes |
| Aesthetics | No changes to existing condition | New stations constructed will be designed to fit into the surroundings and include landscaping | Buses will use the existing freeway lanes and once constructed HOV lanes | New stations constructed will be designed to fit into the surroundings and include landscaping | New stations constructed will be designed to fit into the surroundings and include landscaping |
| Agricultural Resources | No changes to existing condition | No impact | No changes to existing condition | No impact | No impact |
| Air Quality | Commuters will have increased travel time in their personal vehicles as congestion increases in the corridor | Commuter rail option allows commuters to decrease their travel time with shorter travel distances to PVL stations | Commuters will have increased travel times in the bus as congestion increases in the corridor | Commuter rail option allows commuters to decrease their travel time with shorter travel distances to stations | This commuter rail option requires trains to stop to prepare to reverse directions. During the stop trains will continue to run thereby emitting additional emissions. |
| Biological Resources and MSHCP Consistency | No changes to existing condition. | Replacement of the San Jacinto River and Overflow Bridges will result in wider openings for wildlife crossings. | Buses will use the existing freeway lanes and once constructed HOV lanes. | Replacement of the San Jacinto River and Overflow Bridges will result in wider openings for wildlife crossings. | Replacement of the San Jacinto River and Overflow Bridges will result in wider openings for wildlife crossings. |
| Cultural Resources | No changes to existing condition. | Less than significant impact. | No changes to existing condition. | Less than significant impact. | Less than significant impact. |
| Geology and Soils | No changes to existing condition. | No impact | No changes to existing condition | No impact | No impact |
| Hazards and Hazardous Materials | No changes to existing condition. | No impact | No changes to existing condition | No impact | No impact |
| Hydrology/Water Quality | No changes to existing condition | No impact | No changes to existing condition | No impact | No impact |

**Table 3.3-1 (cont'd)**
**Comparison of Alternatives to Proposed Project LPA**

| Environmental Issue Areas | Alternatives Considered in Draft EIR | | Alternatives Considered and Subsequently Rejected[1] | | |
|---|---|---|---|---|---|
| | **No Project Alternative** | **Proposed Project LPA** | **Express Bus Alternative** | **Commuter Rail with New Connection to UP RIL Alternative** | **Commuter Rail with Highgrove Turnback Alternative** |
| Land Use and Planning | No changes to existing condition. | Property acquisition will be needed for station sites and connecting track. | More property will be acquired to construct multiple stations. | Property acquisition will be needed for station sites, connecting track, and use of the UP RIL. | Property acquisition will be needed for station sites, but no connecting track is required. |
| Noise and Vibration | No changes to existing condition. | Noise and vibration impacts will occur; but will be mitigated with noise barriers, welded track, and installation of ballast mats. These measures will also provide noise and vibration attenuation for the existing freight trains that use the SJBL. | Noise will not be discernible due to the existing noise conditions with the freeway. | Noise and vibration impacts will occur; but will be mitigated with noise barriers, welded track, and installation of ballast mats. These measures will also provide noise and vibration attenuation for the existing freight trains that use the SJBL. | Noise and vibration impacts will occur; but will be mitigated with noise barriers, welded track, and installation of ballast mats. These measures will also provide noise and vibration attenuation for the existing freight trains that use the SJBL. |
| Transportation and Traffic | Commuters will have increased travel time in their personal vehicles as congestion increases in the corridor | Commuter rail option allows commuters to decrease their travel time with shorter travel distances to PVL stations, which decreases personal vehicles used in the corridor. | Compared to the proposed project this will have a greater impact by increasing the number of vehicles used to commute | Commuter rail option allows commuters to decrease their travel time with shorter travel distances to PVL stations, which decreases personal vehicles used in the corridor. | Commuter rail option allows commuters to decrease their travel time with shorter travel distances to PVL stations, which decreases personal vehicles used in the corridor. |
| Utilities and Service Systems | No changes to existing condition. | Less than significant impact. | Less than significant impact. | Less than significant impact. | Less than significant impact. |

Notes:
(1) The Alternatives Analysis was a qualitative analysis prepared in accordance with FTA requirements in 2004.

# 4.0 ENVIRONMENTAL ANALYSIS

Chapter 4.0 provides information on the regulatory setting and affected environment; evaluates potential environmental consequences of the proposed PVL project; and recommends mitigation measures, as necessary, for each environmental resource category. The environmental evaluations are based on preliminary design drawings (30 percent) (STV Inc., 2009). The intent of the analyses is to identify the types, locations, and magnitudes of potential environmental impacts and present this information to decision-makers, agencies and the public. The environmental evaluations also provide a basis for defining mitigation measures in order to reduce the potential impacts.

The analysis and conclusions provided in this chapter focus on the Citrus Connection, SJBL alignment, and station sites. The three miles of existing BNSF track between the Downtown Riverside Station and the proposed Citrus Connection would be used by the PVL commuter rail service. Aside from making the connection to the existing BNSF alignment, no other improvements will be completed on the BNSF alignment for the PVL project.

Implementation of the PVL would add additional trains onto the BNSF alignment; however, as an already heavily traveled rail freight corridor, the addition of twelve commuter trains a day in the opening year 2012 would not be an impact to the existing environment along the three mile stretch or on the BNSF system as a whole. There are no sensitive receptors along the BNSF that would be further impacted by the addition of twelve commuter trains per day. However, the technical studies completed for air, and noise and vibration evaluated the entire project alignment including the BNSF. Only these issue areas were evaluated because there was no physical improvements that would further impact the environment. It should also be noted that noise and vibration are not additive to the existing train traffic (since only one train at a time can use the track and not twelve at one time).

# 4.1 AESTHETICS

Aesthetics pertain to the elements that make a certain view pleasing to the eye. While the criteria to evaluate this perceived visual quality is subjective, contributing elements may include a distinct element in a visual setting or open spaces, vegetation, and architecture of a scenic area. Adverse impacts may occur through the removal, alteration, or addition of these important visual resources.

This section provides a discussion of the aesthetic resources along the PVL corridor.

## *4.1.1 Environmental Setting*

Regional Setting

The PVL project is located in western Riverside County and includes a rail corridor of approximately 24 miles between the cities of Riverside and Perris. The project area lies within the Perris, Moreno, and Santa Ana River valleys. Compared to eastern Riverside County, the western portion of the County contains the greater concentration of population and has experienced the greatest growth pressures (Riverside County, 2008).

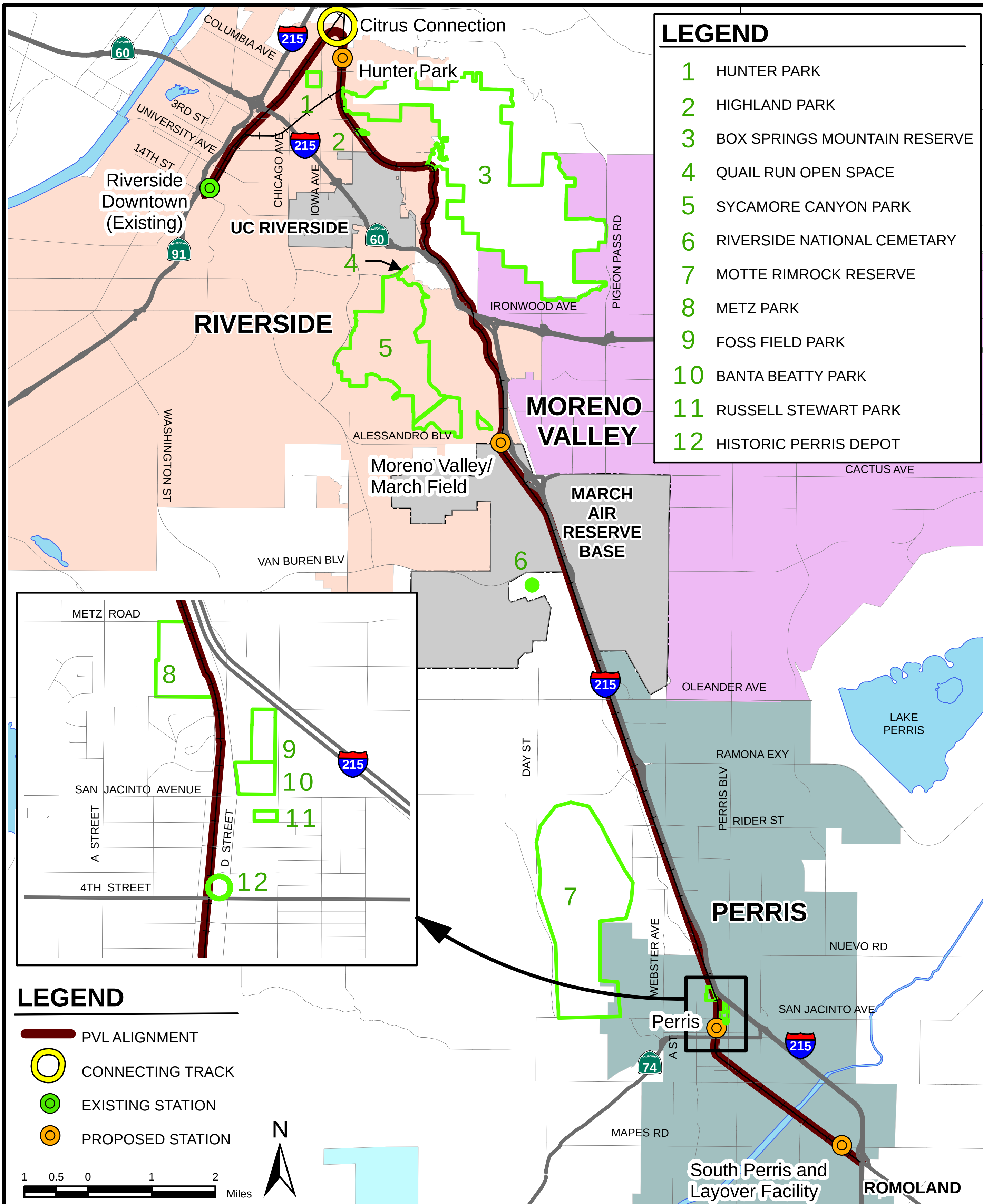
Western Riverside County is bounded by the Santa Ana Mountains and Cleveland National Forest on the west and the San Jacinto Mountains and the San Bernardino National Forest on the east. Major geographic features of this area include the Santa Ana River watershed, Lake Perris, Lake Elsinore, and the San Jacinto River.

Local Setting

The proposed PVL corridor is specifically located within the existing BNSF and SJBL alignments that run from the city of Riverside to south of the city of Perris. These railroads have been in operation since the 19th century, and both are still being used for freight operations today.

Up until the mid-1950s, the citrus industry played the predominant role in Riverside's economy and much of the land was agricultural. The population growth in the late twentieth century created pressure to convert this agricultural land to suburban uses. Today, most of the areas within Riverside have transitioned from agricultural to urban and built-up land.

The BNSF alignment currently intersects the SJBL alignment north of Citrus Street, which is the northernmost boundary of the PVL corridor. This northern portion of the PVL project, along the SJBL alignment in the city of Riverside, is developed and characterized by warehouses and industrial activities. Buildings in this area are of various heights, creating a skyline that is punctuated with telephone poles, multiple trees, and aircraft passing overhead. Hunter Park takes up a city block at the corner of Columbia Avenue and Iowa Avenue. The views around Hunter Park primarily consist of the surrounding industrial and business structures (Figure 4.1-1).

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|---|---|---|---|
| PROJECT NO. | 92666 | SCENIC VISTA LOCATIONS | FIGURE |
| DRAWN: | 12/21/09 | | 4.1-1 |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: | 92666scene.MXD | | |

The Citrus Connection, at the junction of the BNSF and SJBL alignments, is currently undeveloped but located north of light industrial buildings. The three sites under consideration for the new Hunter Park Station are also undeveloped parcels located adjacent to the SJBL alignment. This area is known as Hunter Business Park, a 1,300-acre industrial park in the City's northeast corner. Warehouses and other industrial and business facilities currently occupy the area, which is developing as a major employment center for the City (City of Riverside, 2007).

Southeast of Hunter Park Station, the PVL corridor transitions from the light industrial setting of the Hunter Business Park development to a primarily residential setting with houses, UCR, and Highland Park. Highland Park is located east of Watkins Drive between Spruce Street and West Blaine Street. Views to the east of the park include houses, trees, and Box Springs Mountain Reserve, while views to the west include houses, railroad tracks, Watkins Drive, and landscape trees. Box Springs Mountain Reserve has elevations over 1,600 feet ASL and views to the west that include medium-density residential and commercial structures at its base and most of the areas within the city of Riverside.

Following the SJBL alignment south, the PVL corridor transverses through a light industrial area, Quail Run Open Space and Sycamore Canyon Wilderness Park. These two parks cover over 1,550 acres of land west of the PVL corridor and north of Alessandro Blvd. Quail Run Open Space is adjacent to I-215 and Sycamore Canyon Wilderness Park is approximately one mile west of I-215 and the SJBL alignment. Views from these parks looking east include residential neighborhoods, agricultural lands, light industrial structures, the SJBL alignment, and telephone poles.

Continuing southerly, the proposed Moreno Valley/March Field Station would be located in an existing business park between the SJBL alignment and I-215. Moving further to the south, the SJBL alignment runs east of the Riverside National Cemetery. The Riverside National Cemetery must maintain a peaceful, pastoral setting in an otherwise urbanized environment, as such, trees and other vegetation visually screen it from the SJBL. Further south and also west of the PVL corridor, the Motte Rimrock reserve is situated near scattered warehouses, as well as industrial and residential properties.

South from Motte Rimrock Reserve, the PVL corridor intersects the city of Perris along the SJBL alignment and past four City parks. Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are located on both sides of the SJBL alignment and north of downtown Perris. These parks have views of the alignment and light industrial, agricultural, and residential structures. Downtown Perris is a developed area with commercial buildings, the SJBL alignment, and the historic Perris Depot. The City of Perris has approved plans to revitalize downtown with new walkways, renovated storefronts, and residential land uses surrounding the Multimodal Transit Facility, which is currently under construction adjacent to the SJBL alignment and would include the Downtown Perris Station (City of Perris, 2005).

South of downtown Perris, the visual landscape around the PVL corridor is primarily agricultural with scattered development including an airport and a wastewater treatment complex south of and across the street from the SJBL alignment at the end of the corridor. The City of Perris General Plan shows this area as retail commercial and business park uses accessible from I-215 (City of Perris, 2005).

Views from Scenic Highways

Scenic Highways are designated on a national, state, and local level. On a national level they are identified as National Scenic Byways, on a state level as State Scenic Highways, and on a local level as Scenic and Special Boulevards (Figure 4.1-2).

A segment of SR-74 listed as an eligible State Scenic Highway is located in the vicinity of the PVL corridor (Caltrans, 2007). The segment that is considered eligible for designation is located west of the eastern boundary of the city of Hemet to the I-5 intersection in San Juan Capistrano, and intersects the PVL corridor in downtown Perris. Known as West 4th Street in the City, SR-74 runs east, crosses the SJBL alignment, and joins the I-215. The views in this area include a moderately industrialized downtown with various commercial, business, industrial, and residential buildings.

The Ramona Expressway is a National Scenic Byway located in the vicinity of the PVL corridor. (USDOT, 2009) The segment of Ramona Expressway that is designated as a National Scenic Byway is located west of its intersection with E Main Street in San Jacinto to the east side of I-215, north of Motte Rimrock Reserve.

Additionally, the City of Riverside has established three Scenic and Special Boulevards within the project area: Palmyrita Avenue, Marlborough Avenue, and Alessandro Boulevard (City of Riverside, 2007).

Palmyrita Avenue and Marlborough Avenue are located northeast of downtown Riverside. They both extend east/west through Riverside and have views of Box Springs Mountain Reserve to the east. The segment of Palmyrita Avenue that is labeled as a Special Boulevard is between I-215 and Mt. Vernon Avenue to the east. The segment of Marlborough Avenue that is labeled as a Special Boulevard is between Chicago Avenue and Northgate Street, which is east of the BNSF alignment and crosses the SJBL alignment.

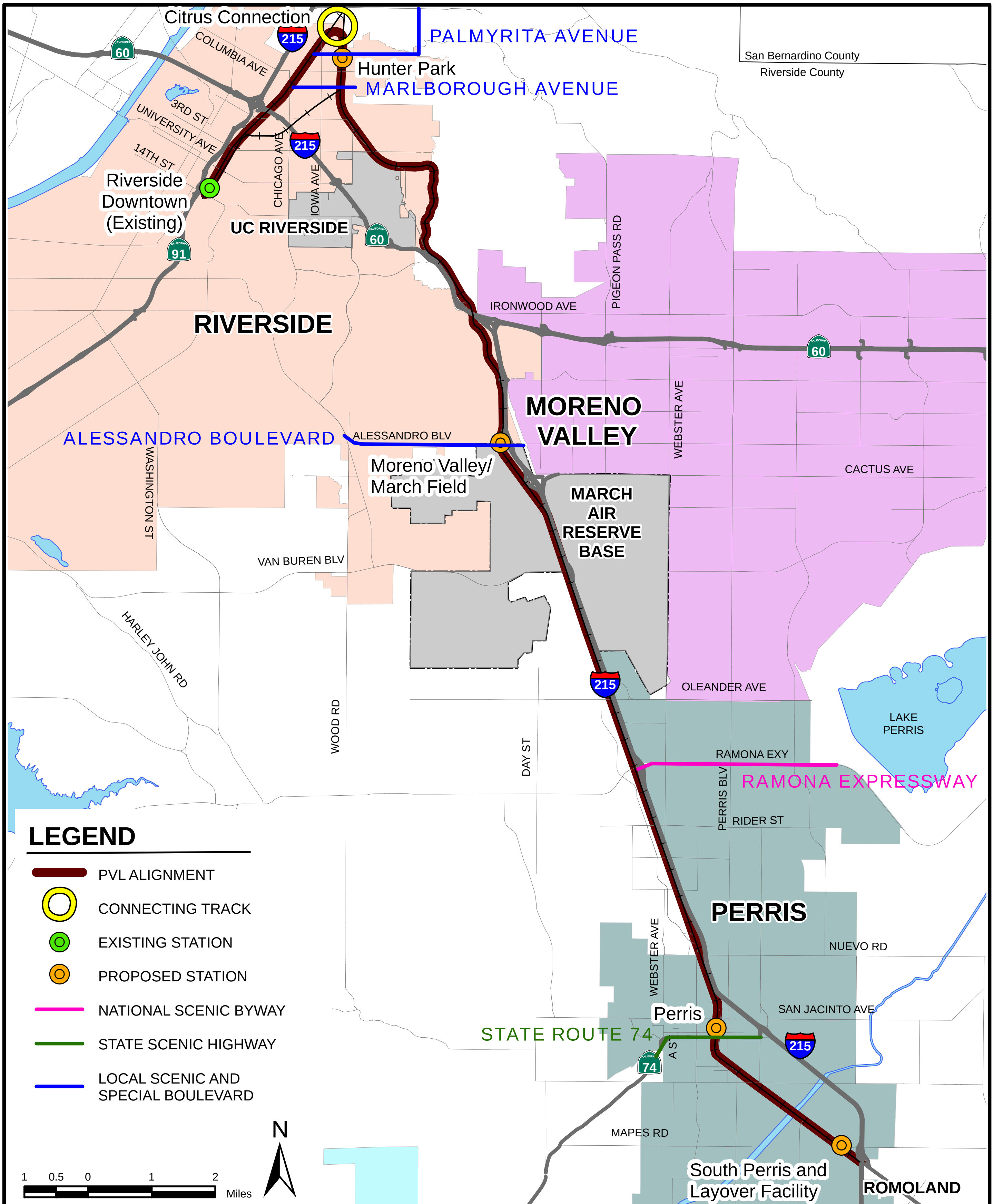
Alessandro Boulevard is approximately 1.5 miles south of the I-215/SR-60 interchange and extends east/west from Riverside through the City of Moreno Valley. The segment of Alessandro Boulevard that is labeled as a Scenic Boulevard is the portion between the SJBL alignment and Mission Grove Plaza to the west. Sycamore Canyon Wilderness Park can be seen on either side of the boulevard at this segment.

### *4.1.2 Regulatory Setting*

Federal Policies and Regulations

*National Scenic Byways Program*

The U.S. Department of Transportation Federal Highways Administration collaborated with several organizations to create a program for America’s scenic highways, called the National Scenic Byways Program (U.S. Department of Transportation [USDOT], 2009). The U.S. Secretary of Transportation identifies the California Department of Transportation (Caltrans) as the California state agency responsible for implementing the National Scenic Byways Program.

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|---|---|---|---|
| PROJECT NO. 92666 | SCENIC ROUTES | FIGURE |
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| DRAWN BY: JP | | |
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State Policies and Regulations

*California Environmental Quality Act*

CEQA provides for the protection of aesthetic resources and requires that potential impacts, which could result from the proposed project, be evaluated. The CEQA Guidelines provide four criteria used to evaluate the significance of potential impacts to aesthetic and visual quality: (1) negative effects on a scenic vista, (2) damage to scenic resources within a state scenic highway, (3) degradation of the visual character or quality of a site and its surroundings, and (4) creation of a new source of substantial light or glare affecting views. These four criteria will be discussed in Section 4.1.4.

*California Scenic Highways Program*

In response to the National Scenic Byways Program, Caltrans established and implemented the California Scenic Highway Program to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment (Streets and Highways Code, §260 *et seq*).

Caltrans defines a State Scenic Highway as any freeway, highway, road, or other public ROW that “traverses an area of outstanding scenic quality, containing striking views, flora, geology, and other unique natural attributes” (Caltrans, 2009).

Caltrans also includes “scenic corridors” in the State Scenic Highway Program: “Scenic corridors consist of land that is visible from, adjacent to, and outside the highway ROW, and is comprised primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries” (Caltrans, 2009).

Once a highway has been designated a state or national scenic highway, or a scenic corridor, special consideration must be made whenever a project proposes to develop the surrounding area.

Local Policies and Regulations

*Riverside County General Plan*

The Riverside County General Plan emphasizes concentrating growth near or within existing urban boundaries, permanently preserving important natural and scenic resources, incorporating open space within urban areas, ensuring compatibility of historic and new development, conserving view corridors, skylines, and scenic vistas, and imposing restrictions on development activities that may adversely affect scenic resources (Riverside County, 2008). According to the Multipurpose Open Space Element chapter in the Riverside County General Plan, “Scenic vistas are points, accessible to the general public, that provide a view of the countryside” (Riverside County, 2008).

*Riverside County Ordinance 655*

Riverside County Ordinance 655 requires that lighting for new construction areas within 45 miles of the Palomar Observatory be shielded and focused in order to minimize spill light into the night sky and onto adjacent properties (Riverside County, 1988). This ordinance also applies to parking lots and walkways. This protects the night sky from light pollution which affects astronomical observation and research.

*City of Riverside General Plan*

The City of Riverside General Plan lists a number of policies that serve to limit impacts on aesthetics and visual resources along roadways in the city of Riverside. This plan utilizes the Caltrans term and definition of State Scenic Highways. For scenic corridors, the City of Riverside General Plan uses the terms “Scenic Boulevards”, “Special Boulevards”, and “Scenic Parkways” (City of Riverside, 2007).

*City of Perris Ordinance Number 1051*

The City of Perris Ordinance Number 1051 requires the use of certain types of light fixtures on non-residential properties to reduce glare and the intrusion of unwanted light onto adjoining properties, the public ROW, and the night sky (City of Perris, 1997).

### *4.1.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Aesthetics is defined by:

1. *Does the project cause substantial adverse effect on a scenic vista*

2. *Does the project cause substantial damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway*

3. *Does the project substantially degrade the existing visual character or quality of the site and its surroundings*

4. *Does the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area*

### *4.1.4 Project Impacts*

***Does the project cause substantial adverse effect on a scenic vista***

<u>Citrus Connection</u>

The proposed Citrus Connection would be located on vacant land north of Citrus Street and near the intersection of the BNSF and SJBL alignments. The Citrus Connection is anticipated to be approximately 2,000 feet long, and connect with the BNSF and SJBL alignments. This track will be relatively level with the new railroads placed on ballast rock.

Box Springs Mountain Reserve is about one mile east of the proposed Citrus Connection location and can be seen in the distance to the southeast, though partially blocked by the intervening development. The visual landscape of the area consists of existing public roads and railways, and industrial, commercial, and residential land uses.

New track installed as part of the Citrus Connection would closely resemble existing conditions and therefore would not greatly alter the visual landscape or introduce new visually impacting elements near Box Springs Mountain Reserve. Therefore, there is no impact for this issue area.

SJBL Alignment

The SJBL alignment currently extends south from its intersection with the BNSF alignment in Riverside to its intersection with I-215/SR-74 south of Perris.

The views around the SJBL alignment transition from the industrialized downtown Riverside, to agricultural and residential areas in the city of Riverside, to agricultural, industrial, and open space land in Riverside County. The alignment continues south through the commercial buildings in downtown Perris to the agricultural and scattered development in the southern extent of the PVL corridor.

Hunter Park is a block west of the SJBL alignment adjacent to downtown Riverside and cannot be seen from the track due to the industrial development of the area.

Highland Park is adjacent to the SJBL alignment in a residential area within the city of Riverside. From the existing SJBL alignment, the park can be seen to the east, in addition to Box Springs Mountain Reserve and the surrounding educational and residential properties.

Box Springs Mountain Reserve is located to the east and southeast of the SJBL alignment, though partially blocked by intervening development, including industrial, commercial, and residential structures.

Further south along the SJBL alignment in Riverside County, the views include Quail Run Open Space, Sycamore Canyon Wilderness Park, Riverside National Cemetery, and Motte Rimrock Reserve to the west. Additional views from the SJBL alignment in this area include light industrial and agricultural facilities.

Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are all located adjacent to the existing SJBL railway in a light industrial area within the city of Perris.

This portion of the PVL project involves upgrading the existing track along the SJBL alignment, which has been in operation for almost a hundred years, in addition to adding a double track in certain segments (see Figure 2.4-3). Since only ground-level changes would be made, proposed development would resemble existing conditions and therefore would not alter the visual landscape or introduce new visually impacting elements near these sensitive scenic vistas.

Stations

The four proposed stations would each include a 680-foot-long side platform, a track-side canopy structure, a ticket kiosk, a shelter comprised of mast-supported roof planes, and a parking lot.

*Hunter Park Station Options*

The Hunter Park Station would be constructed at one of three proximate sites located adjacent to the SJBL alignment and south of the Citrus Connection. The Palmyrita Avenue Station option is north of Columbia Avenue and east of the ROW. This is currently being developed for light industrial use. The Columbia Avenue Station option is south of proposed Palmyrita Station option west of the ROW. The site currently hosts industrial facilities and a citrus orchard. The citrus orchard at the Columbia Avenue station is bordered on three sides by commercial buildings and Columbia Avenue to the south. There are no sensitive receptors in the area and the only views of the orchard are from the surrounding building. The Marlborough Station option is just north of and adjacent to Marlborough Avenue, and is located on cleared, disturbed land about 1,000 feet south of the Columbia and Palmyrita Station options.

Box Springs Mountain Reserve abuts the existing SJBL alignment and can be seen extending southeast from the proposed station locations. Hunter Park, meanwhile, cannot be seen from any of the three proposed sites at the Hunter Park Station due to intervening development. The views around the proposed station consist of roads, agricultural land, and industrial buildings with equal or greater vertical heights as the proposed development.

Based upon the current development in the area, the proposed station would be consistent with existing conditions and would not introduce new visually impacting elements near Box Springs Mountain Reserve or Hunter Park.

*Moreno Valley/March Field Station*

The March Field/Moreno Valley Station has already been approved as part of the Meridian Business Park Plan in 2003. The Environmental Impact Report for the Specific Plan indicated that Sycamore Canyon Wilderness Park would be preserved (March JPA, 2003). Therefore, the March Field/Moreno Valley Station is not expected to introduce new visually impacting elements near Sycamore Canyon Wilderness Park.

*Downtown Perris Station*

The site for the Downtown Perris Station is located along the SJBL alignment just north of SR-74. This station is part of the Perris Multimodal Transit Facility that is currently under construction adjacent to the SJBL alignment in downtown Perris.

Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are located to the north and are not visible from the proposed Downtown Perris Station. The views around this station consist of light industrial, agricultural, and residential structures. Additionally, the City of Perris has approved plans to revitalize downtown with new walkways, renovated store fronts, and residential land uses surrounding the Multimodal Transit Facility (City of Perris, 2005).

Based upon the existing conditions and the planned construction, the proposed station would be consistent with the visual landscape and would not introduce any new visually prominent elements that would negatively impact scenic vistas in the area.

*South Perris Station and the Layover Facility*

There are no scenic vistas identified in the vicinity of the proposed South Perris Station and the Layover Facility.

Bridges

There are no scenic vistas identified in the vicinity of the two proposed bridge replacements.

Communication Towers

The PVL project includes the construction of communication towers and associated equipment shelters: East Maintenance Facility (outside the PVL corridor); CP Citrus Radio Tower, Palmyrita Station Microwave Tower; CP Marlborough Radio Tower; CP Eastridge Radio Tower; CP Oleander Radio Tower; CP Nuevo Radio Tower; South Perris Station Communication Shelter and Tower; and Control Point Mapes Radio Tower (Figure 4.1-3). A shelter or equipment box located near the base of these towers would house equipment and electronics and would be surrounded by a block wall or other type of security fence.

There are no scenic vistas in the vicinity of the East Maintenance Facility, the South Perris Station Communication Shelter and Tower, and the Control Point Mapes Radio Tower and therefore no impacts are anticipated at those three locations.

*CP Citrus Radio Tower, Palmyrita Station Microwave Tower, and CP Marlborough Radio Tower*

The CP Citrus Radio Tower would be located near the proposed Citrus Connection site and along the existing railroad tracks. The Palmyrita Station Microwave Tower would be installed near the proposed Hunter Park Station in Riverside.

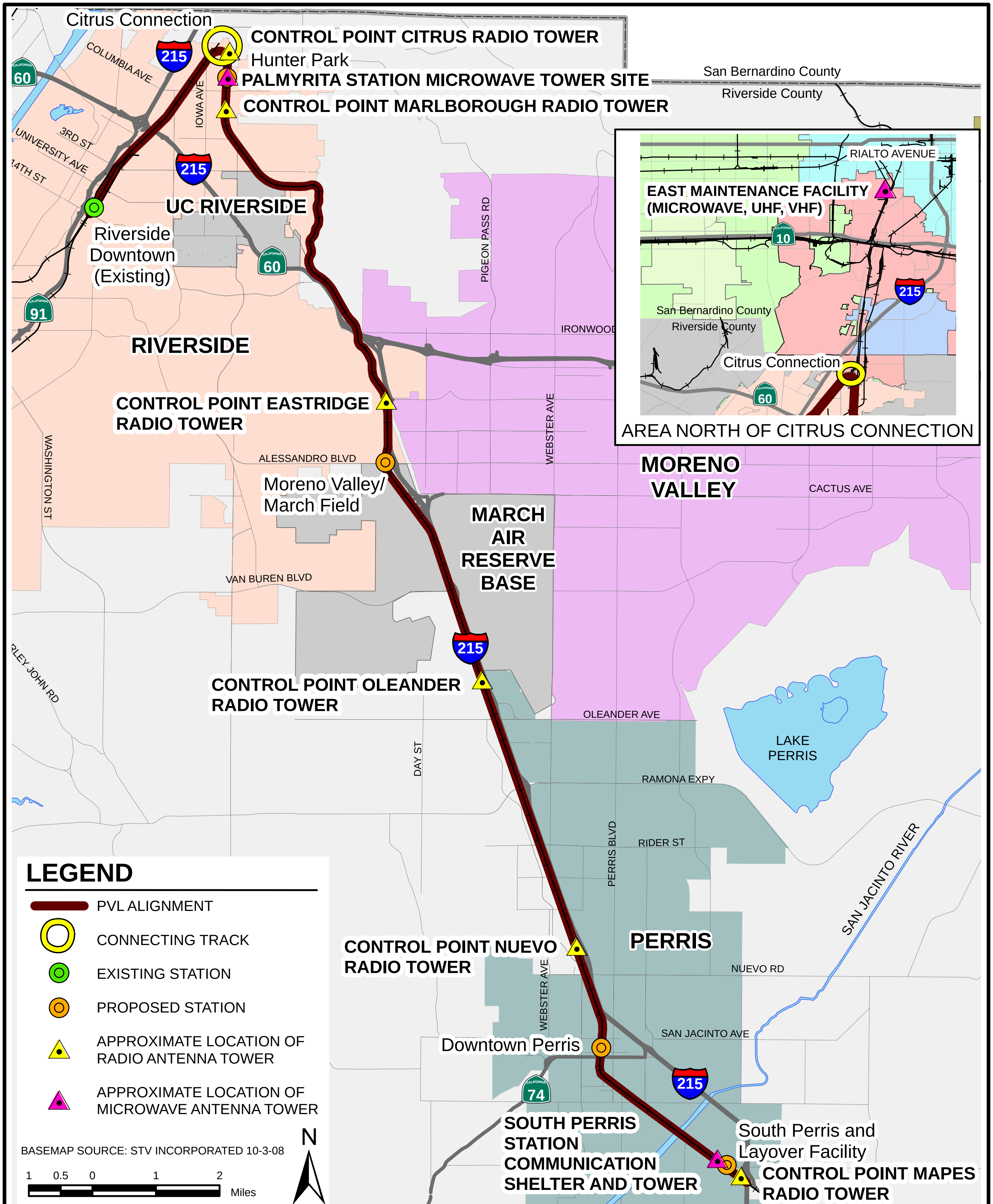
Box Springs Mountain Reserve would be seen to the southeast of the proposed towers. This view of the reserve would also include the agricultural lands, telephone poles, and industrial structures of varying heights that currently occupy the visual landscape.

The proposed towers would have thin profiles and the proposed shelter would not exceed the height of structures in the surrounding area. Based upon this and the elevation of the reserve, development at this segment of the PVL project would be consistent with the existing visual landscape and would not introduce new visually impacting elements near Box Springs Mountain Reserve.

*CP Eastridge Radio Tower*

This tower would be located west of the SJBL alignment between Alessandro Boulevard and the I-215/SR-60 interchange.

Sycamore Canyon Wilderness Park would be seen one mile west of the proposed tower. Agricultural lands, industrial structures, and telephone poles currently exist between this tower and the park. Despite the intervening development, drivers or train commuters along I-215 or the SJBL railway can also see the park in the distance to the west, which has elevations ranging from 1,100 -1,600 feet ASL.

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|---|---|---|---|
| PROJECT NO. | 92666 | COMMUNICATION<br>TOWER LOCATIONS | FIGURE<br>**4.1-3** |
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Based upon existing conditions and the proposed tower's thin profile, it would be consistent with the visual landscape and would not introduce new visually impacting elements near Sycamore Canyon Wilderness Park.

*CP Oleander Radio Tower*

The CP Oleander Radio Tower is located south of the MARB along the PVL corridor.

From this proposed tower, the view of Riverside National Cemetery would consist of moderately rural land with scattered industrial structures and telephone poles throughout. Trees line the boundary that is adjacent to the SJBL alignment and mostly block views into the cemetery. Additionally, business park development has been planned north of the cemetery (March JPA, 2003).

The proposed tower would have a thin profile that is similar to the existing telephone poles. Therefore the tower would be consistent with the visual landscape and would not introduce new visually impacting elements around the Riverside National Cemetery.

*CP Nuevo Radio Tower*

This tower would be located just north of Nuevo Road in Perris and adjacent to the PVL corridor.

Motte Rimrock Reserve would be seen to the west of the proposed Nuevo Radio Tower. The view of the reserve from this proposed tower would also include approximately 1/2 mile of the agricultural lands, scattered residential and industrial properties, and telephone poles that currently occupy the visual landscape. In addition to the intervening development, drivers or train commuters along I-215 or the SJBL railway can see the reserve in the distance to the west, which has elevations ranging from 1,500 -1,900 feet ASL.

Based upon existing conditions and the proposed tower's thin profile, it would be consistent with the visual landscape and would not introduce new visually impacting elements near Motte Rimrock Reserve.

<u>Noise Barriers</u>

During the analysis of the project noise related impacts were identified in the Watkins Drive area in the City of Riverside. The feasible and appropriate mitigation for the identified impacts are the construction of noise barriers. The noise barriers will be located near the outside edge of the RCTC ROW. In some cases the new barrier would replace the current boundary fencing between the private residences and the ROW. Additionally, the built environment in this area has developed with buildings, landscape trees, and fencing such that the addition of noise walls would not block views of the nearby mountains. Details regarding the noise barriers are provided in Section 4.10 Noise and Vibration.

<u>Landscape Walls</u>

<u>The term "landscape wall" describes a free-standing, masonry block wall that will be deployed for reasons other than noise mitigation. A landscape wall will be constructed as part of the PVL</u>

project at Highland Elementary School and Hyatt Elementary School, as shown on Figure 4.1-4. Additionally, RCTC will fund another landscape wall at Nan Sanders Elementary School.

In contrast with noise barriers, landscape walls are not mitigation for any identified impacts. ~~Instead, landscape walls are primarily aesthetic.~~ In discussions with the Riverside Unified and the Perris Union School Districts, it was mutually agreed that the three schools along the PVL would receive a benefit from a landscape wall~~visual barrier~~ that would provide a screen between the schools and the railroad ROW.

As such, RCTC agreed the project will provide landscape walls, 8-10 ft. in height, as shown in Figure 4.1-4~~3~~. The landscape walls will be located within PVL ROW adjacent to the school properties ~~as a "good neighbor" gesture to the schools~~, not as mitigation. The landscape walls are not intended to provide any function beyond that of a visual screen. They are neither a noise barrier, nor should they be construed as a safety feature.

*Landscape Wall near Highland Elementary School*

This landscape wall will be located between two of the noise mitigation barriers (see Section 3.4 Noise and Vibration). This location will create a continuous 3,140 foot long wall between Spruce Street Blaine Street. The height of the wall/barrier will vary between 9 and 13 feet.

From the proposed landscape wall location at the school's western property boundary, the view of Box Springs Mountain Reserve currently includes medium-density residential buildings. Elevations of the reserve are vast compared to the height of even the tallest structures in the area. Highland Park is also visible from the proposed landscape wall location, though rows of trees line both sides of the SJBL alignment segment and partially block views into the park.

Since the proposed wall would be to the west of the school, their views of Highland Park to the northeast and Box Springs Mountain Reserve to the east would not be impacted. For the residential properties on the west side of the tracks, any views of Box Springs Mountain Reserve and Highland Park currently include chain link fences, the existing railway, Watkins Drive, street parking, trees on either side of the road, and intervening buildings. Additionally, these residential properties are rental units with two floors; units on the bottom floor currently have no views of the park or the reserve because of the tall wood fence that encircles each patio. Units on the top floor are elevated and currently have views that look out above the tree line.

The height of the proposed landscape wall would not exceed the height of existing structures and trees in the area. Therefore, this proposed landscape wall would not significantly impair scenic views of the park and reserve, or substantially degrade the existing visual landscape of the area.

*Landscape Wall near Hyatt Elementary School*

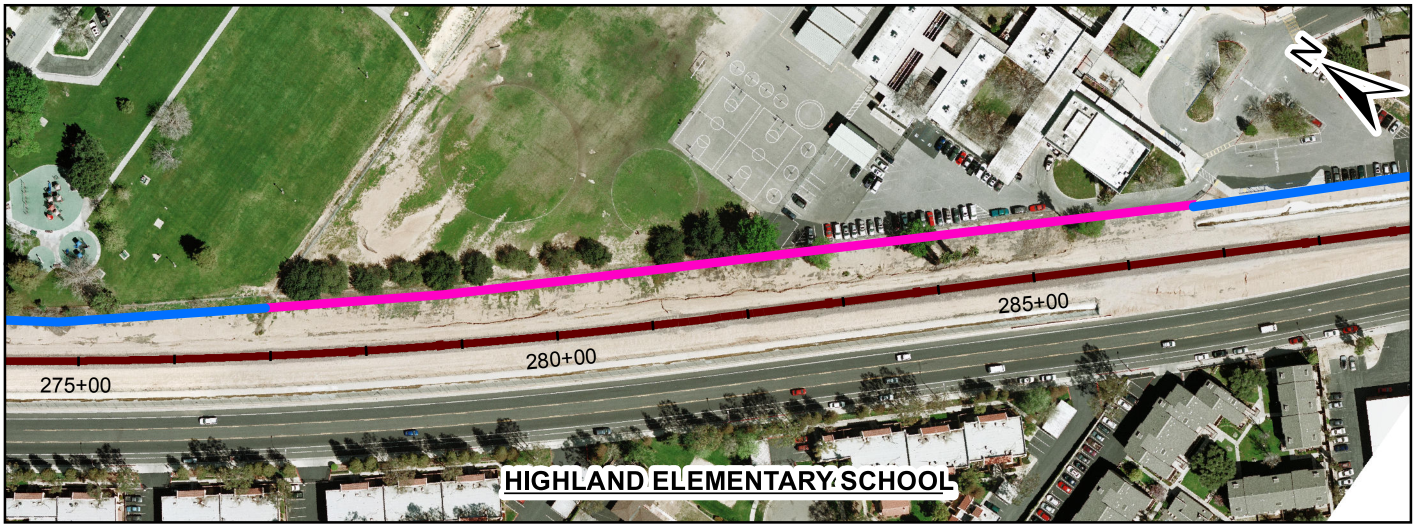
The landscape wall at Hyatt Elementary School would be placed along the length of the school's eastern frontage with the SJBL alignment.

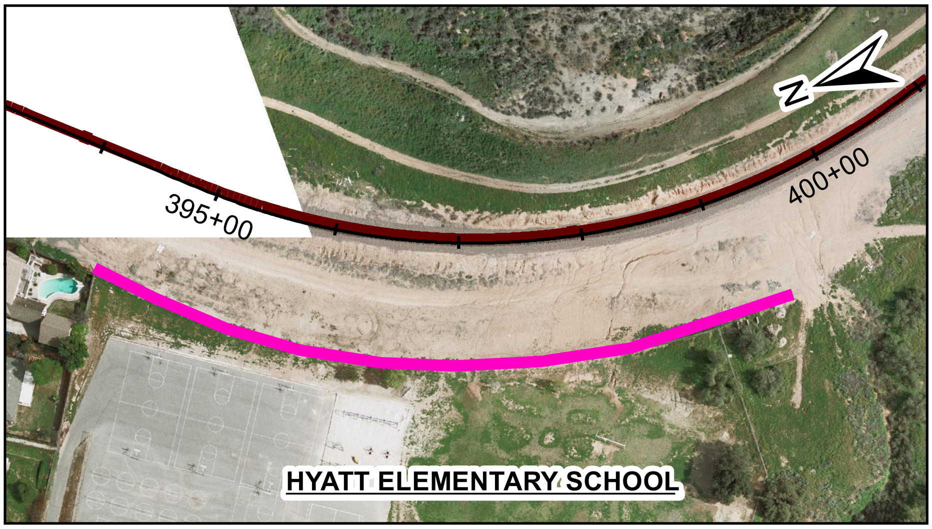
Box Springs Mountain Reserve is adjacent to the railroad and the school. Other properties in this area are located to the west of the school and largely consist of medium-density residential buildings. ~~Hyatt Elementary School is built on a hill that is elevated above the surrounding buildings; any views of the reserve from these locations are largely obstructed by the school buildings.~~

Since this landscape wall would not exceed the height of the existing school buildings, its construction would not significantly alter the visual landscape or impair scenic views of the reserve.

*Landscape Wall near Nan Sanders Elementary School*

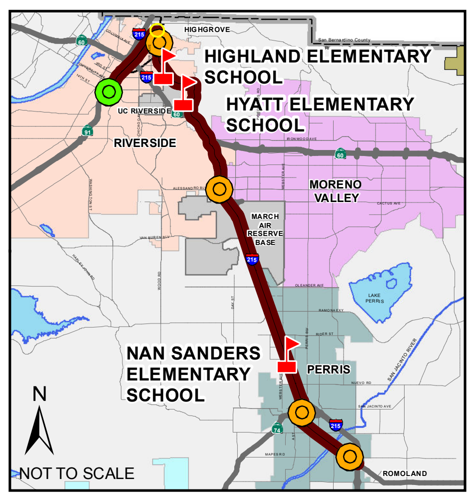
It is anticipated that this wall would block views of the ROW as well as views of the I-215. These are not identified as significant views for this area of the project because the rail alignment along this portion is not considered valuable scenic resources. It should be noted that there are ROW constrictions at Nan Sanders Elementary School, therefore, RCTC will provide funding for the design and construction of the landscape wall on the school's property, in lieu of constructing the wall.




NOTE:

DUE TO RIGHT OF WAY CONSTRICTIONS AT NAN SANDERS ELEMENTARY SCHOOL, RCTC WILL PROVIDE FUNDING FOR THE DESIGN AND CONSTRUCTION OF THE LANDSCAPE WALL.




KEY MAP

## LEGEND

| | |
|---|---|
| (dark red line) | PVL ALIGNMENT |
| (magenta line) | APPROXIMATE LOCATION OF LANDSCAPE WALLS |
| (blue line) | APPROXIMATE LOCATION OF NOISE BARRIER FOR HIGHLAND ELEMENTARY SCHOOL |

NOT TO SCALE

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | **LANDSCAPE WALL LOCATIONS** | FIGURE |
| DRAWN: | 6/14/11 | | **4.1-4** |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666lscapeEIR.MXD | | | |

I-215 RIVERSIDE—MORENO VALLEY—PERRIS Perris Valley Line

RCTC

KLEINFELDER Bright People. Right Solutions.

***Does the project cause substantial damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway***

The segment of SR-74 that is eligible for designation as a State Scenic Highway and the Ramona Expressway intersect the PVL corridor.

Additionally, the City of Riverside has established three Scenic and Special Boulevards that fall within the PVL corridor: Palmyrita Avenue, Marlborough Avenue, and Alessandro Boulevard.

Citrus Connection

Palmyrita Avenue and Marlborough Avenue are located one block south of the proposed Citrus Connection. However, neither avenue would be visible from the connection due to the industrial and commercial structures that are present throughout the area. No trees, rock outcroppings, or historical buildings are located at or near this location.

Due to existing development in the area, the proposed Citrus Connection would not introduce new visually impacting elements that would detract from the views along Palmyrita Avenue and Marlborough Avenue.

SJBL Alignment

Palmyrita Avenue and Marlborough Avenue both cross the SJBL alignment northeast of SR-60 and downtown Riverside. Industrial and commercial structures line both sides of Palmyrita Avenue and Marlborough Avenue, and Box Springs Mountain Reserve can be seen down the corridors to the east. No trees, rock outcroppings, or historical buildings are located at or near this location.

The National Scenic Byway, Ramona Expressway, enters the PVL corridor approximately 1.5 miles south of the MARB and at the east side of the SJBL alignment and I-215. The view from Ramona Expressway at this location consists of a mixture of agricultural land, light industrial structures, residential properties, and the existing SJBL alignment. No trees, rock outcroppings, or historical buildings are located at or near this location.

SR-74 is known as West 4th Street in downtown Perris and passes east through the City, crosses the SJBL alignment, and joins the I-215. The view of SR-74 in this area includes a moderately industrialized downtown with various commercial, business, industrial, and residential buildings. No trees or rock outcroppings are located in this area, but the Perris Depot is a significant historic building located in the vicinity (see Downtown Perris Station).

This segment of the PVL project involves upgrading the existing track along the SJBL alignment, which has already been in operation for a number of decades. Since only ground-level changes would be made, proposed development would resemble existing conditions and therefore would not introduce new visually impacting elements to the area or detract from the scenic views of Palmyrita Avenue, Marlborough Avenue, Ramona Expressway, or SR-74.

Stations

*Hunter Park Station options*

Two of the three proposed sites for the Hunter Park Station option are located along Palmyrita Avenue and Marlborough Avenue. The Columbia Avenue Station option does not share visual connectivity with either Avenue. Industrial and commercial structures surround the three proposed sites and line both sides of Palmyrita Avenue and Marlborough Avenue. Box Springs Mountain Reserve can be seen down the corridors to the east. No trees, rock outcroppings, or historical buildings are located at or near the proposed development locations.

The height of the proposed station buildings would not exceed the existing height of structures in the area. Therefore, the proposed development would be consistent with existing conditions and would not introduce new visually impacting elements that would detract from the scenic views along Palmyrita Avenue and Marlborough Avenue.

*Moreno Valley/March Field Station*

This proposed station has already been approved as part of the Meridian Business Park Plan in 2003. The EIR for this Specific Plan indicated that Alessandro Boulevard would be preserved and therefore would not be negatively impacted by development of the Moreno Valley/March Field Station option (March JPA, 2003).

*Downtown Perris Station*

The current view of SR-74 from this station would be of a moderately industrialized downtown with various commercial, business, industrial, and residential buildings. The SJBL alignment currently intersects SR-74 as well. No trees or rock outcroppings are located in the area, but the Perris Depot is a significant historic building located in the vicinity of SR-74 and the Downtown Perris Station option.

Though the proposed station may be visible from SR-74, it would be part of an existing transportation center (the Perris Multimodal Transit Facility that is currently under construction) and would fit with the historical uses of the area (i.e., railroad). The City of Perris also plans to revitalize downtown with new walkways, renovated store fronts, and residential land uses surrounding the multimodal facility (City of Perris, 2005). Due to the existing and planned urban view from SR-74, the addition of the Downtown Perris Station would not introduce new visually distracting elements to the area or negatively affect the future designation of SR-74 as a State Scenic Highway.

The historic Perris Depot is a restored train depot converted into a museum and is listed on the National Register of Historic Places (NRHP). It is located adjacent to the SJBL alignment and the proposed Downtown Perris Station and can be viewed from SR-74 (see Cultural section 4.5).

The proposed development of this station would not alter, impair, or diminish the qualities for which the historic depot is valued. The added activity and station components would be similar to and supportive of the historical uses of the Perris Depot. Therefore, proposed development would be consistent with existing conditions and would not introduce a significant visual intrusion that would obstruct or eliminate architectural views of the Perris Depot.

*South Perris Station and Layover Facility*

The South Perris Station and Layover Facility are located within the viewshed of SR-74 and the SJBL alignment. From this proposed location, the view of SR-74 currently includes an airport, wastewater treatment plant, and various industrial structures. No trees, rock outcroppings, or historical buildings are located at or near the proposed development locations.

Proposed development of the station and Layover Facility would introduce storage buildings, parking areas, tracks for parked trains and maintenance, equipment, and landscaped vegetation. These proposed facilities would be of similar height and shape as the existing structures and therefore would not stand out in the landscape. Additionally, the surrounding area has been planned by the City of Perris for business park, residential, and commercial land uses (City of Perris, 2005).

Therefore, the South Perris Station and Layover Facility would be consistent with existing conditions and would not introduce new visually impacting elements around SR-74. Implementation of the proposed project would also not affect the future designation of SR-74 as a State Scenic Highway.

<u>Communication Towers</u>

There are no scenic highways in the vicinity of the East Maintenance Facility, CP Citrus Radio Tower, and CP Eastridge Radio Control Tower. Therefore, no impacts are anticipated at those three locations.

*Palmyrita Station Microwave Tower and CP Marlborough Radio Tower*

The Palmyrita Station Microwave Tower and CP Marlborough Radio Tower are located along Palmyrita Avenue and Marlborough Avenue, respectively, near the SJBL alignment. Views from the two towers include telephone poles and the industrial and commercial structures that line both sides of Palmyrita Avenue and Marlborough Avenue. No trees, rock outcroppings, or historical buildings are located at or near the proposed development locations.

The proposed towers have a thin profile that is similar to the telephone poles. Based upon this and the existing development in the area, the proposed towers would blend in with existing conditions and would not introduce new visually distracting elements that would detract from the views along Palmyrita Avenue and Marlborough Avenue.

*CP Oleander Radio Tower and CP Nuevo Radio Tower*

CP Oleander Radio Tower is approximately 1.7 miles north of the intersection of the Ramona Expressway and I-215, and the CP Nuevo Radio Tower is approximately 3 miles south. Ramona Expressway can be viewed from these towers, in addition to a mixture of agricultural land, light industrial structures, residential properties, and telephone poles. No trees, rock outcroppings, or historical buildings are located at or near the proposed development locations.

The proposed towers have a thin profile that is similar to the telephone poles. Based upon the existing development in the area, these proposed towers would blend in with the visual landscape and would not detract from the scenic view of the Ramona Expressway.

*South Perris Station Communication Shelter and Tower and CP Mapes Radio Tower*

The South Perris Station Communication Shelter and Tower and the CP Mapes Radio Tower may be visible to drivers along SR-74, which is about 3,500 feet northeast of the site. The view of SR-74 from this location includes agricultural fields, a wastewater treatment plant, industrial facilities, and telephone poles. Additionally, the City of Perris has tentative plans for development of the area involving business park, residential, and commercial land uses (City of Perris, 2005). No trees, rock outcroppings, or historical buildings are located at or near the proposed development locations.

Since the proposed facilities at this location would not be significantly distinctive relative to other views from SR-74 in the area, the South Perris Station Communication Tower Facility would blend in with existing conditions and would not introduce new visually distracting elements around SR-74. Additionally, implementation of the proposed project would not affect the future designation of SR-74 as a State Scenic Highway.

***Does the project substantially degrade the existing visual character or quality of the site and its surroundings***

As discussed previously, the proposed tracks, stations, Layover Facility, communication towers, and landscape walls within the PVL corridor would conform to the current land use of the area and blend in with existing development. The proposed development would serve only to upgrade the current railways and construct buildings that are of a similar height to the surrounding structures. Therefore, the visual character and quality of the area within the PVL corridor would not be affected by these proposed developments.

Replacing two bridges along the SJBL alignment is also a component to the proposed PVL project. These existing bridges, which span the San Jacinto River at MP 20.70 and MP 20.80, would be replaced in-kind. Since they would have a similar visual character as the original bridges, the current look and quality of the area within the PVL corridor would not be degraded.

***Does the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area***

Portions of the proposed PVL project would require the addition of lighting that would comply with local laws. The proposed Citrus Connection, bridges, towers, and landscape walls do not require lighting and therefore would not create a new source of substantial light or glare.

Development that occurs south of the MARB is within 45 miles of the Palomar Observatory, which means that Riverside County Ordinance 655 would be taken into account for any proposed development in those areas.

<u>SJBL Alignment</u>

The SJBL alignment runs from Riverside and through the city of Perris to the I-215 interchange south of downtown Perris. I-215, which parallels much of the SJBL corridor, has lights located on the overpasses. Existing development in the downtown areas of Riverside and Perris also emits light.

During construction activities, there is a potential that night work would be necessary, particularly at the grade crossing locations. The reason that grade crossings are a particular concern is because of the safety requirement to have them operating prior to the next train traveling past. If night work is necessary at the grade crossings in a residential area, there is a potential for light spillover and disrupting the local residents. This is a potential significant impact and mitigation is required to reduce the level of impact (Mitigation measure AS-1).

Implementation of the PVL project would include the addition of commuter trains, which would introduce additional sources of light to the areas. Metrolink commuter rail trains are outfitted with light sources at the lower half of the train and are used to illuminate the track for the safety of the train and surrounding areas.

Light source from the trains would be mobile and would not exceed the existing light sources in the area. Therefore, the trains would not result in a substantial increase in light or glare and would not adversely affect day or nighttime views in the area.

<u>Stations</u>

The proposed PVL project would involve the construction of four stations with adequate lighting for station operations, parking lots, and the safety of station patrons. The lights at the stations would remain on during operating hours. After the last train of the day, the station and parking area lights would cycle with half of the lights being on at a time. This is an energy saving measure. The lights at the Layover Facility would remain on throughout the night. If construction activities occur at night, the lights used will be in compliance with county and city ordinances.

*Hunter Park Station options*

The three options for this proposed station would be located in an urban area with significant existing sources of light and glare, such as streetlights along roadways, parking lots and walkways, lighted recreational facilities, and light emitted from non-residential buildings. Additionally, freight trains with lights are currently running on the adjacent SJBL corridor during both day and night as deliveries require.

Lighting and glare at the three Hunter Park Station options would be similar to existing light sources and consistent with the light and glare continuity of the surrounding areas. Therefore, the development of this station would not result in a substantial increase in light or glare and would not adversely affect day or nighttime views in the area.

*Moreno Valley/March Field Station*

This proposed station has already been approved as part of the Meridian Business Park Plan in 2003. The EIR for this plan indicated that the development of the Moreno Valley/March Field Station option is not expected to create substantial light and glare impacts to the surrounding area (March JPA, 2003).

*Downtown Perris Station*

This proposed station would be located in an urbanized area with significant existing sources of light and glare, such as streetlights along roadways, parking lots and walkways, lighted recreational facilities, and light emitted from residential and non-residential buildings. Trains with lights are currently running on the tracks during the day and night time hours.

Additionally, the Downtown Perris Station option is required to comply with Riverside County Ordinance 655 due to the proximity of Palomar Observatory, and the light fixtures used would adhere to the City of Perris Ordinance Number 1051.

The added light and glare as a result of the development of this station would be similar to existing light sources and consistent with the light and glare continuity of the surrounding areas. Therefore, the Downtown Perris Station option would not result in a substantial increase in light or glare and would not adversely affect day or nighttime views in the area.

*South Perris Station and the Layover Facility*

This South Perris Station and Layover Facility would be located in an area comprised of large-lot residential, agricultural, and commercial properties, as well as a wastewater treatment plant and industrial structures. The City of Perris General Plan has also designated the surrounding area for development of community, commercial, and business park facilities (City of Perris, 2005).

The South Perris Station and Layover Facility are required to comply with Riverside County Ordinance 655 due to the proximity of Palomar Observatory. Also, the light fixtures used at the proposed station and Layover Facility would adhere to the City of Perris Ordinance Number 1051. Therefore, the light and glare created as a result of the proposed development would be similar to the lights at the wastewater treatment plant and would be consistent with the light and glare continuity of the surrounding areas. Based upon this, the proposed facilities would not result in a substantial increase in light or glare and would not adversely affect day or nighttime views in the area.

### *4.1.5 Mitigation Measures*

- AS-1: ~~In order t~~To ~~limit~~ minimize light spill over into residential areas during construction, light attenuating barriers or directed lighting ~~will~~ shall be used.

### *4.1.6 Mitigation Summary*

Barriers, whether solid or thick fabric, are effective at light attenuation thus reducing light overflow into nearby homes.

# 4.2 AGRICULTURAL RESOURCES

Agricultural resources are farmlands that can be used for agricultural purposes. This section provides a discussion of the agricultural resources along the PVL corridor, analyzes the potential project impacts, and if appropriate, provides mitigation measures to reduce, avoid, or minimize potential impacts.

## *4.2.1 Environmental Setting*

<u>Regional Setting</u>

The PVL project is located in western Riverside County and extends approximately 24 miles between the cities of Riverside and Perris. Western Riverside County is bounded by the Santa Ana Mountains and Cleveland National Forest on the west and the San Jacinto Mountains and the San Bernardino National Forest on the east. Major features of this area include the Santa Ana River basin, Lake Perris, Lake Elsinore, and the San Jacinto River. Additionally, it should be noted that there are no forests adjacent to the area.

The project area lies within the Perris and Moreno valleys, as well as the Santa Ana River Valley. Compared to eastern Riverside County, the western portion of the County contains the greatest concentration of population and has experienced the greatest growth pressures (Riverside County, 2008).

Approximately 7.3 percent (339,261 acres) of Riverside County (4,627,871 acres) is designated as agricultural use (Riverside County, 2008). The remaining land is made up of a variety of uses including residential, commercial, business, and industrial.

<u>Local Setting</u>

The proposed PVL project is specifically located within the existing SJBL alignment that runs from the city of Riverside to south of the city of Perris. As the area developed, the predominance of agricultural land both in the cities and surrounding areas, was used primarily to grow citrus. This citrus industry was serviced by the existing railroads to ship goods to distant markets. As the local area continued to develop, a growing population in the late twentieth century created pressure to convert this agricultural land to urban/suburban uses. Today, most of the areas in Riverside have transitioned from agricultural to urban and built-up land.

At the northernmost portion of the PVL corridor, the BNSF and SJBL alignments, Citrus Connection, and the Hunter Park Station options are located within the Hunter Business Park area, a 1,300-acre industrial park in the City's northeast corner. Industrial and business facilities currently occupy much of the area (City of Riverside, 2002).

Southeast of Hunter Park Station area, the SJBL alignment extends through urbanized areas and open space and runs adjacent to residential neighborhoods, commercial buildings, and city parks. Continuing south, the SJBL runs along the eastern edge of the Sycamore Canyon Business Park, which includes approximately 920 acres of commercial and industrial land uses (south of the junction of I-215 and SR-60).

The SJBL transitions into unincorporated land within Riverside County and passes through an area of recent warehouse and distribution center development. Further south along the alignment, the SJBL alignment bisects downtown Perris. South of downtown Perris, land use around the SJBL alignment is primarily agricultural with scattered development. Development includes the Perris Airport and the wastewater treatment complex across the street from the end of the corridor.

### *4.2.2 Regulatory Setting*

Federal Policies and Regulations

*Farmland Protection Policy Act*

Congress passed the Farmland Protection Policy Act (FPPA) in 1981 in response to a substantial decrease in the amount of open farmland (7 USC 4201). The purpose of the FPPA is twofold: one, to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses; and two, to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with state, local, and private regulations regarding the protection of farmland (7 USC 4201(b)). FPPA requires that the lead federal agency on a proposed federal project examine the potential effects that the project may have on farmland, before taking or approving any project that would result in conversion of farmland to a non-agricultural use.

According to the FPPA, “farmland” is classified as:

- Prime Farmland: land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary of Agriculture. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage (7 USC 4201(c)(1)(A)).

- Unique Farmland: land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary of Agriculture. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables (7 USC 4201(c)(1)(B)).

- Farmland of Statewide or Local Importance: farmland, other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate State or local government agency or agencies, and that the Secretary of Agriculture determines should be considered as farmland (7 USC 4201(c)(1)(C)).

*Land Evaluation and Site Assessment*

In 1981, the Natural Resources Conservation Service (NRCS), known then as the Soil Conservation Service, released a new system model that was designed to provide objective ratings of the quality of land resources based upon specific measurable features. The system model is called Land Evaluation Site Assessment (LESA).

When employed for federal projects, LESA is used to ensure that the project is in compliance with FPPA by uniformly identifying and evaluating the project's potential impacts on farmland. LESA includes a Farmland Conversion Impact Rating Form (Form AD-1006) that is completed to determine the impacts that could occur by the conversion of farmland to non-agricultural uses. For corridor projects like the PVL project, NRCS developed a separate form, the Conservation Program Application Form (NRCS-CPA-106). Both forms contain two portions: Land Evaluation and Site Assessment.

The Land Evaluation portion is completed by NRCS and includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The Site Assessment portion is completed by the lead federal agency and includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land (NRCS, 2009).

Based on the results from these portions of the LESA, the lead federal agency of a proposed project determines whether the project would create significant impacts on farmland that exceed the recommended allowable level. LESA may also assist in implementing farmland protection policies.

The use of a formulaic dual rating approach is common to the LESA models. However, a more individualized land evaluation and site assessment approach can be adapted from LESA to be used by reigning local and regional governing bodies in order to meet the particular needs and conditions of the area.

<u>State Policies and Regulations</u>

*California Land Conservation Act - Williamson Act*

The California Land Conservation Act of 1965, commonly known as the Williamson Act, provides incentives through reduced property taxes, to deter the early conversion of agricultural and open space lands (California Department of Conservation [CDC], 1965).

Lands defined by the state as "prime farmland," "other than prime farmland," and "open space land" are eligible for coverage by a Williamson Act contract. Land other than prime farmland and open space land can also be placed under contract if the lands are located in an area designated by the county or city as an agricultural preserve.

*California Environmental Quality Act*

CEQA provides for the protection of agricultural resources and requires that potential impacts, which could result from the proposed project, be evaluated (Public Resource Code [PRC] § 21071).

Until 1997, the only specific mention of agricultural issues in CEQA was contained in Appendix G of the CEQA Guidelines, which states that a project would normally have a significant effect on the environment if it would "convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land" (14 CCR 3).

The California Agricultural LESA was established as an amendment to Appendix G to clarify the vague regulations surrounding agricultural resources

*California Agricultural LESA Model*

The CDC commissioned a study in the early 1990s to investigate the implications of the conversion of agricultural land to non-agricultural uses in California (CDC, 1991). Among the findings, the study concluded that a lack of clarity in the CEQA Guidelines on how to address the impacts of farmland conversion often resulted in an insufficient analysis of the significance of the impacts. Developed as a result of Senate Bill 850, the California Agricultural LESA Model was designed to serve as an amendment to Appendix G of the CEQA Guidelines (CDC, 1997).

For projects regulated under CEQA, the California LESA may be used to provide an additional quantitative method for evaluating the environmental significance of agricultural land conversions. It is based on six factors: two Land Evaluation factors and four Site Assessment factors.

The Land Evaluation portion of the California LESA typically includes two factors to assess soil suitability: (1) the Land Capability Classification and (2) the Storie Index. The Land Capability Classification rates the suitability of soils for most kinds of crops, while the Storie Index rates the relative degree of suitability for intensive agriculture (CDC, 1997).

The Site Assessment portion typically involves evaluating the site by using four separate factors: (1) project size; (2) water resource availability; (2) surrounding agricultural lands; and (4) surrounding protected resource lands.

Each of the six factors is rated on a 100 point scale, weighted, and combined to produce a single value for the entire project with a maximum score of 100 points. Determinations of significance under CEQA are based on the scoring thresholds shown in Table 4.2-1.

**Table 4.2-1**
**LESA Model Scoring Thresholds**

| Total LESA Score | Scoring Decision |
|---|---|
| 0 to 39 Points | Not Considered Significant |
| 40 to 59 Points | Considered Significant <u>only</u> if land evaluation <u>and</u> site assessment subscores are each <u>greater</u> than or equal to 20 points |
| 60 to 79 Points | Considered Significant <u>unless</u> either land evaluation <u>or</u> site assessment subscore is <u>less</u> than 20 points |
| 80 to 100 Points | Considered Significant |

*Farmland Mapping and Monitoring Program*

The CDC established the Farmland Mapping and Monitoring Program (FMMP), which is a non-regulatory program, in 1982 to assess the location, quality, and quantity of agricultural lands in California and to provide a uniform and impartial analysis of these lands. The goal of FMMP is to "provide land use conversion information for decision makers to use in their planning for the present and future use of California's agricultural land resources. To meet this goal, FMMP provides maps and statistical data to the public, and local, state, and federal governments on a biennial basis" (CDC, 1998).

The farmland maps created by FMMP identify eight categories of land: (1) Prime Farmland; (2) Unique Farmland; (3) Farmland of Statewide Importance; (4) Farmland of Local Importance; (5) Grazing Land; (6) Urban and Built Up Land; (7) Other Land; and (8) Water (CDC, 1998).

Local Policies and Regulations

*Riverside County General Plan*

The Riverside County General Plan generally emphasizes providing for the expanding agricultural production in the County by identifying and preserving areas of agricultural importance. The main goals are to maintain the viability of the agricultural industry and to preserve the agricultural resources represented by farmland - its productive soils and its secondary role as an open space amenity (Riverside County, 2008). In addition, the intent of these policies is to minimize the conflicts between agricultural and urban/suburban uses.

Riverside County General Plan defines Local Important Farmlands as areas of locally significant economic importance (Riverside County, 2008).

*Riverside County Local Agency Formation Commission*

Policies of the Riverside County Local Agency Formation Commission (LAFCO) detail specific rules and responsibilities for the county government in regards to the development and preservation of agricultural resources.

LAFCO was established to coordinate logical and timely changes in local government boundaries, discourage urban sprawl and encourage orderly and efficient provision of services, such as water, sewer, fire protection, etc. while protecting agricultural lands. Riverside LAFCO is a state-mandated legislative agency and is independent of county government (LAFCO, 2009).

*Riverside County Ordinance 509*

Riverside County Ordinance 509 designated suitable areas within Riverside County as agricultural preserves that are to be devoted to agricultural and compatible uses. These lands are to be administered pursuant to the California Land Conservation Act (Riverside County, 1988).

*City of Riverside General Plan*

The City of Riverside General Plan has a specific objective to "retain functional agricultural areas within Riverside while allowing for sensitive, low-intensity residential uses" (City of Riverside, 2008).

*City of Perris General Plan*

The City of Perris is anticipating development in several areas within the City limits to "generate revenue and create jobs within the City" (City of Perris, 2005). The General Plan states that "urban and rural residential developments offer greater profits due to the present high demand for housing in this region, and because Perris' climate requires extensive irrigation" (City of Perris, 2005).

### *4.2.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Agricultural Resources is defined by:

1. Does the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use

2. Does the project conflict with existing zoning for agricultural use, or a Williamson Act contract

3. Does the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

### *4.2.4 Project Impacts*

***Does the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use***

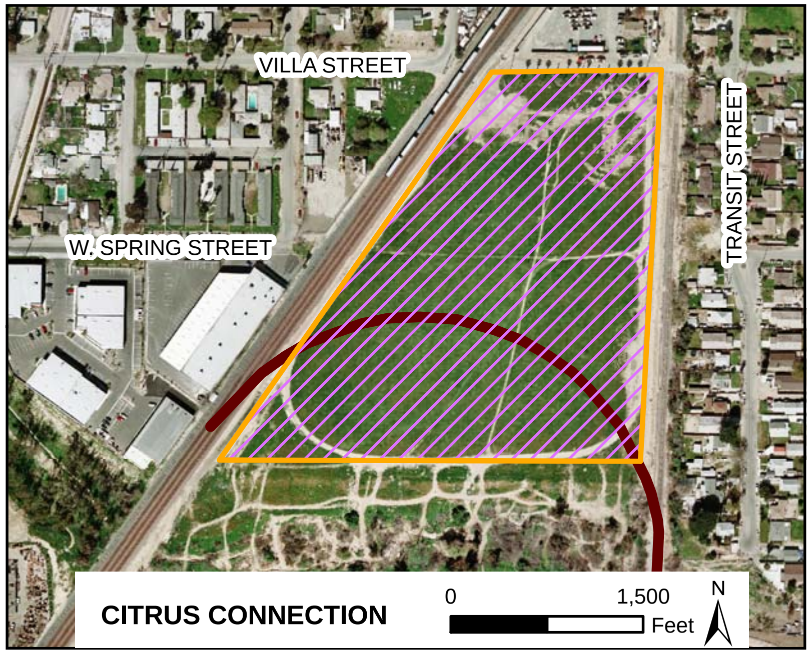
Farmland designations for the portions of the proposed PVL project area are based on maps provided by the Riverside County Land Information System (2008) and the CDC's FMMP (2006). Table 4.2-2 details the portions of land within the PVL project corridor that have been designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Urban and Built Up land:

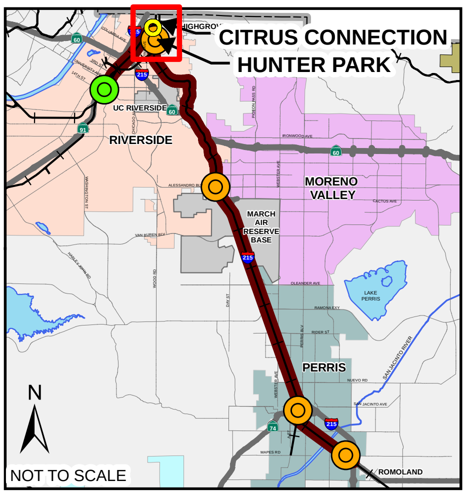
**Table 4.2-2**
**Farmland Designations of the PVL Project Components**

| Project Location | Farmland Designation | Acres |
|---|---|---|
| Citrus Connection | Farmland of Local Importance | 17.23 |
| SJBL alignment (between the eastern extent of the Citrus Connection and the Layover Facility) | Urban and built up | 350.10 |
| Hunter Park Station – Palmyrita Avenue (Option A) | Prime Farmland | 24.80 |
| Hunter Park Station – Columbia Avenue (Option B) | Prime Farmland | 9.26 |
| Hunter Park Station – Marlborough Avenue (Option C) | Prime Farmland and Farmland of Local Importance | 9.38 |
| Moreno Valley/March Field Station | Farmland of Local Importance | 14.50 |
| Downtown Perris Station | Urban and built up | 12.44 |
| South Perris Station and Layover Facility | Farmland of Local Importance | 32.00 |

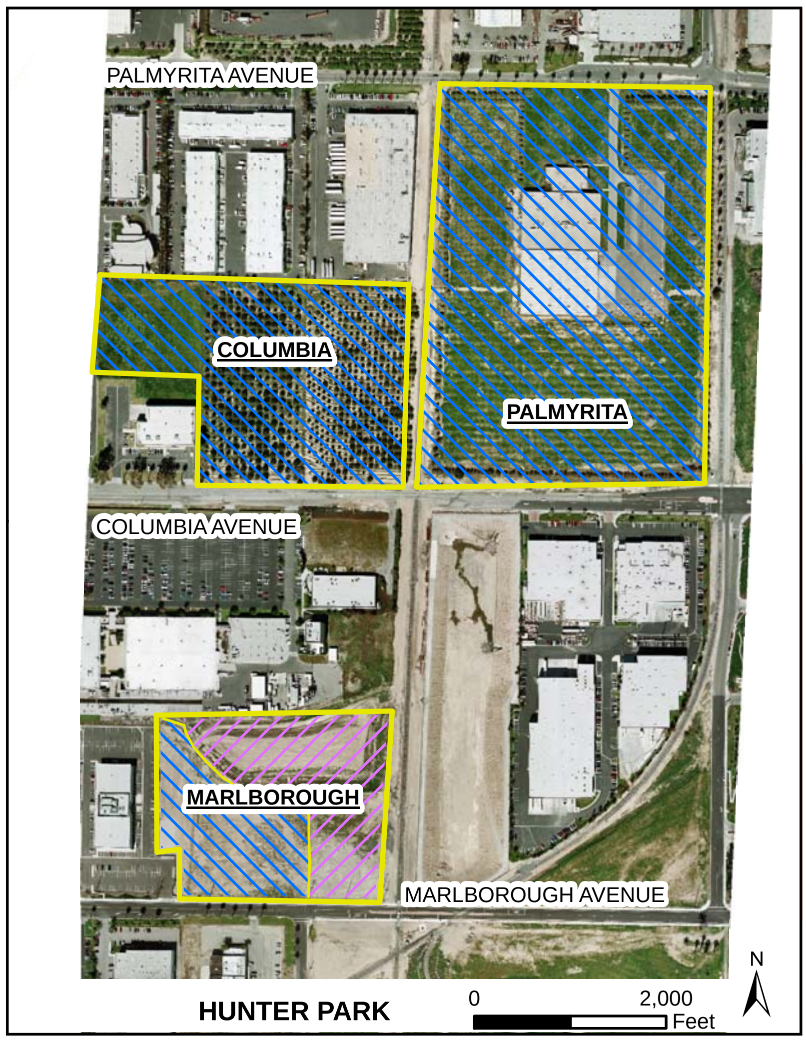
The SJBL alignment and Downtown Perris Station are not subject to the regulations because these portions are not designated as farmland and therefore would not involve conversion of farmland to non-agricultural use. However, the Citrus Connection, three proposed options for the Hunter Park Station, Moreno Valley/March Field Station and South Perris Station Layover Facility are subject to the regulations, as they are located on farmland and do involve a conversion to non-agricultural uses (Figure 4.2-1 and Figure 4.2-2).

Since some areas of farmland at the station sites would be converted to non-agricultural uses, the California LESA Model for a corridor project was completed to evaluate and analyze if significant impacts would occur as a result of implementation of the entire PVL project. The LESA calculations and discussion for the PVL project are included in Appendix D, LESA Model Calculations.




KEY MAP FOR INSET AREAS




## LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- CITRUS CONNECTION BOUNDARY
- PRIME FARMLAND
- FARMLAND OF LOCAL IMPORTANCE

Perris Valley Line | RCTC | KLEINFELDER Bright People. Right Solutions.

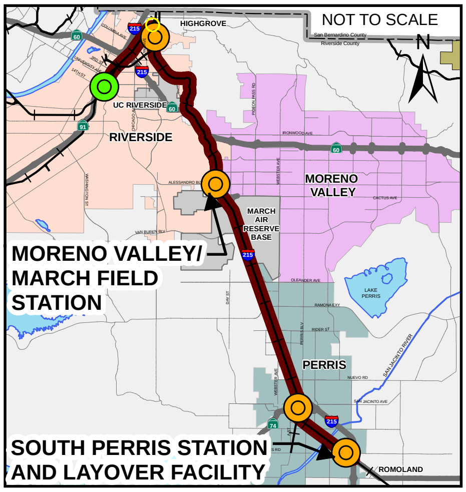
| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/8/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666agresEIR.MXD |

AGRICULTURAL RESOURCES

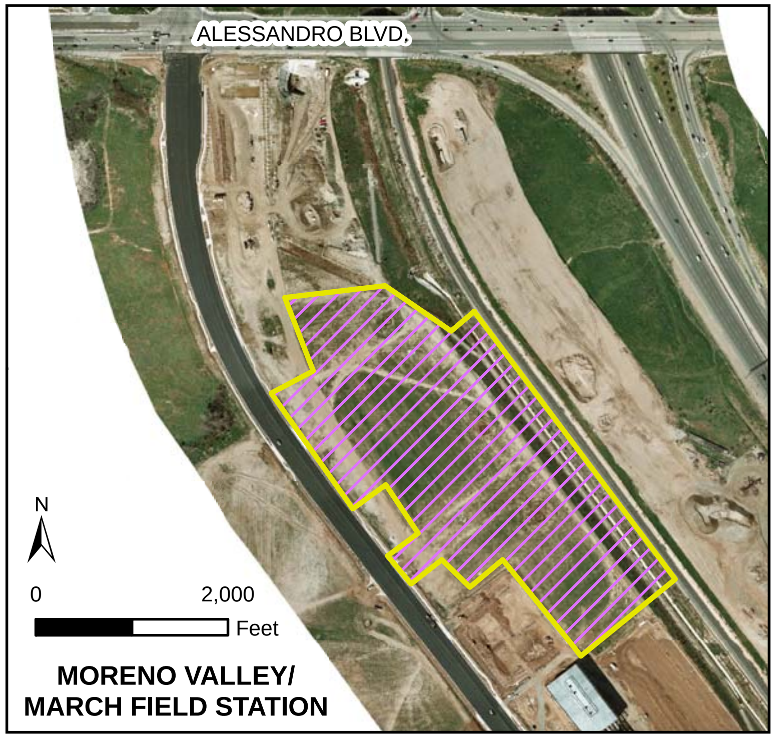
ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

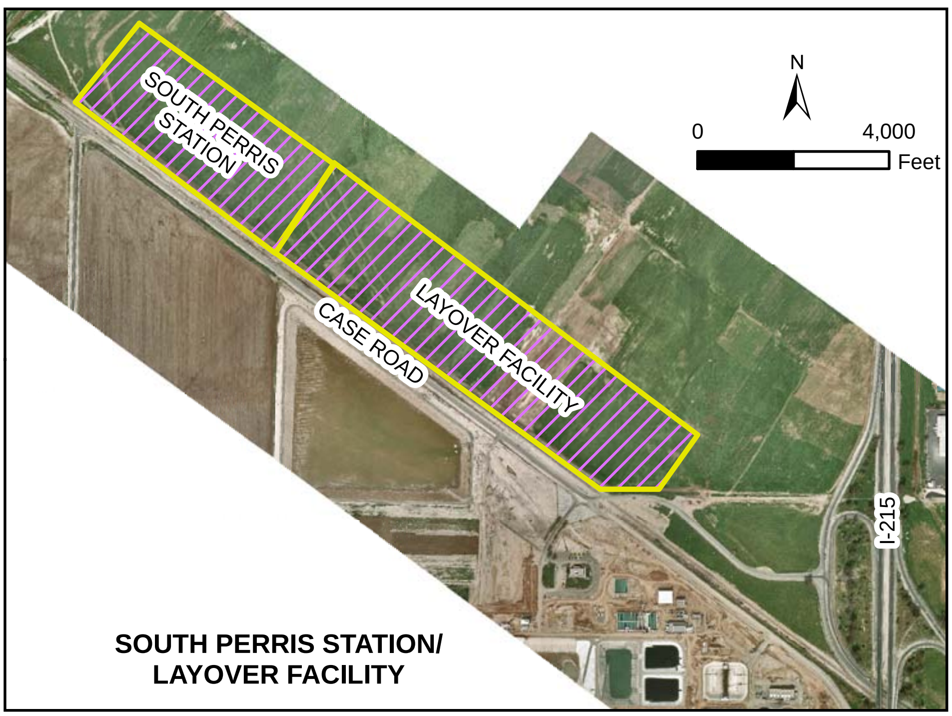
FIGURE

4.2-1




**KEY MAP FOR INSET AREAS**




## LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- FARMLAND OF LOCAL IMPORTANCE

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | AGRICULTURAL RESOURCES | FIGURE |
| DRAWN: | 12/11/09 | | 4.2-2 |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666agres2EIR.MXD | | | |

The LESA score for the PVL project was calculated using the United States Department of Agriculture (USDA) NRCS Web Soil Survey, recent aerial photographs, and GIS. Conservative estimates were used to reflect the most realistic impacts of the project. A separate total score was produced to account for each of the three Hunter Park Station options: Option A (Palmyrita Avenue); Option B (Columbia Avenue); and Option C (Marlborough Avenue). Table 4.2-3 shows the final LESA score for each option:

**Table 4.2-3**
**Final LESA Scoresheet for the PVL project**

| Corridor Option | Total LESA Score |
|---|---|
| Palmyrita (Option A) | 32.87 |
| Columbia (Option B) | 28.48 |
| Marlborough (Option C) | 28.47 |

The total LESA score for each of the three corridor options is less than 39 points, which, according the LESA Model Scoring Thresholds indicates that the conversion of farmland would not be considered a significant impact, regardless of which Hunter Park Station option is selected. Accordingly, the PVL project would have no impact on agricultural resources.

In addition to having no impact on farmlands according to the California LESA, the segments within the proposed PVL project are located on sites that have already been slated for development in the future. The Riverside County General Plan, the City of Riverside General Plan, and the City of Perris General Plan approved changing land use designations along many areas of the PVL corridor. These updated land designations and their impacts on segments within the PVL project are described below.

<u>Citrus Connection</u>

The proposed Citrus Connection is located at the northernmost segment of the PVL, which connects the BNSF and SJBL alignments. Though this land was designated as Farmland of Local Importance, the area is now approved for a warehouse/distribution center (City of Riverside, 2007). Since development of this area will occur regardless of the construction of the proposed Citrus Connection, construction of this segment of the PVL project would not alter the planned land use of the area.

<u>Stations</u>

*Hunter Park Station options*

The three options for the proposed Hunter Park Station would be constructed property within the Hunter Business Park area. Palmyrita Station option is proposed north of Columbia Avenue and east of the SJBL ROW. This location is currently being developed for light industrial use. The Columbia Station option would be located south of Palmyrita Avenue and west of the SJBL ROW. The site currently contains a citrus orchard. The Marlborough Station option would be located north of, and adjacent to Marlborough Avenue, and west of the SJBL ROW. The site is currently undeveloped with quantities of fill dirt located on the site.

Though this land was previously designated as Prime Farmland and Farmland of Local Importance, the three options are located in an area that has been approved for Business/Office Park development and is now designated for light industrial uses, consistent with the General Plan's goals to create an economic/job center (City of Riverside, 2007).

Since the land designation for this area has changed to non-agricultural development, the three options for the proposed Hunter Park Station would not convert Prime Farmland, Unique Farmland, or Farmland of State/Local Importance to non-agricultural uses.

*Moreno Valley/March Field Station*

The proposed Moreno Valley/March Field Station would be located within the boundaries of the former MARB and on an undeveloped 14.8-acre parcel west of the SJBL, about 750 feet south of Alessandro Boulevard. Unincorporated areas of Riverside County that are south of the Moreno Valley/March Field Station option are comprised of warehouses, light industry, and business park development.

The March Field/Moreno Valley Station has already been approved for development as part of the Meridian Business Park Plan, which determined that the site for the proposed station is no longer designated as farmland (March JPA, 2003). Therefore, the proposed PVL project at this location would not convert Prime Farmland, Unique Farmland, or Farmland of State/Local Importance to non-agricultural uses.

*South Perris Station and the Layover Facility*

The site of the South Perris Station and Layover Facility would be constructed adjacent to one another north of the intersection of Mapes and Case Roads, and west of I-215. The site is an undeveloped property east of the Perris Airport and north of the Eastern Municipal Water District (EMWD) sewage treatment facility. The surrounding area consists of agricultural fields and warehouses.

Though this land was designated as Farmland of Local Importance, it is located in an area that is now approved for Public and Community Commercial Land Use designations (City of Perris, 2005). Additionally, the City has approved the Riverglen and Green Valley Specific Plans. These developments would convert the now vacant land to commercial, retail and residential uses (City of Perris, 2005). Therefore, since the land designation for this area has changed to non-agricultural development, the South Perris Station and Layover Facility would not convert Prime Farmland, Unique Farmland, or Farmland of State/Local Importance to non-agricultural uses.

***Does the project conflict with existing zoning for agricultural use, or a Williamson Act contract***

There are no components of the PVL project, including the Citrus Connection, the proposed station locations, and the Layover Facility, that are located on lands enrolled in Williamson Act contracts. Therefore, there are no impacts within this issue area.

***Does the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?***

As stated previously there are no components of the PVL project that would convert existing designated Farmland to non-agricultural use. Additionally, there are no impacts to forest land resulting from the project. Therefore, there would be no project impact in this issue area.

### *4.2.5 Mitigation Measures*

Based on the very conservative evaluation of farmland conversion impacts, the proposed PVL project will not have a significant impact on agricultural resources. No mitigation measures are required.

## 4.3 AIR QUALITY

This section of the EIR describes the air quality of the Riverside/Perris area and the potential effect that implementation of the PVL may have on the air quality within the South Coast Air Basin (SCAB). Air quality impacts related to construction, operation of the project, and traffic associated with riders driving to and from stations for the PVL project are analyzed in this section. This analysis is based on the Air Quality Technical Report (STV Incorporated, 2011) to this EIR as presented in Technical Report B~~, Air Quality~~.

### *4.3.1 Environmental Setting*

The project area is located in western Riverside County, within the SCAB, which includes Orange County, and the non-desert portions of Los Angeles, Riverside and San Bernardino Counties. Air quality regulation in the SCAB is administered by the South Coast Air Quality Management District (SCAQMD), a regional agency created for the Basin.

The climate in the SCAB is determined by terrain and geographical location. The SCAB is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern boundary, and mountains surround the remainder of the SCAB. The region lies in the semi-permanent high-pressure of the eastern Pacific. The resulting climate is mild and tempered by cool ocean breezes. This climate pattern is rarely interrupted except by periods of hot weather, winter storms, and the Santa Ana wind conditions.

The air basin's climate and topography are highly conducive to the formation and transport of air pollution. Peak ozone ($O_3$) concentrations in the last two decades have occurred at the base of the mountains around Azusa and Glendora in Los Angeles County, and at Crestline in the mountain area above the city of San Bernardino. Both peak $O_3$ concentrations and the number of exceedances have decreased everywhere in the SCAQMD throughout the 1990s. In addition, carbon monoxide (CO) concentrations have lessened throughout the SCAB during the past decade as a result of strict new emission controls and reformulated gasoline sold in winter months.

Although Riverside County generates the lowest emissions of any county in the SCAB, air quality in the county is among the SCAB's worst, due to onshore winds that transport pollutants from Los Angeles and Orange counties inland. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction, traveling towards the sea. Local canyons alter wind direction, with wind tending to flow parallel to the canyons. During the transition period from onshore to offshore pattern, the dominant wind direction rotates into the south and causes a minor southerly wind direction. The frequency of calm winds (less than two mph) is less than ten percent. Therefore, little stagnation occurs in the project vicinity, especially during busy daytime traffic hours.

Southern California frequently has temperature inversions that inhibit the dispersion of pollutants. Inversions may be either ground-based or elevated. Ground-based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions act as a lid, or upper boundary, and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. The mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the SCAB and is responsible for the high levels of $O_3$ observed during summer months in the air basin.

*Local Climate and Meteorological Conditions*

Latitude, topography, and the influence of the nearby Pacific Ocean produce a Mediterranean climate in the project area, consisting of warm, dry summers and mild, wet winters. However, at a local level, the project area exhibits substantial climatic variation. Average January high temperatures range from 66 ºF in the northwestern project area near Riverside to 63 ºF near Perris in the southeastern project area. Nighttime lows in January and February can drop below freezing throughout the project area. Average July high temperatures range from 94 ºF in the northwestern project area near Riverside to 97 ºF near Perris in the southeastern project area. The portions of the study area with lower altitudes (i.e. closer to sea level) have long mid-summer stretches of daily highs exceeding 110 ºF. Average annual precipitation ranges from about ten inches in the Riverside and Moreno Valley areas to eleven inches in Perris Valley. Annual rainfall in the project area typically ranges from ten to 15 inches per year. Annual average wind speed in Riverside is six mph.

*Existing Local Air Quality*

The SCAQMD monitors air quality conditions at 37 source receptor areas throughout the SCAB. The project area extends from the city of Riverside to the city of Perris. The closest air basin monitoring stations for this area are located in Rubidoux at 5888 Mission Boulevard, in Riverside at 7002 Magnolia Avenue, and in Perris at 237½ North D Street. The Rubidoux monitoring station measures ambient levels of $O_3$, particulates, CO, $NO_2$, and $SO_2$. The Riverside monitoring station measures $PM_{2.5}$ and CO ambient levels. The Perris monitoring station measures $O_3$ and $PM_{10}$ ambient levels. Data from the three monitoring stations, including two located in receptor areas along the study corridor at Riverside and Perris, were used to characterize existing conditions in the vicinity of the proposed project, and establish a baseline for estimating future conditions both with and without the proposed project.

If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that pollutant. If a pollutant exceeds a state or federal standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified. The California Air Resources Board (CARB) has designated the SCAB as nonattainment for $O_3$, $PM_{2.5}$ and $PM_{10}$; and the USEPA has designated the SCAB as nonattainment for $O_3$ (Severe-17 classification for the 8-hour standard); CO (Serious classification), $PM_{10}$ (Serious classification) and $PM_{2.5}$ (refer to Table 4.3-1).

**Table 4.3-1**
**Regional Criteria Pollutants Attainment Status 2009**

| Pollutant | Status | |
|---|---|---|
| | **Federal** | **State** |
| $O_3$ | 1-hour: N/A<br>8-hour: Severe-17 Nonattainment | 1-hour: Nonattainment<br>Not yet rated for 8-hour standard |
| CO | Attainment | Attainment |
| $NO_2$ | Attainment/Maintenance | Attainment |
| $SO_2$ | Attainment | Attainment |
| Particulates ($PM_{10}$) | Serious Nonattainment | Nonattainment |
| Fine Particulates ($PM_{2.5}$) | Nonattainment | Nonattainment |
| Pb | No Designation | Attainment |
| Source: Federal Register and CARB (2009) | | |

Table 4.3-2 summarizes the local levels of these four pollutants for 2006, 2007 and 2008 and compares them to national and state air quality standards. The Rubidoux monitoring station shows exceedances of the Federal and state standards for $O_3$, $PM_{2.5}$ and $PM_{10}$. At the Riverside monitoring station, the federal standard for $PM_{2.5}$ was exceeded. The Perris Valley monitoring station has exceeded the state standard for $PM_{10}$, and the federal and state standards for $O_3$.

**Table 4.3-2**
**2006-2008 Air Quality Summary for Project Area Monitoring System**

| Air-Pollutant | Standard Exceedance | Rubidoux | | | Riverside | | | Perris Valley | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2007 | 2008 | 2006 | 2007 | 2008 | 2006 | 2007 | 2008 |
| Ozone ($O_3$) | Maximum 1-hr. concentration (ppm) | **0.151** | **0.131** | **0.146** | Not Monitored | | | **0.169** | **0.138** | **0.142** |
| | Maximum 8-hr. concentration (ppm) | **0.117** | **0.111** | **0.116** | | | | **0.123** | **0.117** | **0.115** |
| | Days >0.09 ppm (State 1-hr. standard) | 45 | 31 | 54 | | | | 77 | 66 | 65 |
| | Days >0.12 ppm (Federal 1-hr. standard)[1] | 8 | 2 | 8 | | | | 12 | 4 | 4 |
| | Days > 0.075 ppm (Federal 8-hr. standard) | 57 | 46 | 64 | | | | 83 | 73 | 77 |
| | Days > 0.070 ppm (State 8-hr standard) | 75 | 69 | 89 | | | | 98 | 88 | 94 |
| Respirable Particulate Matter ($PM_{10}$) | Maximum State 24-hr concentration (µg/m$^3$) | **106** | **540** | **70** | Not Monitored | | | **119** | **1155** | **87** |
| | Maximum Federal 24-hr concentration(µg/m$^3$) | **109** | **559** | **82** | | | | **125** | **1212** | **85** |
| | Days >50 µg/m$^3$ (State 24-hr. standard) | 69 | 65 | 7 | | | | 18 | 25 | 8 |
| | Days >150 µg/m$^3$ (Federal 24-hr. standard) | 0 | 1 | 0 | | | | 0 | 2 | 0 |
| | Calculated >20 µg/m$^3$ (State annual standard) | 52.7 | 57.0 | 44.8 | | | | N/A | N/A | N/A |
| | Calculated 3-year average ≤ 20 µg/m$^3$ (State annual standard) | 53 | 57 | 57 | | | | 37 | 37 | N/A |
| Fine Particulate Matter ($PM_{2.5}$) | Maximum 24-hr. concentration (ug/m$^3$) | **68.4** | **75.6** | **53.3** | **55.3** | **68.5** | **42.9** | Not Monitored | | |
| | Days >65 µg/m$^3$ (Federal 24-hr. primary std.)[1] | 32 | 33 | 7 | 9 | 8 | 2 | | | |
| | Calculated >15 µg/m$^3$ (Federal annual std.) | 20.7 | 19.6 | 18.1 | 18.6 | 17.7 | N/A | | | |
| | Calculated 3-year average ≤ 15 µg/m$^3$ (Federal annual standard) | 19 | 19 | 16.4 | 16.9 | 18.3 | N/A | | | |
| Carbon Monoxide (CO) | Maximum 8-hr. concentration (ppm) | 2.29 | 2.93 | 1.86 | 2.38 | 2.16 | 1.93 | Not Monitored | | |
| | Day > 9 ppm (State/Federal 8-hr. standard) | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Nitrogen Dioxide ($NO_2$) | Maximum 1-hr. concentration (ppm) | 0.076 | 0.072 | 0.092 | Not Monitored | | | Not Monitored | | |
| | Days >0.25 ppm (State 1-hr. standard)[2] | 0 | 0 | 0 | | | | | | |
| | Calculated >0.0534 ppm (Federal annual std) | 0.020 | 0.020 | 0.019 | | | | | | |
| Sulfur Dioxide ($SO_2$) | Maximum 24-hr. concentration (ppm) | 0.003 | 0.004 | 0.003 | Not Monitored | | | Not Monitored | | |
| | Days >0.04 ppm (State 24-hr. standard) | 0 | 0 | 0 | | | | | | |
| | Days >0.14 ppm (Federal 24-hr. standard) | 0 | 0 | 0 | | | | | | |
| | >0.03 ppm (Federal annual primary standard) | 0.003 | 0.001 | 0.002 | | | | | | |

N/A = data not available ppm = parts per million µg/m$^3$ = micrograms per cubic meter **bold = exceedance of state or federal standard**
Source: SCAQMD Air Quality Data 2006-2008 California Air Quality Data Summaries 2006-2008, CARB (2009)
1. National 1-hour ozone standard revoked in all areas as of April 15, 2009
2. California measures its 24-hour PM10 standard using different methods than USEPA therefore 2 different concentrations are reported

Riverside County emissions inventories are presented in Table 4-3.3. These data are collected by CARB for the South Coast Air Basin.

**Table 4.3-3**
**2008 Emission Inventory for Riverside County - South Coast Air Basin (Tons per Day)**

| **Stationary Sources** | **TOG** | **ROG** | **CO** | **$NO_X$** | **$SO_X$** | **PM** | **$PM_{10}$** | **$PM_{2.5}$** |
|---|---|---|---|---|---|---|---|---|
| Fuel Combustion | 2.2 | 0.3 | 1.8 | 3.5 | 0.4 | 0.2 | 0.2 | 0.2 |
| Waste Disposal | 3.4 | 1.2 | 0 | 0.1 | 0 | 0.4 | 0.2 | 0 |
| Cleaning And Surface Coatings | 4.3 | 3.8 | 0 | 0 | 0 | 0.2 | 0.2 | 0.1 |
| Petroleum Production And Marketing | 2.4 | 2.3 | - | - | 0 | - | - | - |
| Industrial Processes | 2.5 | 2.3 | 0 | 0.1 | 0 | 4.5 | 2.6 | 1 |
| *** Total Stationary Sources** | **14.8** | **10** | **1.9** | **3.7** | **0.4** | **5.2** | **3.1** | **1.4** |
| **Areawide Sources** | **TOG** | **ROG** | **CO** | **NOX** | **SOX** | **PM** | **PM10** | **PM2.5** |
| Solvent Evaporation | 14.4 | 12.6 | - | - | - | 0 | 0 | 0 |
| Miscellaneous Processes | 40.7 | 4 | 10.8 | 2.2 | 0.1 | 77.8 | 38.6 | 7.2 |
| *** Total Areawide Sources** | **55.1** | **16.7** | **10.8** | **2.2** | **0.1** | **77.8** | **38.6** | **7.2** |
| **Mobile Sources** | **TOG** | **ROG** | **CO** | **NOX** | **SOX** | **PM** | **PM10** | **PM2.5** |
| On-Road Motor Vehicles | 25.9 | 23.4 | 264.5 | 57.4 | 0.3 | 3.2 | 3.2 | 2.3 |
| Other Mobile Sources | 14.4 | 13.3 | 70.2 | 22.7 | 0.1 | 1.5 | 1.5 | 1.3 |
| *** Total Mobile Sources** | **40.3** | **36.7** | **334.6** | **80.1** | **0.3** | **4.8** | **4.7** | **3.7** |
| **Natural (Non-Anthropogenic) Sources** | **TOG** | **ROG** | **CO** | **NOX** | **SOX** | **PM** | **PM10** | **PM2.5** |
| Natural Sources | 27.8 | 24.1 | 37.7 | 1.1 | 0.3 | 4 | 3.8 | 3.2 |
| *** Total Natural (Non-Anthropogenic) Sources** | **27.8** | **24.1** | **37.7** | **1.1** | **0.3** | **4** | **3.8** | **3.2** |
| **Total Riverside County In South Coast Air Basin** | **138** | **87.4** | **385** | **87.2** | **1.2** | **91.8** | **50.3** | **15.4** |

Greenhouse Gases

According to the CEQA Guidelines §15002(a)(1), one of the basic purposes of CEQA is to, "inform governmental decision makers and the public about the potential significant environmental effects of proposed actions." Although CEQA is adopting statutes and guidelines to determine an approach to analyzing the effects of global warming, the view of the State Legislature (as expressed in its adoption of Assembly Bill (AB)32, The California Climate Solutions Act of 2006) that global warming poses significant adverse effects to the environment of the State of California and the entire world. In addition, the global scientific community has expressed very high confidence (i.e., at least 90 percent) that global warming is anthropogenic (i.e. caused by humans), and that global warming will lead to adverse climate change effects around the globe (IPCC 2007).

Atmospheric greenhouse gases (GHGs) and clouds with the earth's atmosphere influence the earth's temperature by absorbing most of the infrared radiation rising from the earth's sun-warmed surface that would otherwise escape into space. The process is commonly known as Greenhouse Effect. GHGs and clouds, in turn, radiate some heat back to the earth's surface and some out to space. The resulting balance between incoming solar radiation and outgoing radiation from both the earth's surface and atmosphere keeps the planet habitable.

However, anthropogenic emissions of GHGs into the atmosphere enhance the Greenhouse Effect by absorbing the radiation from other atmospheric GHGs that would otherwise escape to space, thereby trapping more radiation in the atmosphere and causing temperature to increase. The human produced GHGs responsible for increasing the Greenhouse Effect and their relative contribution to global warming include; carbon dioxide ($CO_2$) (53 percent), methane ($CH_4$) (17 percent), near-surface ozone ($O_3$) (13 percent), nitrous oxide ($N_2O$) (12 percent), and chlorofluorocarbons (CFCs) (5 percent). The most common GHG is $CO_2$, which constitutes approximately 84 percent of all GHG emissions in California. Worldwide, the State of California ranks between the 12th to 16th largest emitter of $CO_2$ (the most prevalent GHG) and is responsible for approximately 2 percent of the world's $CO_2$ emissions (CEC, 2006).

The increasing emissions of GHGs, primarily associated with the burning of fossil fuels (during transport, electricity generation, industry, manufacturing, etc.), deforestation, agricultural activity and solid waste, have led to a trend of unnatural warming of the earth's temperature, which is causing changes in the earth's climate. This increasing temperature phenomenon is known as global warming and the climatic effect is known as climate change or global climate change. The State legislature adopted the public policy position that global warming is, "a serious threat to the economic well being, public health, natural resources, and the environment of California" (Health and Safety Code Section 38501). Further, the State Legislature has determined that "potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and quantity of water to the State from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health related problems", and that global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing and forestry [and]….will also increase in the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state" (Health and Safety Code Section 38501). These public policy statements became law with the enactment of AB32, Statutes of 2006.

### *4.3.2 Regulatory Setting*

In response to longstanding concerns about air pollution, federal, state and local authorities have adopted various rules and regulations requiring evaluation of the impact on air quality on a planned project and appropriate mitigation of air pollution emissions. The following sections focus on current air quality planning efforts, and the responsibilities of agencies involved in these efforts. A number of plans and policies have been adopted which address air quality concerns. The plans and policies relevant to the proposed project are discussed below.

<u>Federal Policies and Regulations</u>

The federal Clean Air Act (CAA), enacted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The CAA directs the USEPA to establish ambient air standards for six pollutants: $O_3$, carbon monoxide (CO), lead (Pb), nitrogen dioxide ($NO_2$), particulate matter ($PM_{2.5}$ and $PM_{10}$), and sulfur dioxide ($SO_2$). The standards are divided into primary and secondary standards; the former are set to protect human health and the latter to protect environmental values, such as plant and animal life.

The CAA requires states to submit a State Implementation Plan (SIP) for areas designated as nonattainment for federal air quality standards. The SIP, which is reviewed and approved by USEPA, must demonstrate how the federal standards would be achieved. Failure to submit a plan or secure approval could lead to denial of federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, the USEPA must prepare a federal implementation plan.

<u>Transportation Conformity</u>

The concept of transportation conformity was introduced in the 1977 amendments to the CAA, which includes a provision to ensure that transportation investments conform to the SIP in meeting the National Ambient Air Quality Standards (NAAQS). Conformity requirements were made substantially more rigorous in the federal CAA amendments of 1990, and the transportation conformity regulation that details implementation of the conformity requirements was first issued in November 1993, with a number of subsequent amendments. The most recent complete set of amendments to the Transportation Conformity Rule is found at 40 Code of Federal Regulations (CFR) parts 51 and 93 (August 15, 1997). Additionally, on July 1, 2004, USEPA published a set of the Transportation Conformity Rule Amendments, amending the August 1997 regulations, in Federal Register (FR) Volume 69 No. 26. The new amendments provide regulations for the new 8-hour $O_3$ and $PM_{2.5}$ NAAQS. More recently, a March 2006 ruling establishes revised criteria for determining which transportation projects must be analyzed for local particle emissions impacts in $PM_{2.5}$ and $PM_{10}$ nonattainment and maintenance areas.

Based on projects included in the Regional Transportation Plan (RTP), transportation-related air quality analyses are conducted to determine whether the implementation of those projects would conform to SIP emission budgets or other tests showing that attainment requirements of the CAA are met. If the conformity analysis is successful, the regional planning organization and the appropriate Federal agencies make a determination that the RTP is in conformity with the SIP for achieving the goals of the CAA. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of a proposed project is the same as described in the RTP, then that project is deemed to meet regional conformity requirements for purposes of project-level analysis. The General Conformity Rule may also require localized (hot spot) analyses if an area is nonattainment or maintenance for carbon monoxide and/or particulate matter.

State Policies and Regulations

Responsibility for achieving California Ambient Air Quality Standards (CAAQS), which are more stringent than federal standards, is placed on the CARB and local air pollution control districts. State standards are to be achieved through district-level air quality management plans that are incorporated into the SIP. The California CAA requires local and regional air pollution control districts that are not attaining one or more of the CAAQS, to expeditiously adopt plans specifically designed to attain these standards. Each plan must be designed to achieve an annual five percent reduction in district-wide emissions of each nonattainment pollutant or its precursors.

Recently enacted amendments to the California CAA impose additional requirements designed to ensure an improvement in air quality within the next five years. More specifically, local districts with moderate air pollution that did not achieve “transitional nonattainment” status by December 31, 1997, must implement the more stringent measures applicable to districts with serious air pollution.

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the State of California and the federal government have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). Table 4.3-4 shows the 2009 state and federal standards for relevant air pollutants.

**Table 4.3-4**
**Ambient Air Quality Standards 2009**

| Pollutant | Averaging Time | State[1] | National[2] | |
|---|---|---|---|---|
| | | Concentration[3] | Primary[3,4] | Secondary[3,5] |
| Ozone ($O_3$) | 1 hour | 0.09 ppm | -- | Same as Primary Standard |
| | 8 hours | 0.070 ppm | 0.075 ppm | |
| Particulate Matter ($PM_{10}$) | 24 hours | 50 µg/m$^3$ | 150 µg/m$^3$ | Same as Primary Standard |
| | AAM | 20 µg/m$^3$ | -- | |
| Fine Particulate Matter ($PM_{2.5}$) | 24 hours | -- | 35 µg/m$^3$ | Same as Primary Standard |
| | AAM | 12 µg/m$^3$ | 15 µg/m$^3$ | |
| Carbon Monoxide (CO) | 8 hours | 9.0 ppm | 9 ppm | None |
| | 1 hour | 20 ppm | 35 ppm | |
| Nitrogen Dioxide ($NO_2$) | AAM | 0.030 ppm | 0.053 ppm | Same as Primary Standard |
| | 1 hour | 0.18 ppm | -- | |
| Lead (Pb)[6] | 30 days | 1.5 µg/m$^3$ | -- | -- |
| | Calendar Quarter | -- | 1.5 µg/m$^3$ | Same as Primary Standard |
| | Rolling 3-month Average[7] | -- | 0.15 µg/m$^3$ | |
| Sulfur Dioxide ($SO_2$) | AAM | -- | 0.030 ppm | -- |
| | 24 hours | 0.04 ppm | 0.14 ppm | -- |
| | 3 hours | -- | -- | 0.5 ppm |
| | 1 hour | 0.25 ppm | -- | -- |
| Visibility-Reducing Particles | 8 hours | Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. | N/A | N/A |
| Sulfates ($SO_4$) | 24 hours | 25 µg/m$^3$ | N/A | N/A |
| Hydrogen Sulfide ($H_2S$) | 1 hour | 0.03 ppm | N/A | N/A |

**Table 4.3-4 (cont'd)**
**Ambient Air Quality Standards 2009**

| |
|---|
| Notes:<br>1. California standards for $O_3$, CO (except Lake Tahoe), $SO_2$ (1 and 24 hour), $NO_2$, suspended $PM_{10}$ and $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards (CAAQS) are listed in the Table of Standards in §70200 of Title 17 of the California Code of Regulations (CCR).<br>2. National standards (other than $O_3$, $PM_{10}$, $PM_{2.5}$, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The $O_3$ standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For $PM_{10}$, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current federal policies.<br>3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.<br>4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.<br>5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.<br>6. The CARB has identified Pb and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.<br>N/A = standard is not applicable<br>ppm = parts per million by volume<br>AAM = annual arithmetic mean<br>µg/m3 = micrograms per cubic meter<br>torr = unit of pressure equivalent to 1/760 of a standard atmosphere |
| Source: Ambient Air Quality Standards, CARB, February 22, 2009 |

*Regional Transportation Improvement Program*

The Southern California Area Governments (SCAG), as the Metropolitan Planning Organization (MPO) for southern California, is mandated to comply with federal and state transportation and air quality regulations. SCAG is a six-county region (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) that contains four air basins that are administered by five air districts.

Potential emissions from projects included in a Regional Transportation Improvement Plan (RTIP) meet the transportation conformity requirements outlined in that RTIP. This means that the emissions from projects included in the RTIP have been accounted for in the regional emissions burden. The proposed PVL project is included in SCAG's 2008 RTIP (Project ID RIV520109), as shown in Air Quality Technical Report B, Appendix A, which means the project's operational emissions (including the $O_3$ precursor emissions reactive organic compounds [ROC] and $NO_2$) meet the transportation conformity requirements imposed by USEPA and SCAQMD. As such, a project under these circumstances would normally undergo a project-level rather than a regional-level air quality analysis. However, a regional assessment was also conservatively performed for the proposed PVL rail project. SCAG determined that the PVL is not a Project of Air Quality Concern on April 16, 2010, http://www.scag.ca.gov/tcwg/projectlist/march10.htm. A copy of the TCWG review form is shown in Air Quality Technical Report B, Appendix F.

*Local and Regional Requirements*

The air quality management agencies of direct importance to the SCAQMD portion of Riverside County include USEPA, CARB, and the SCAQMD. USEPA has established federal ambient air quality standards for which CARB and the SCAQMD have primary implementation responsibility. CARB and the SCAQMD are also responsible for ensuring that state ambient air quality standards are met. SCAG develops the Regional Transportation Program (RTP) and RTIP in consultation with local air management districts. The RTP includes projects that strive to meet the goals and objectives of the NAAQS. The RTP is also in accord with USEPA's Transportation Conformity Rule as it pertains to air quality standards in Riverside County.

South Coast Air Quality Management District CEQA Guidelines

SCAQMD has published guidance on conducting air quality analyses under CEQA by establishing thresholds of significance for regional impacts, which are summarized in Table 4.3-5. Thresholds are shown for criteria pollutant emissions during construction activities and project operation. A project is considered to have a regional air quality impact if emissions from its construction and/or operational activities exceed these thresholds.

**Table 4.3-5**
**SCAQMD Air Quality Significance Thresholds**

| Pollutant | Construction | Operation |
|---|---|---|
| $NO_x$ | 100 lbs/day | 55 lbs/day |
| VOC | 75 lbs/day | 55 lbs/day |
| $PM_{10}$ | 150 lbs/day | 150 lbs/day |
| $PM_{2.5}$ | 55 lbs/day | 55 lbs/day |
| $SO_x$ | 150 lbs/day | 150 lbs/day |
| CO | 550 lbs/day | 550 lbs/day |
| Lead | 3 lbs/day | 3 lbs/day |
| Source: SCAQMD CEQA Handbook (SCAQMD, 1993) | | |

*Mobile Source Air Toxic Regulation*

The CAA identified 188 pollutants as being air toxics, which are also known as hazardous air pollutants (HAP). From this list, the USEPA identified a group of 21 as mobile source air toxics (MSAT) in its final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17235) in March 2001. From this list of 21 MSATs, the USEPA has identified six MSATs, benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene, as being priority MSATs. To address emissions of MSATs, the USEPA has issued a number of regulations that would decrease MSATs through cleaner fuels and cleaner engines.

In the early 1980s, the CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Air toxics analysis is a new and emerging issue and is a continuing area of research. Although much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques available for assessing project-specific health impacts from MSATs continue to be developed. Shown in Table 4.3-6 are the SCAQMD thresholds for the assessment of Toxic Air Contaminants (TAC). The Federal Highway Administration (FHWA) is currently preparing guidance as to how mobile source health risks should factor into project-level decision making. In addition, USEPA has not established regulatory concentration targets for the six relevant MSAT pollutants appropriate for use in the project development process.

**Table 4.3-6**
**Toxic Air Contaminant (TAC)Threshold**

| TAC | Threshold |
|---|---|
| TACs (including carcinogens and non-carcinogens) | Maximum Incremental Cancer Risk ≥ 10 in 1 million<br>Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment) |
| Source: SCAQMD CEQA Handbook (SCAQMD, 1993) | |

*Greenhouse Gas Regulations*

While climate change has been an international concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill (AB) 1493, California launched an innovative and pro-active approach to deal with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions.

On June 1, 2005, Governor Schwarzenegger signed Executive Order (EO) S-3-05. The goal of this EO is to reduce California's GHG emissions to 1) 2000 levels by 2010, 2) to 1990 levels by 2020 and 3) 80 percent below 1990 levels by 2050. The majority of GHG emissions are from the burning of fossil fuels, and 40 percent of all human-made GHG emissions are the result of transportation. Enhancing operations and improving travel times in high congestion travel corridors, such as I-215, would lead to an overall reduction in GHG emissions.

In 2006, the goal of Executive Order S-03-05 was further reinforced with the passage of AB 32 the Global Warming Solutions Act of 2006. AB 32 sets overall GHG emissions reduction goals and mandates that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

### *4.3.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Air Quality is defined by:

1. *Does the project conflict with or obstruct implementation of the applicable air quality plan*

2. *Does the project violate any air quality standard or contribute substantially to an existing or projected air quality violation*

3. *Does the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)*

4. *Does the project expose sensitive receptors to substantial pollutant concentrations*

5. *Does the project create objectionable odors affecting a substantial number of people*

*4.3.4 Project Impacts*

***Does the project conflict with or obstruct implementation of the applicable air quality plan***

The proposed PVL commuter rail project is included in SCAG's 2008 RTIP (Project ID RIV520109), (see Air Quality Technical Report B, Appendix A) which indicates that the project's operational emissions meet the transportation conformity requirements imposed by USEPA and SCAQMD.

The project does not conflict with or obstruct the implementation of any local or statewide air quality plan.

***Does the project violate any air quality standard or contribute substantially to an existing or projected air quality violation***

The project does not violate any existing air quality standard or contribute substantially to an existing or projected air quality violation.

The fundamental approach to evaluating project-related air quality is to determine documented air quality conditions for the study area and assess the anticipated air quality impacts associated with the proposed project. The evaluation approach assesses the net increases and decreases in operational and construction air emissions between the No Project Alternative and the proposed PVL project for the opening year of 2012. The No Project Alternative includes air quality impacts of proposed I-215 highway improvements, as defined in the *Final Environmental Impact Statement: I-215 Improvements* (California Department of Transportation, 2001).

The air quality analysis was prepared to conform to FTA, CARB, SCAQMD, and SCAG criteria. Investigation methods, modeling protocols, and conformity issues relating to air quality were developed, discussed, and reviewed with the responsible agencies.

*Carbon Monoxide Modeling Protocol—Screening Procedure*

The California Department of Transportation, in coordination with the University of California, Davis, Institute of Transportation Studies, has developed the Transportation Project-Level Carbon Monoxide Protocol (California Department of Transportation, Garza et al., 1997). This CO Protocol details a qualitative step-by-step screening procedure to determine whether project-related CO concentrations have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS for CO. If the screening procedure reveals that such a potential may exist, then the CO Protocol details a quantitative method to ascertain project-related CO impacts. FTA has no separate guidance for assessing CO impacts. Based on this protocol, a potential for air quality impacts was determined to exist and further analysis was required.

*Carbon Monoxide Modeling Protocol—Intersection Analysis*

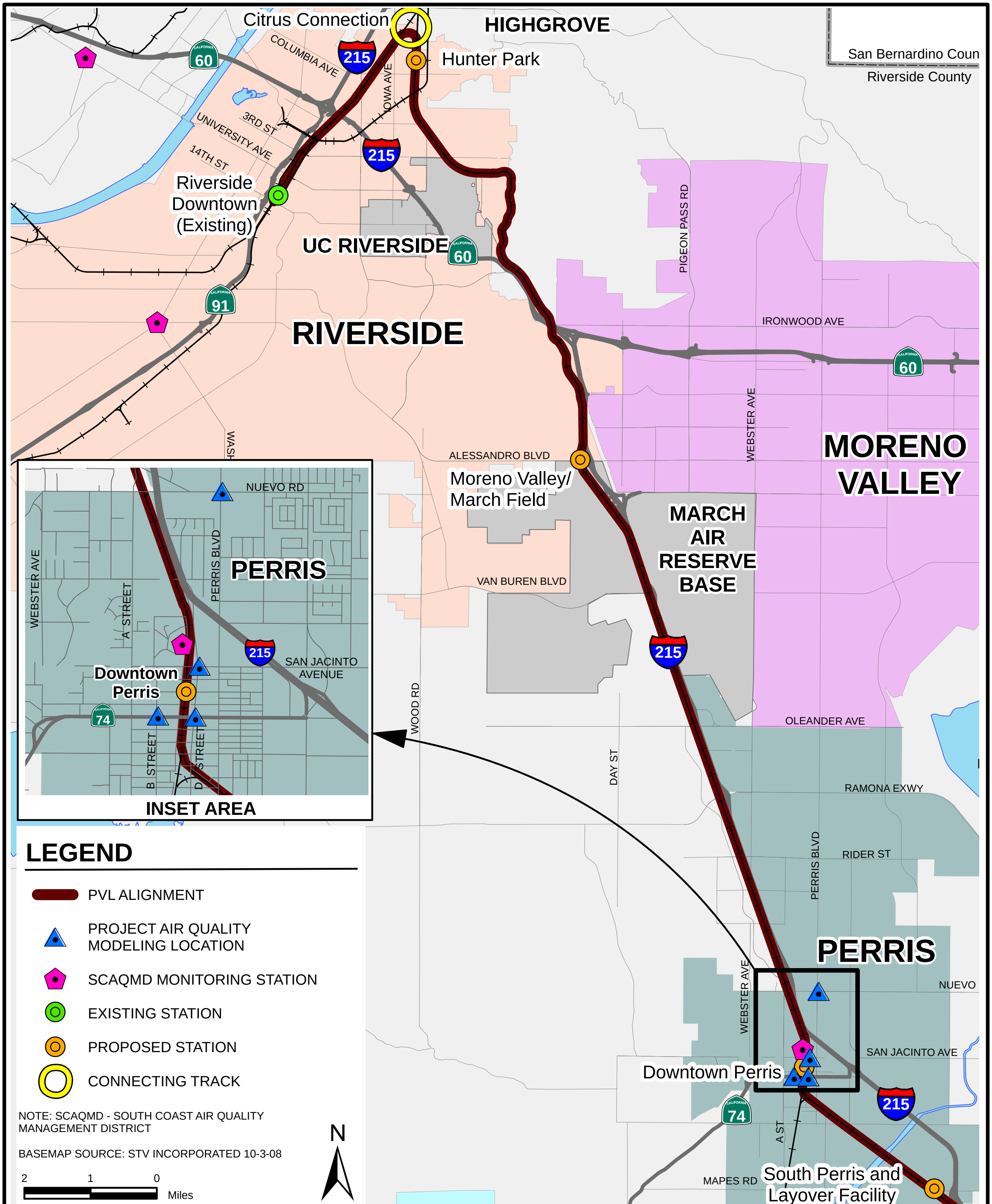
Within an urban setting, vehicle exhaust is the primary source of CO emissions. Consequently, the highest CO concentrations are generally found within close proximity to congested intersection locations (Level of Service [LOS] D or worse). Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For purposes of providing a conservative, worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations, because if impacts are less than significant in close proximity of the congested intersections, impacts would also be less than significant at more distant sensitive receptor locations.

The SCAQMD recommends a hot-spot evaluation of potential localized CO impacts when volumes-to-capacity ratios are increased by two percent at intersections with a Level-of-Service (LOS) of ~~C~~D or worse. Based on these criteria, four intersections were selected for analysis based on information provided in the ~~Perris Valley Line Commuter Rail -~~ Traffic Technical Report (STV Incorporated, 2011) to this EIR as presented in Technical Report D. The selected locations were at the proposed Downtown Perris Station option site, where a large amount of parking is expected to be located and, thus, a significant number of vehicle trips would be expected to be generated.

Local area CO concentrations were projected using the CAL3QHC line-source dispersion model. The analysis of CO impacts followed the protocol recommended by the California Department of Transportation, as detailed in their publication Transportation Project-Level Carbon Monoxide Protocol (California Department of Transportation, Garza et al., 1997). It is also consistent with procedures identified through the SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards. SCAQMD monitoring stations, as well as air quality monitoring locations, are shown on Figure 4.3-1.

The project's CO concentrations for AM and PM peak hour periods (one- and eight-hour) are provided in Table 4.3-7 (opening year 2012 concentrations). As shown in this table, the project would not have a significant impact upon one-hour or eight-hour local CO concentrations due to mobile source emissions.

Because significant impacts would not occur at the intersections with the highest traffic volumes located adjacent to sensitive receptors, no significant impacts are anticipated to occur at any other locations in the study area because the conditions yielding CO hotspots would not be worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors included in this analysis would not be significantly affected by CO emissions generated by the net changes in traffic that would occur under the project. Because the project does not cause an exceedance or exacerbate an existing exceedance of an AAQS, the project's localized operational air quality impacts would therefore be less than significant. No mitigation measures are necessary.

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| DRAWN: | 12/20/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666scaqmdEIR.MXD |

AIR QUALITY MONITORING
AND MODELING LOCATIONS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.3-1

**Table 4.3-7**
**Local Area Carbon Monoxide Dispersion Analysis**

| Location | Peak Period[a] | 2008 | | | | | |
|---|---|---|---|---|---|---|---|
| | | Maximum 1-Hour Base Concentration (ppm) [b] | Maximum 1-Hour With-Project Concentration (ppm) [c] | Significant 1-Hour Impact? [d] | Maximum 8-Hour Base Concentration (ppm) [e] | Maximum 8-Hour With-Project Concentration (ppm) [f] | Significant 8-Hour Impact? [d] |
| C St. @ 4th St. | AM | 4.3 | 4.3 | No | 3.1 | 3.1 | No |
| | PM | 4.4 | 4.4 | No | 3.2 | 3.2 | No |
| D St. @ 4th St. | AM | 4.2 | 4.2 | No | 3.0 | 3.0 | No |
| | PM | 4.4 | 4.4 | No | 3.2 | 3.2 | No |
| D St.@ San Jacinto Avenue | AM | 4.1 | 4.1 | No | 3.0 | 3.0 | No |
| | PM | 4.4 | 4.4 | No | 3.2 | 3.2 | No |
| Perris Blvd @ Nuevo Road | AM | 4.5 | 4.5 | No | 3.3 | 3.3 | No |
| | PM | 4.7 | 4.7 | No | 3.4 | 3.4 | No |

Notes:
CAL3QHC dispersion model output sheets and EMFAC 2007 emission factors
ppm = parts per million
[a] Peak hour traffic volumes are based on the Traffic Technical Report prepared by STV Incorporated, 2011.
[b] SCAQMD 2012 1-hour ambient background concentration (4.1 ppm) + 2012 base traffic CO 1-hour contribution.
[c] SCAQMD 2012 1-hour ambient background concentration (4.1 ppm) + 2012 with-project traffic CO 1-hour contribution.
[d] The State standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.
[e] SCAQMD 2012 8-hour ambient background concentration (2.9 ppm) + 2012 base traffic CO 8-hour contribution.
[f] SCAQMD 2012 8-hour ambient background concentration (2.9 ppm) + 2012 with-project traffic CO 8-hour contribution.

Carbon Monoxide - Parking Lot Analysis

In addition to congested intersection locations, proposed parking lot locations were also evaluated for CO hot spots. There would be four stations with parking lots. Lot size would range from approximately 440 spaces (Downtown Perris Station option) to 880 spaces (South Perris Station option). For purposes of providing a conservative, worst-case impact analysis, CO concentrations were evaluated for the largest parking lot (880 spaces), because if impacts are less than significant at the largest parking lot location, impacts would also be less than significant at each of the smaller parking lot locations. It was conservatively assumed that the distance from parking areas to sensitive receptors were the same for all parking lots.

The parking lot CO hot spot analysis considered emissions from all three vehicular emissions categories: engine start, idle time, and vehicle miles of travel. Emissions factors were ascertained using EMFAC2007 emissions model. Dispersion modeling was conducted using the EPA SCREEN3 model, using EMFAC2007-generated emissions factors. EMFAC2007 emissions factors, and detailed emissions calculation worksheets are provided in Air Quality Technical Report B, Appendix B.

The analysis of parking lot conditions was prepared to assess the potential impacts to individuals from "cold start" emissions. Emissions from "cold starts" are those that could occur when peak hour riders, in this case, return to their vehicles from the train. This would occur during the evening peak periods for the PVL. The pollutant of concern is CO. $NO_x$ is primarily a regional pollutant so localized impacts from parking lot operations would be less than significant.

The largest parking lot, at the South Perris Station site was evaluated, and if impacts were to be identified at this location, then the next largest parking lot would be evaluated as well. To prepare the parking lot analysis, a key modeling assumption was to place sensitive receptors around the proposed 880-space parking lot perimeter, set back at a model default distance of 25 meters. This assumption is conservative, as there are no sensitive receptors within 200 meters of the proposed parking lot at the South Perris Station option site.

Based on the above-described approach, the maximum off-site CO concentration at any sensitive receptor location was determined to be 7.9 parts per million and 5.6 parts per million for the one-hour and eight-hour averaging periods, respectively. These maximum concentrations occurred at a distance of 100 meters from the proposed parking lot. At the model default distance of 25 meters, the one-hour and 8 hour-concentrations were 7.2 and 5.0 parts per million respectively, as shown in Table 4.3-8. These worst-case concentrations are below the NAAQS of 35 parts per million and 9 parts per million for the one-hour and eight-hour averaging periods, respectively. They are also below the CAAQS one-hour concentration not exceeding 20 parts per million (ppm), and the eight-hour concentration of nine ppm. Accordingly, the project's localized operational air quality impacts would be less than significant. No mitigation measures are necessary.

**Table 4.3-8**
**Parking Lot Carbon Monoxide Analysis**

| Parking Lot | 1-Hour Concentration (ppm) | Significant Impact? | | 8-Hour Concentration (ppm) | Significant Impact? | |
|---|---|---|---|---|---|---|
| | | CAAQS (20 ppm) | NAAQS (35 ppm) | | CAAQS (9 ppm) | NAAQS (9 ppm) |
| South Perris Station | 7.2 | No | No | 5.0 | No | No |
| Concentrations measured at model default distance of 25 meters<br>CAAQS = California Ambient Air Quality Standards<br>NAAQS = National Ambient Air Quality Standards | | | | | | |

*$PM_{2.5}$ and $PM_{10}$*

The proposed project is in an area designated as nonattainment for $PM_{2.5}$ and $PM_{10}$. According to the most recent USEPA Transportation Conformity Guidance, a $PM_{10}$/$PM_{2.5}$ hot-spot analysis is required for Projects of Air Quality Concern (POAQC) in non-attainment areas (40 CFR 93.123 (b) (1)). Projects that are exempt under 40 CFR 93.126 or not POAQC do not require hot-spot analysis.

The proposed project does not meet the criteria of an exempt project under 40 CFR 93.126. However, the USEPA specifies in 40 CFR 93.123(b) (1) that only projects considered POAQC are required to undergo a PM10/PM2.5 hot-spot analysis. USEPA defines POAQC as certain highway and transit projects that involve significant levels of diesel traffic or any other project that is identified by the PM2.5 SIP as a localized air quality concern. A discussion of the proposed PVL compared to POAQC, as defined by 40 CFR 93.123(b) (1), is provided below:

1) New or expanded highway projects with greater than 125,000 annual average daily traffic and 8 percent or more of such annual average daily traffic is diesel truck traffic. The proposed project is not a new or expanded highway project.

2) New or expanded highway projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project. The proposed project is not a new or expanded highway project.

3) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location. Although the proposed project has a rail terminal component, it would not alter travel patterns to/from any existing bus or rail terminal.

4) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location. Although the proposed project would expand service to an existing commuter rail terminal (Riverside Downtown Station), it would not increase the number of diesel vehicles congregating at any single location. In addition, the proposed Layover Facility in South Perris would only accommodate a maximum of four SCRRA/Metrolink trains. These trains would receive overnight light maintenance (cleaning, inspection etc.). Heavy maintenance of these vehicles requiring excessive engine idling would be done at an existing off-site SCRRA/Metrolink facility.

5) Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and $PM_{10}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation. The project site is not in or affecting an area or location identified in any $PM_{2.5}$ or $PM_{10}$ implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

Based on the discussion provided above, the proposed project would not be considered a project of air quality concern with respect to $PM_{2.5}$ or $PM_{10}$ emissions as defined by 40 CFR 93.123(b) (1). Additionally, it should be noted that the existing ROW is hard packed soil, so as when a train passes dust is not created or "kicked up" by the passing train. Therefore, a qualitative $PM_{2.5}/PM_{10}$ hot-spot evaluation is not required, and the proposed project can be screened from further analysis.

An Interagency Consultation project review form for $PM_{2.5}$ and $PM_{10}$ hot spot concurrence is required to be submitted to the SCAG Transportation Conformity Working Group (TCWG) for concurrence with this finding prior to final project approval. On April 16, 2010, the SCAG TCWG determined that the PVL was not a Project of Air Quality Concern (POAQC), http://www.scag.ca.gov/tcwg/projectlist/march10.htm). A copy of the TCWG review form is shown in Air Quality Technical Report B, Appendix F.~~Once TCWG concurrence is given, CAA 40 CFR 93.116 requirements are met without an explicit hot-spot analysis.~~

*Mobile Source Air Toxics—Screening Procedure*

The FHWA has issued interim guidance on how MSATs should be addressed for highway projects and has subsequently developed a tiered approach for analyzing them. FTA has no separate guidance. Depending on the specific project circumstances, FHWA has identified three levels of analysis:

1) no analysis for exempt projects or projects with no potential for meaningful MSAT effects,

2) qualitative analysis for projects with low-potential MSAT effects, or

3) quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

For the PVL, the amount of MSATs emitted would be proportional to the amount of rail activity, assuming that other variables (such as traffic and rail activity not associated with this project) are the same. The rail activity estimated for the proposed project would be higher than that for the No Project Alternative, because of the additional activity associated with the proposed rail line extension. This increase in rail activity would mean that the twelve daily train trips between Riverside and Perris would result in MSAT emissions (particularly diesel $PM_{2.5}$ and $PM_{10}$) in the vicinity of the SJBL alignment. The higher emissions could be offset somewhat by two factors: 1) the decrease in regional automobile commuter traffic due to increased use of commuter rail; and 2) increased speeds on area highways due to the decrease in automobile traffic (according to USEPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel $PM_{2.5}$ and $PM_{10}$ decrease as speed increases). The extent to which these emissions decreases would offset the project-related emissions increases cannot be quantified because of the lack of an approved and adopted method for analysis.

In addition, even with the PVL in place, emissions would likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled (VMT) growth rates, and local control measures. However, the USEPA-projected reductions are so significant (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future as well. Therefore the PVL has a low-potential for impacts from MSATs and only requires a qualitative assessment, per FHWA guidance.

*Mobile Source Air Toxics – Health Risk Assessment*

To estimate the localized MSAT effect of the new train service, a health risk assessment was conducted following CEQA air quality guidelines. This health risk assessment takes into account the effects of air toxic contaminants (specifically diesel $PM_{2.5}$ and $PM_{10}$ and acrolein) on human health. Diesel $PM_{2.5}$ and $PM_{10}$, and acrolein were selected for analysis as they are identified by the USEPA as in the group of priority MSATs. ~~This assessment calculates a health risk index based on the emission factors of the existing SCRRA/Metrolink diesel locomotives as well as the running and idle times of the engines~~This assessment calculates a health risk index based on the emissions from diesel locomotives currently being used by SCRRA/Metrolink on other rail lines, as well as the running and idle times of the engines. This estimate is conservative since engines used by the project completion year will be required to meet stricter USEPA emissions standards.

SCAQMD, in its CEQA Air Quality Handbook, identifies an excess individual cancer risk of one in one million to be minimal and risk levels up to ten in one million are considered less than significant. The chronic hazard indexes for these two toxics are also calculated to determine the likelihood of chronic health effects due to exposure. Per SCAQMD, a hazard index less than 1.0 is considered acceptable. The results of the assessment are shown in Table 4.3-9. The health risk assessment is presented in full detail in Air Quality Technical Report B, Appendix C.

**Table 4.3-9**
**Calculated Risk at Point of Greatest Concentration**

| Pollutant | Risk Factor | Maximum Concentration (µg/m$^3$)[1] | Calculated Risk (Health Index - HI) | Threshold of Significance |
|---|---|---|---|---|
| Diesel Exhaust Particulate | Excess Lifetime Cancer Risk | 0.01078 | 3.235/million | 10/million |
| Diesel Exhaust Particulate | Chronic Hazard | 0.01078 | HI = 0.002 | HI = 1.0 |
| Acrolein | Acute Hazard | 0.005055 | HI = 0.004 | HI = 1.0 |
| Source: SCAQMD CEQA Air Quality Handbook, STV Incorporated (2010)<br>1. Represents the maximum calculated pollutant concentrations. | | | | |

The additional commuter rail activity contemplated as part of the PVL would have a negligible effect on diesel $PM_{2.5}$ and $PM_{10}$ or acrolein emissions in the vicinity of nearby homes, schools and businesses along the PVL alignment. In addition, on a region-wide basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, would cause substantial reductions over time so that in almost all cases, the MSAT levels in the future would be significantly lower than today.

Based on the results shown in Table 4.3-9, above, there would be no exceedances of the impact thresholds for any of the criteria pollutants arising from the operation of the proposed commuter rail service; no mitigation of long-term impacts is necessary.

As requested by the SCAG TCWG, prior to construction, RCTC would submit a project review form for the $PM_{2.5}$ and $PM_{10}$ hot spot analysis to TCWG for their concurrence with the finding that the proposed project would not be considered a project of air quality concern with respect to $PM_{2.5}$ or $PM_{10}$ emissions as defined by 40 CFR 93.123(b) (1).

Greenhouse Gas Emissions

While climate change has been an international concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493, California launched an innovative and pro-active approach to deal with GHG emissions and climate change at the state level. Assembly Bill

1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions.

~~On June 1, 2005, Governor Schwarzenegger signed Executive Order (EO) S-3-05. The goal of this EO is to reduce California's GHG emissions to 1) 2000 levels by 2010, 2) to 1990 levels by 2020 and 3) 80 percent below 1990 levels by 2050. The majority of GHG emissions are from the burning of fossil fuels, and 40 percent of all human-made GHG emissions are the result of transportation. Enhancing operations and improving travel times in high congestion travel corridors, such as I-215, would lead to an overall reduction in GHG emissions.~~

While there are many types of GHGs, the most prevalent contributors to the greenhouse effect in the Earth's atmosphere are water vapor, carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), $O_3$, and chlorofluorocarbons (CFCs). $CO_2$ is the GHG most closely linked to passenger car and light truck emissions.

GHGs are considered to contribute to global warming by absorbing infrared radiation and trapping heat in the atmosphere. Because this is a global effect, it is difficult to ascertain the effects from an individual project. While there are many types of greenhouse gases, the most prevalent contributors to the greenhouse effect in the Earth's atmosphere are water vapor, carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), ozone ($O_3$), and chlorofluorocarbons (CFCs). Carbon dioxide is the greenhouse gas most closely linked to passenger car and light truck emissions and recent studies have shown that carbon dioxide ($CO_2$) accounted for approximately 84 percent of total GHG emissions in the state of California (California Energy Commission, 2006). Since $CO_2$ is the most abundant greenhouse gas in the project area, it is assumed that a reduction in $CO_2$ will indicate a reduction in the less prominent GHGs.

According to a recent paper by the Association of Environmental Professionals (Hendrix and Wilson, 2007), an individual project does not generate enough GHGs to significantly influence global climate change; rather, global climate change is a cumulative effect. However, for this project, some baseline quantification of the opportunity to switch from private vehicle to the PVL was prepared to demonstrate the regional benefits that would accrue with the PVL. The $CO_2$ emissions from the operation of the diesel locomotives is estimated based on national usage data for commuter rail and compared to the reduction in $CO_2$ emissions expected from the diverted ridership to the PVL.

On February 16, 2010, the Office of Administrative Law filed with the Secretary of State the amendments to the California Environmental Quality Act (CEQA) Guidelines providing guidance regarding the analysis of GHG in CEQA documents. The amendments, which were approved by the Natural Resources Agency in December 2009 pursuant to Senate Bill 97, became effective on March 18. The amendments are intended to minimize inconsistencies in the analysis of GHG going forward and to provide CEQA lead agencies with guidance on the evaluation of GHG emissions and their associated impacts. Specifically, the new Guidelines confirm that the method of analysis is left to the sound discretion of the lead agency. (CEQA Guidelines §15064.4.) Additionally, the new guidelines confirm that a lead agency may use either a quantitative analysis or a qualitative analysis in determining whether a project may have a potentially significant impact on climate change. (CEQA Guidelines §15064.4.) The analysis required by RCTC includes both quantitative and qualitative elements. The results of the quantitative portions of this assessment are shown in Table 4.3-10. Moreover, and as permitted by the revised CEQA Guidelines and Appendix G, RCTC has determined that the analysis of

GHGs and Climate Change is more appropriate included in the Air Quality Section rather than as a stand-alone Section of the EIR. Accordingly, this analysis fully complies with the newly revised State CEQA Guidelines. ~~In 2009, CEQA included a new section to its guidelines for determining the significance of GHGs (CEQA Guidelines §15064.4, 2009). This new guidance accounts for the lack of an established method for the calculation of GHGs and allows for different methods of calculations provided that substantial evidence is provided to document the method used. The new guidance also allows the use of a qualitative or performance based standard to calculate GHGs. In accordance with the new CEQA Guidelines, a qualitative assessment of GHG emissions was performed. The results of the assessment are shown below in Table 4.3-10.~~

The existing and future vehicle miles traveled (VMT) projections for the proposed project were not available. Therefore an approximation of reduced VMT (as shown in Air Quality Technical Report B, Appendix E) was calculated based on the assumption that the proposed PVL service would replace the single passenger vehicles driving from South Perris to Riverside to connect to the existing rail service. The diversion from private car use to PVL ridership is estimated to reduce VMT by approximately 34 million miles per year in the project area. This estimate includes vehicle miles traveled from private homes to the proposed stations. Based on emission factors from EMFAC2007 in the project operation year of 2012, the reduction in VMT was calculated to result in decreased $CO_2$ emissions of about 160,000 lbs per day. As $CO_2$ is the most abundant GHG found in automobile emissions, a reduction in $CO_2$ indicates a reduction in the less prominent exhaust based GHGs. Therefore, it is unlikely that the proposed PVL project operations would increase the GHG burden in the region, but would likely result in a quantifiable reduction in GHG.

**Table 4.3-10**
**Greenhouse Gas Qualitative Assessment**

| Pollutant Source | $CO_2$ pounds/day |
|---|---|
| Diesel Locomotives | 11,400 |
| Passenger Vehicles | -158,000 |
| Net change in $CO_2$ | -146,600 |

Construction Period Air Quality Evaluation

Construction is a source of fugitive dust and exhaust emissions that can have substantial temporary impacts on local air quality causing exceedance of CAAQS for $PM_{10}$ and/or $PM_{2.5}$. Dust emissions would result from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, and cut-and-fill operations. Dust emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. ~~As the proposed PVL project would not involve extensive soils work~~However, as most standard dust prevention measures would significantly reduce the level of soil-related dust, a major portion of the dust emissions ~~for~~ from the proposed project would be caused by construction-related vehicle traffic~~ on temporary construction roadways~~. Construction emissions from vehicular exhaust would result from the movement and operation of vehicles related to construction activities. Emissions would be generated by both off-site and on-site activities. Off-site emission producing ~~actives~~activities include construction work crews traveling to and from the work site. They also include on-road emissions from delivery trucks and dump trucks in addition to locomotive emissions from freight deliveries. On-site emission producing ~~actives~~ activities include the operation of off-road construction machinery and vehicles. Pollutants of interest with respect to construction exhaust emissions include; CO, $NO_x$, ROC, $SO_2$, $PM_{10}$, $PM_{2.5}$ and the GHG $CO_2$.

In order to assess construction emissions, daily average emissions were calculated for all construction activities. These emissions were then compared to the SCAQMD daily construction emission pollutant thresholds shown below in Table 4.3-11. This reasonable worst-case construction day included installation of culverts, all road crossings and crossing improvements, embankment work, all track work, turnout work, stations (including parking areas where applicable) and the Layover Facility, Mapes Road construction, bridge replacement (including demolition and removal of existing bridges), noise barriers, landscape walls, and installation of signals and communication. For each activity, the duration of the activity, the number and types of construction equipment, and equipment horsepower were used as inputs to define daily emissions. Fuel type was assumed to be diesel, to assure a conservative analysis of particulate matter. The assessment assumed that low vehicle speeds and fugitive dust suppression measures (application of dust palliatives, covering of dust piles, etc.) would be strictly enforced within the construction zones. As a result, fugitive dust emissions of particulate matter were assumed negligible. Other ~~Key~~ key assumptions include:

- As the detailed PVL project construction schedule is not available at this point in the project ~~(30% engineering drawings)~~, estimates of construction machinery/equipment and construction duration, work crew trip estimates and delivery estimates using best professional judgments from a senior railroad professional engineer (see Air Quality Technical Report B, Appendix D). Estimates are provided for each individual construction task.
- On-site emission come from EPA NONROAD2008 construction model emissions tables
- The “Embankment Construction” is the only task with extensive soils work. Therefore, a fugitive dust analysis was conducted using the 2007 URBEMIS Construction Emissions Model (see Air Quality Technical Report B, Appendix D).
- ~~No~~ Some construction sites would require the ~~import/~~export of soils ~~material~~. The amount of soils that would be removed is based on the “90% Mass Haul Diagram Exhibit” provided in Air Quality Technical Report B, Appendix D.
- Although the overall construction ~~would be approximately~~duration is estimated at 18 months, emissions estimates conservatively assume a peak construction year period for most construction activities. Emissions estimates for soils exports are based on the first 12 months of construction when the great majority of soils would be removed.
- All construction activities are conservatively assumed to occur simultaneously.
- The use of a “Diesel Oxidation Catalyst” and “Aqueous Diesel Fuel” will be required for all non road construction vehicles and equipment. This would reduce $NO_x$ emission by 15%.
- No idling of off road machinery or trucks would be allowed, which would reduce emission of exhaust particulate matter.

This approach also assumes that process emissions (which include on-site soil movement as well as fugitive dust emissions) will be negligible (with the exception of Embankment Work) due to inclusion of dust control measures such as:

- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission. Haul vehicles transporting soil into or out of the worksite shall be covered.
- Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary.
- On-site vehicles limited to a speed of less than 5 mph.
- All visibly dry disturbed soil surface areas of operation shall be watered to minimize dust emission.
- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s). Adequately secured tarps, plastic or other material shall be employed to further reduce dust emissions.
- SCAQMD Rule 1113 requires all facilities to use CARB-certified low-VOC paints during construction of commercial and industrial facilities. In accordance with that requirement, the project will include special conditions in its design-build specifications to require the following:
  - To the extent practicable, use required coatings and solvents with a VOC content lower than required under SCAQMD Rule 2113.
  - To the extent practicable, use non-VOC paints and architectural coatings.
- All paints shall be applied either by hand application or by using high-volume low-pressure spray equipment.

~~Other project control measures would include:~~

- ~~The use of a "Diesel Oxidation Catalyst" and "Aqueous Diesel Fuel" will be required for all non road construction vehicles and equipment. This would reduce $NO_x$ emission by 15%.~~
- ~~No idling of off road machinery or trucks. Reduces exhaust PM.~~

Additions to the project construction plans and documents shall be made for all control measures.

Analysis background material spreadsheet calculations, in addition to the URBEMIS model run, are included in Air Quality Technical Report B, Appendix D. Although not included in the SCAQMD construction threshold limits, emissions of the GHG $CO_2$. were calculated for the construction period to help give quantifiable estimate of the overall carbon footprint of the PVL project.

As shown in Table 4.3-11, based upon the cumulative evaluation of the reasonable worst-case construction day, the construction of the PVL would not result in exceedances of the SCAQMD CEQA daily construction emission limits. Significant adverse impacts would not occur; nonetheless, Best Management Practices (BMP) will be implemented to control localized emissions. The construction emissions analysis is presented in full detail in ~~the~~ Air Quality Technical Report B ~~to this EIR~~.

**Table 4.3-11**
**Perris Valley Line Predicted Daily Construction Emissions (lbs)**

| | CO | $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | VOC | $SO_X$ |
|---|---|---|---|---|---|---|
| **PVL Total Emissions** | **44** ~~**40**~~ | **98** ~~**88**~~ | **49** ~~**6**~~ | **15** ~~**5**~~ | **9** ~~**8**~~ | **2** |
| **SCAQMD Construction Emission Limits** | 550 | 100 | 150 | 55 | 75 | 150 |
| **Significant (Yes/No)** | No | No | No | No | No | No |

In accordance with the new CEQA Guidelines, a qualitative assessment of $CO_2$ emissions was performed. The results of the assessment indicate that emissions created by construction activities would total approximately 12,118 ~~10,083~~ lbs per day during the construction period. This estimate coupled with the net decrease in operational emissions of 146,600 ~~160,000~~ lbs per day indicates that the implementation of the proposed PVL project would not result in increases in $CO_2$ pollutant emissions.

Construction Best Management Practices

During the construction period, contractors would be required to implement BMPs to control fugitive dust emissions in accordance with SCAQMD Rule 403. In addition to these regulatory requirements, the following construction-phase air quality BMPs would also apply and be included in RCTC contract documents:

- BMP AQ-1: All land clearing/earth-moving activity areas will be watered to control dust as necessary to remain visibly moist during active operations.
- BMP AQ-2: Streets will be swept as needed during construction, but not more frequently than hourly, if visible soils ~~material~~ ~~has~~have been carried onto adjacent public paved roads.
- BMP AQ-3: Construction equipment will be visually inspected prior to leaving the site and loose dirt will be washed off with wheel washers as necessary.
- BMP AQ-4: Water three times daily or apply non-toxic soil stabilizers, according to manufacturers' specifications, as needed to reduce off-site transport of fugitive dust from all unpaved staging areas and unpaved road surfaces.
- BMP AQ-5: Traffic speeds on all unpaved roads will not exceed 5 mph.
- BMP AQ-6: All equipment will be properly tuned and maintained in accordance with manufacturer's specifications.
- BMP AQ-7: Contractors will maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use, to reduce vehicle emissions.

- BMP AQ-8: Establish an on-site construction equipment staging area and construction worker parking lots, located on either paved surfaces or unpaved surfaces subject to soil stabilization.
- BMP AQ-9: Use electricity from power poles, rather than temporary diesel or gasoline powered generators.
- BMP AQ-10: Use on-site mobile equipment powered by alternative fuel sources (i.e., ultra-low sulfur diesel, methanol, natural gas, propane or butane).
- BMP AQ-11: Develop a construction traffic management plan that includes, but is not limited to: (1) consolidating truck deliveries (2) utilizing the existing rail freight line for materials delivery.
- BMP AQ-12: Construction grading on days when the wind gusts exceed 25 miles per hour would be prohibited to control fugitive dust.

With application and compliance with the construction-period BMPs, potential impacts during construction would be less than significant. By such avoidance, impacts would be less than significant.

Summary of Construction Period Impacts

The overall potential for air quality impacts to be cumulatively significant is reduced because the proposed project would comply with state and regional air quality requirements that construction projects mitigate their individual impacts to less than significant levels, based on their forecasted construction schedule and levels of activity. Traffic and construction data pertaining to the construction of the other projects is a requirement for a quantitative assessment of cumulative impacts. However, it is assumed that concurrent projects are following the same construction BMPs or are included in the RTIP (in which the impacts of their emissions would be already accounted for in the regional burden) and thus their impacts would not be significant.

Construction of the proposed Downtown Perris Station option could occur simultaneously with the construction of other proposed downtown revitalization projects, which could result in cumulative construction impacts. One of these, the Perris Multimodal Transit Facility is currently in the process of being built so there would be no potential for any cumulative impacts since it would be completed before the PVL project. The extent of the potential impacts with other projects would depend on the location, magnitude, and duration of construction activities for each of the projects. CEQA analysis conducted for this proposed project indicates the use of several pollution control measures to aid in reducing emissions. However, the proposed project would avoid exceeding SCAQMD criteria thereby would reduce any potential for cumulative construction period impacts. It is assumed and likely that other construction projects in Perris would also be conducted with similar mitigation and control measures in place.

Development projects, such as the Meridian Business Park in Moreno Valley (formerly known as March Business Center), would also be required to impose mitigation measure to address fugitive dust or exceedances of other criteria pollutants during construction. Since construction of each element of these master planned developments would also have to include mitigation measures the overall potential for cumulative air quality impacts would be reduced. However, the Meridian Business Park would be built over the next 20 to 25 years and as such is unlikely to interfere with the PVL construction schedule which would be implemented over the next two years. As such the overall potential for cumulative impacts would be reduced.

Summary of Impacts

The proposed PVL project would reduce some long-distance trip-making that now occurs via automobile, resulting in a corresponding improvement in air quality. Although the total amount of air quality improvement is small compared to the region, the introduction of commuter rail service provides an ongoing opportunity for reducing trips. The proposed rail service would result in a net decrease in CO, ROC, and $SO_x$ emissions. In addition, SCRRA/Metrolink will be replacing engines over time and the next generation would meet USEPA Stage III requirements, which have up to 40% lower emissions characteristics than the current fleet. As these new engines are incorporated into the fleet, air quality benefits would increase.

Riverside County and the study corridor are forecasted to have substantial increases in population and employment over the coming decades. The general result of such growth would be increased travel on the existing roadway network, demand for additional capacity on those existing facilities, demand for new roadways, as well as additional demand for transit services. The cumulative impacts of increased transportation demands would likely be degradation of air quality as the volume of travel continues to expand, conversion of land use from agriculture/vacant to residential and commercial development, a corresponding reduction of habitats as land uses change, and increased demands on public facilities.

***Does the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)***

Table 4.3-12 shows the air quality impacts that would occur during operation of the proposed PVL, with the following operational characteristics. The proposed project would operate 12 one-way trains (four from Perris to LA and one from LA to Perris in the morning peak; one round-trip from LA to Perris to LA midday; four from LA to Perris and one from Perris to LA in the afternoon/evening). This schedule is executed using six train sets featuring F59PHI locomotives, which are currently used by SCRRA/Metrolink. Four of the trains would layover at South Perris to fulfill the morning schedule, while two train sets would reside at LA Union Station to perform the AM and midday schedule out of LA Union Station. The operational analysis includes the incremental increase in train service over the approximately 168-mile round-trip route between South Perris and LA Union Station. In addition, the operational air quality impacts analysis includes the four new stations anticipated to be in service during the initial operation, plus Riverside Downtown Station which is already in service. $SO_x$ emissions were calculated by assuming operational times based on the proposed schedule and use of ultra low sulfur diesel (ULSD) fuel which will be used exclusively by 2012 as mandated by USEPA. The operational emissions of the trains are based on fuel consumption during the entire trip from South Perris to LA Union Station, and thus include fuel consumed during the train's running and idling phases. Air Quality Technical Report B, Appendix E, details the calculation.

**Table 4.3-12**
**2012 Net Change in Operational Emissions (in pounds per day)**

| Source Category | Pollutant | | | | | |
|---|---|---|---|---|---|---|
| | Sulfur Oxides ($SO_x$) | Carbon Monoxide (CO) | Reactive Organic Compounds (ROC) | Oxides of Nitrogen (NOx) | Particulate Matter ($PM_{10}$)[1] | Fine Particulates ($PM_{2.5}$)[1] |
| Train Emissions[2] | 0.1 | 30 | 6 | 114 | 4 | 4 |
| Vehicular Emissions Reduced | 1 | 1227 | 26 | 73 | 8 | 8 |
| NET PROJECT EMISSIONS | -1 | - 1197 | - 20 | 41 | - 4 | - 4 |
| SCAQMD Significance Thresholds for Operation | 150 | 550 | 55 | 55 | 150 | 55 |
| Significant (Yes/No) | No | No | No | No | No | No |

Note: Vehicular Emissions assessed with EMFAC2007, V2.2, July 15, 2009 for summertime.
1. $PM_{2.5}$ emissions calculated consistent with methodology provided in the SCAQMD guidance document *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* (2006).
2. Assumes 6 F59PHI diesel engines (meeting EPA Tier 2 emission standards) each operating one 168 mile round trip per day between South Perris and L.A.
3. $NO_x$ is primarily a regional pollutant so localized impacts from parking lot operations would be less than significant.
Source: STV Incorporated. (2010).

The proposed PVL project would result in decreased emissions of carbon monoxide, volatile organic compounds, $SO_x$ $PM_{2.5}$ and $PM_{10}$. Nitrogen oxide emissions would increase, but the increase would be less than significant. With the reductions in these pollutants, the proposed project would produce a cumulative net benefit to the region's air quality. As rail passenger ridership increases over time and the diesel engines continue to meet EPA's more stringent emission standards, there would be ongoing and increasing air quality benefits.

It is also important to note that the proposed project is included in SCAG's 2008 Adopted RTIP (Project ID RIV520109), which indicates that the project's operational emissions meet the transportation conformity requirements imposed by USEPA and SCAQMD.

***Does the project expose sensitive receptors to substantial pollutant concentrations***

The project would not expose sensitive receptors to substantial pollutant concentrations, and less than significant impacts would result.

Some land uses are considered more sensitive to changes in air quality than others, depending on the types of population groups exposed and the activities involved. According to CARB, air pollution has an adverse effect on four primary groups of people: (1) children under 14 years of age, (2) the elderly over 65 years of age, (3) athletes, and (4) people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For the proposed PVL project, the sensitive receptors closest to the alignment are:

- Highland Elementary School - located approximately 65 feet (20 meters) ~~46 meters (150 feet)~~ east of the alignment near the intersection of Watkins Drive and Blaine Street near the campus of UC-Riverside

- Highland Park - located approximately 75 feet (23 meters) ~~26 meters (85 feet)~~ east of the alignment
- UC-Riverside Child Development Center - located approximately 110 feet (34 meters) ~~38 meters (125 feet)~~ west of the alignment in Riverside
- Hyatt Elementary School - located in the Box Springs area near Watkins Drive approximately 130 feet (40 meters) ~~152 meters (500 feet)~~ west of the alignment
- Nan Sanders Elementary School - located approximately 100 feet (31 meters) ~~38 meters (125 feet)~~ west of the alignment in Perris
- City of Perris Senior Center - located approximately 70 feet (21 meters) ~~24 meters (80 feet)~~ east of the alignment in Perris

None of these sensitive receptors are located near the intersections that are projected to have the most potential for future congestion, as identified in the traffic analysis in Chapter 4.11. In addition, these receptors would not be close to any of the proposed parking lots. Potential air quality impacts at sensitive receptor locations with respect to both intersections and parking lots are discussed below.

An analysis of the potential for impact to sensitive receptors is performed in circumstances where CO pollution could be expected to occur, such as at parking facilities where extensive idling could occur and at intersections where a large volume of automobiles and trucks could be expected. At the intersections identified in the traffic analysis (refer to Chapter 4.11) as having the potential for most future congestion, the Guideline for Modeling Carbon Monoxide from Roadway Intersections (USEPA, 1992) was used to determine receptor locations on sidewalks and near discrete sensitive receptor locations. Consequently, the CO hot spot analysis evaluated the potential impacts to these sensitive receptors and calculated pollutant concentrations. Pollutant concentrations decrease as distance from the pollutant source to a receptor increases; therefore, if the analysis determined that there would be a less than significant impact at the sensitive receptors closest to the congested intersection, then it is expected that impacts to receptors located further away from these intersections (such as the sensitive receptors listed above) would also be less than significant and would not require analysis. As mentioned above, none of the specific sensitive receptors listed above would be near any of these congested intersections.

In addition to the intersection analysis, an assessment of sensitive receptors near the proposed PVL station parking lots was also conducted. The assessment identified residential receptors located close to the proposed station parking lots. Specifically, the parking lot for the proposed commuter rail station at Palmyrita Avenue (one of the Hunter Park Station options) would be located approximately 35 meters (115 feet) south and east of residences, while the Downtown Perris Station would be located approximately 65 meters (215 feet) east of a row of homes. At these locations where receptor distances are nearest to the pollutant source, as shown in the Carbon Monoxide - Parking Lot Analysis in Section 4.3.4, the proposed station parking lots are not expected to generate significant CO concentrations, and a less than significant impact would occur. Other receptors located even further away (such as St. James Catholic School and Perris Elementary School in Perris) would also experience less than significant impacts.

In addition to potential impacts from intersections and parking lots, a health risk assessment with respect to diesel emission from PVL locomotive operations was also considered. Emission would be from trains traveling along the alignment as well as those idling temporarily within layover yards. As a result, air quality modeling was conducted to predict maximum concentrations of air toxic pollutants. Based on these predicted concentrations, the resulting assessment indicated that the "health risk" to sensitive receptors within the project corridor would be substantially below the SCAQMD threshold of significance. Therefore, the potential health risk from train operations would be less than significant.

As shown in the above Tables 4.3-7, 4.3-8, 4.3-9, 4.3-10, 4.3-11, and 4.3-12, the expected project-related emissions are below all established thresholds of significance for pollutant concentrations and health risks assessments.

***Does the project create objectionable odors affecting a substantial number of people***

The project is not expected to create any objectionable odors that will affect a substantial number of people.

Most of the emissions related with this project are related to odorless pollutants such as CO. Therefore, the level of project-related odors is not significant.

### *4.3.5 Mitigation Measures*

Implementation of the PVL project would not result in significant impacts with regard to air quality. No mitigation measures are required.

## 4.4 BIOLOGICAL RESOURCES

Biological resources are terms that describe individual species as well as the habitat types used by these species. This section addresses biological resources within and adjacent to the PVL. Additionally, impacts associated with the construction of the PVL are described in the following sections.

### *4.4.1 Environmental Setting*

The existing BNSF and SJBL corridors have been in use for over 100 years and are within very disturbed ROW.[1] The land uses adjacent to the ROW vary from industrial, commercial, residential, undeveloped, and park land. Both the adjacent land and the rail corridor itself are completely within Riverside County and therefore included in the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) area. The following information is derived from the Western Riverside County MSHCP unless otherwise noted (Riverside County, 2003).

<u>Multiple Species Habitat Conservation Plan Areas</u>

Based on a review of the MSHCP Area Plans, the PVL project was determined to be within multiple Area Plans that include the cities of Riverside and Norco Area Plan, Highgrove Area Plan, March Area Plan, Mead Valley Area Plan, and the Harvest Valley/Winchester Area Plan. Portions of an Area Plan contain Area Plan Subunits that have target conservation acreages that have been established based on planning species, biological issues and considerations, and criteria for each Subunit.

Within the cities of Riverside and Norco Area Plan, the Sycamore Canyon West, Subunit 2 is located adjacent to the PVL alignment. Within the Highgrove Area Plan, the PVL project bisects the Sycamore Canyon/Box Springs Central, Subunit 1. Within the Mead Valley Area Plan, the PVL alignment intersects the San Jacinto River Lower, Subunit 4.

Within the Area Plans are specifically designated habitat blocks and linkages. The MSHCP identified Proposed Constrained Linkage 7 within the study area crossing the I-125 and SJBL line at Poarch Road. The Proposed Constrained Linkage 7 would connect Existing Noncontiguous Habitat Block A to Existing Core D that are both located outside of the study area. Existing Noncontiguous Habitat Block A is located approximately 190 feet east of the SJBL line between Marlborough and Spruce Streets. The MSHCP also identified Proposed Constrained Linkage 19 that crosses the SJBL line (east and west of I-125) at the San Jacinto River. A short description of Linkages within the study area, including connections to adjacent core areas, Habitat Blocks, and species provided for with Live-In and/or movement is provided below in Table 4.4-1 and shown in Figure 4.4-1.

- **Existing Noncontiguous Habitat Block A** is located in the Box Springs Mountains, near the northern boundary of the cities of Riverside and Norco Area Plan. This Block includes two parcels of land connected by Proposed Constrained Linkage 8 and in turn connected to

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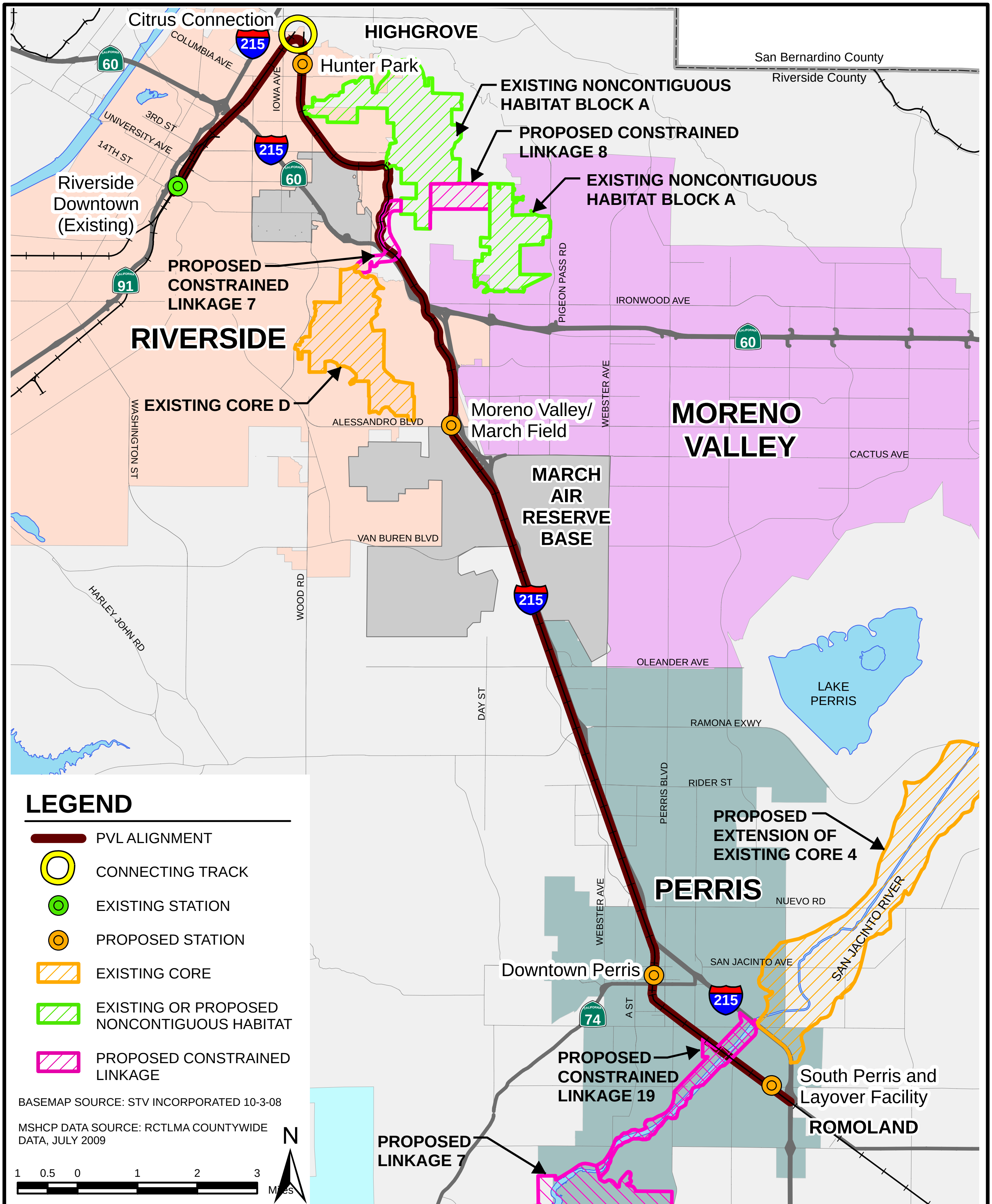
[1] That is regularly maintained with the application of herbicides.

other MSHCP conserved lands via Proposed Constrained Linkage 7 and Proposed Linkage 4. This Block provides Live-In Habitat for species, and it likely contains movement habitat for common mammals such as the bobcat. It is partially constrained by existing urban development and is surrounded by a city planned land use designation.

- **Proposed Constrained Linkage 7** is comprised of upland habitat in the vicinity of Central Avenue. It is the only connection from Sycamore Canyon Park to Box Springs Reserve. This Linkage is important for species dispersal and would reduce the likelihood of species extinction as a result of population isolation. Habitat Planning Species such as cactus wren and Bell's sage sparrow occur within this Linkage. Additionally, this Linkage likely provides for movement of common mammals such as bobcat. The Linkage is constrained by existing urban development and roadways.
- **Proposed Constrained Linkage 8** is comprised of upland habitat in the Pigeon Pass Valley and connects to two existing Noncontiguous Habitat Blocks in the Box Springs Mountain area. Planning species such as cactus wren and bobcat may move through the area. Maintenance of contiguous habitat with appropriate refugia for resting, such as rockpiles, brushpiles, windfalls, hollow snags and hollow trees, is important for dispersal of juvenile animals. This Linkage is constrained by planned Rural Mountainous development to the north.
- **Existing Core D** consists of Sycamore Canyon Park and is the most isolated of the proposed and existing cores. It is connected to Existing Noncontiguous Habitat Block A via Proposed Constrained Linkage 7. This Core provides Live-In Habitat for the granite spiny lizard and likely provides movement habitat for bobcat. Management control within this Core includes March Joint Powers Authority and the City of Riverside Park and Recreation Department.
- **Proposed Constrained Linkage 19** (Lower San Jacinto River) is located approximately in the center of the Mead Valley Area Plan. This Linkage connects Proposed Linkage 7 in the southwest with Proposed Extension of Existing Core 4 (San Jacinto River Core) in the northeast. Existing agricultural use and a small amount of existing urban development constrain the Linkage along much of its length. Although there are plans to channelize the river to control flooding, the Linkage would nonetheless maintain connectivity along the river and provide for movement of common mammals such as the bobcat.
- **Criteria Cells** are used to identify potential land for conservation within the Area Plans, Criteria Cells are identified based on land parcel information. The PVL borders and bisects a total of five Criteria Cells in two of the five Area Plans (Criteria Cells 545, 362, 721, 3276, and 3378). Table 4.4-2 summarizes the conservation criteria for each Criteria Cell and the PVL study area's relationship to that particular Cell.




Perris Valley Line | RCTC | KLEINFELDER

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | MSHCP CORES AND LINKAGES | FIGURE |
| DRAWN: | 3/31/10 | | 4.4-1 |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME:<br>92666landEA2EIR.MXD | | | |

**Table 4.4-1**
**Cores and Linkages related to PVL**

| Feature | Species | PVL Relationship | Adjacent General Plan Land Use Designations |
|---|---|---|---|
| Existing Noncontiguous Habitat Block A | southern California rufous-crowned sparrow, Bell's sage sparrow, cactus wren, loggerhead shrike, Stephens' kangaroo rat (SKR), bobcat, and Nevin's barberry | 1,400 ft east of SJBL Line between Marlborough and Spruce Streets (Box Springs Mountain Reserve) | Rural Mountainous, City (Riverside, Moreno Valley), Open Space/ Conservation |
| Proposed Constrained Linkage 7 | Bell's sage sparrow, cactus wren, and bobcat | Crosses SJBL Line and I-215 at Poarch Road | Community Development Open Space/Conservation |
| Proposed Constrained Linkage 8 | southern California rufous-crowned sparrow, Bell's sage sparrow, cactus wren, loggerhead shrike, and bobcat | 1,000 ft east of SJBL Line at Big Springs Road | Rural Community Mountainous and Open Space/ Conservation |
| Existing Core D | Wilson's warbler | West of I-215 and SJBL Line at Central Avenue and Gernert Road; Less than 500 ft south of the Moreno Valley/March Field Station (Sycamore Canyon Park) | Sycamore Canyon Specific Plan |
| Proposed Constrained Linkage 19 | mountain plover, loggerhead shrike, white-faced ibis, bobcat, Los Angeles pocket mouse, San Jacinto Valley crownscale, Davidson's saltscale, thread-leaved brodiaea, vernal barley, Coulter's goldfields, spreading navarretia, and Wright's trichocoronis | Crosses the SJBL Line along the Lower San Jacinto River | Parks/Recreation/National Open Space<br>Riverglen Specific and Green Valley Plan Areas |

**Table 4.4-2**
**MSHCP Cell Number Conservation Criteria**

| Cell Number | Conservation Criteria | PVL Study Area Relationship |
|---|---|---|
| **Highgrove Area Plan: Sycamore Canyon/Box Springs Central Subunit 1** | | |
| 545 | Conservation within Cell# 545 will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub habitat. Areas conserved within this Cell will be connected to coastal sage scrub habitat proposed for conservation to the south in Cell# 635. Conservation within Cell# 545 will range from 15%-25% of the southeastern portion of the Cell. | The existing railroad tracks have historically bisected the cell. Since the existing footprint (only track upgrades of the existing track, no passing track in this area) is staying the same, there is not a conflict with the conservation objectives of the cell. |
| 635 | Conservation within Cell# 635 will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub habitat. Areas conserved within Cell# 635 will be connected to coastal sage scrub habitat proposed for conservation to the south in Cell# 721 and to the north in Cell# 545. Conservation within this Cell will range from 25%-35% of the central portion of the Cell. | The existing railroad tracks have historically bisected the cell. Since the existing footprint (only track upgrades of the existing track, no passing track in this area) is staying the same, there is not a conflict with the conservation objectives of the cell. |
| 721 | Conservation within Cell# 721 will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub habitat and riparian scrub, woodlands and forests. Areas conserved within this Cell will be connected to coastal sage scrub habitat proposed for conservation to the north in Cell# 635 and to the west in Cell# 719 in the City of Riverside. Conservation within Cell# 721will range from 35%-45% of the northeastern and central portions of the Cell. | The existing railroad tracks have historically bisected the cell. Since the existing footprint (only track upgrades of the existing track, no passing track in this area) is staying the same, there is not a conflict with the conservation objectives of the cell. |
| **Mead Valley Area Plan: San Jacinto River Lower Subunit 4** | | |
| 3276 | Conservation within Cell# 3276 will contribute to assembly of Proposed Constrained Linkage 19. Conservation within Cell# 3276 will focus on assembly of grassland habitat associated with the San Jacinto River. Areas conserved within Cell# 3276 will be connected to grassland habitat and agricultural land proposed for conservation in Cell# 3277 to the east and to agricultural land proposed for conservation in Cell# 3378 to the south. Conservation within Cell# 3276 will range from 45%-55% of the Cell focusing in the southern portion of the Cell. | The existing railroad tracks have historically intersected this cell. The project proposes track upgrades in the area and the replacement of two bridges over the San Jacinto River and Overflow Channel. The replacement bridges are planned to be wider and have fewer piers in the channel. This would allow for a larger area for animals to pass underneath and would therefore be an improvement of the linkage and the related conservation objectives. |
| 3378 | Conservation within Cell# 3378 will contribute to assembly of Proposed Constrained Linkage 19. Conservation within Cell# 3378 will focus on assembly of agricultural land associated with the San Jacinto River. Areas conserved within this Cell will be connected to agricultural land proposed for conservation in Cell# 3377 to the west, to grassland habitat proposed for conservation in Cell# 3276 to the north, and to agricultural land proposed for conservation in Cell# 3277 to the northeast. Conservation within Cell# 3378 will range from 30%-40% of the Cell focusing in the northwestern portion of the Cell. | The existing railroad tracks have historically intersected this cell. The project proposes track upgrades in the area and the replacement of two bridges over the San Jacinto River and Overflow Channel. Bridge opens up linkages fewer impediments. |

Stephens' Kangaroo Rat Conservation Areas

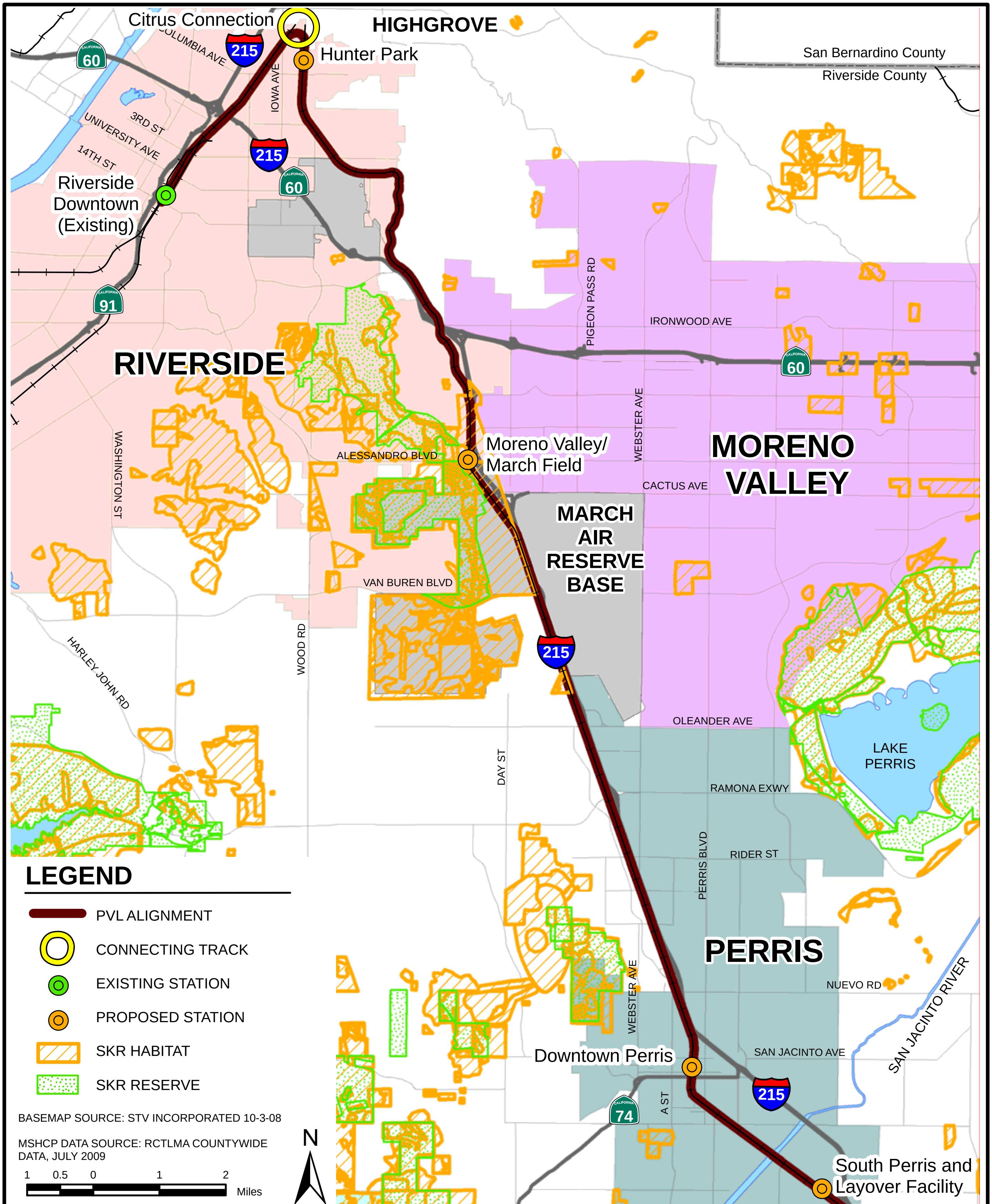
The Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) established seven permanent core area reserves for SKR, one of which is in the vicinity of the proposed PVL project as shown in Figure 4.4-2 (Riverside County Habitat Conservation Agency [RCHCA], 2007). The Sycamore Canyon-March Air Force Base Core Reserve is located west of I-215 and the existing PVL corridor. The SKR Reserve covers approximately 2,502 acres across two components. The proposed Moreno Valley/March Field Station is located near the SKR Reserve but outside of the boundaries. During the planning for the Meridian Business Park the SKR Reserve boundary was relocated so that all of the Meridian Business Park is now outside the SKR Reserve. This boundary was relocated after negotiations with U.S. Fish and Wildlife Service. All PVL project components are located outside the SKR Core Reserves. However, the PVL project is still within the SKR Fee Area. Any project located within the fee area is required to pay a mitigation fee to fully mitigate project impacts.

Habitats within the PVL Corridor

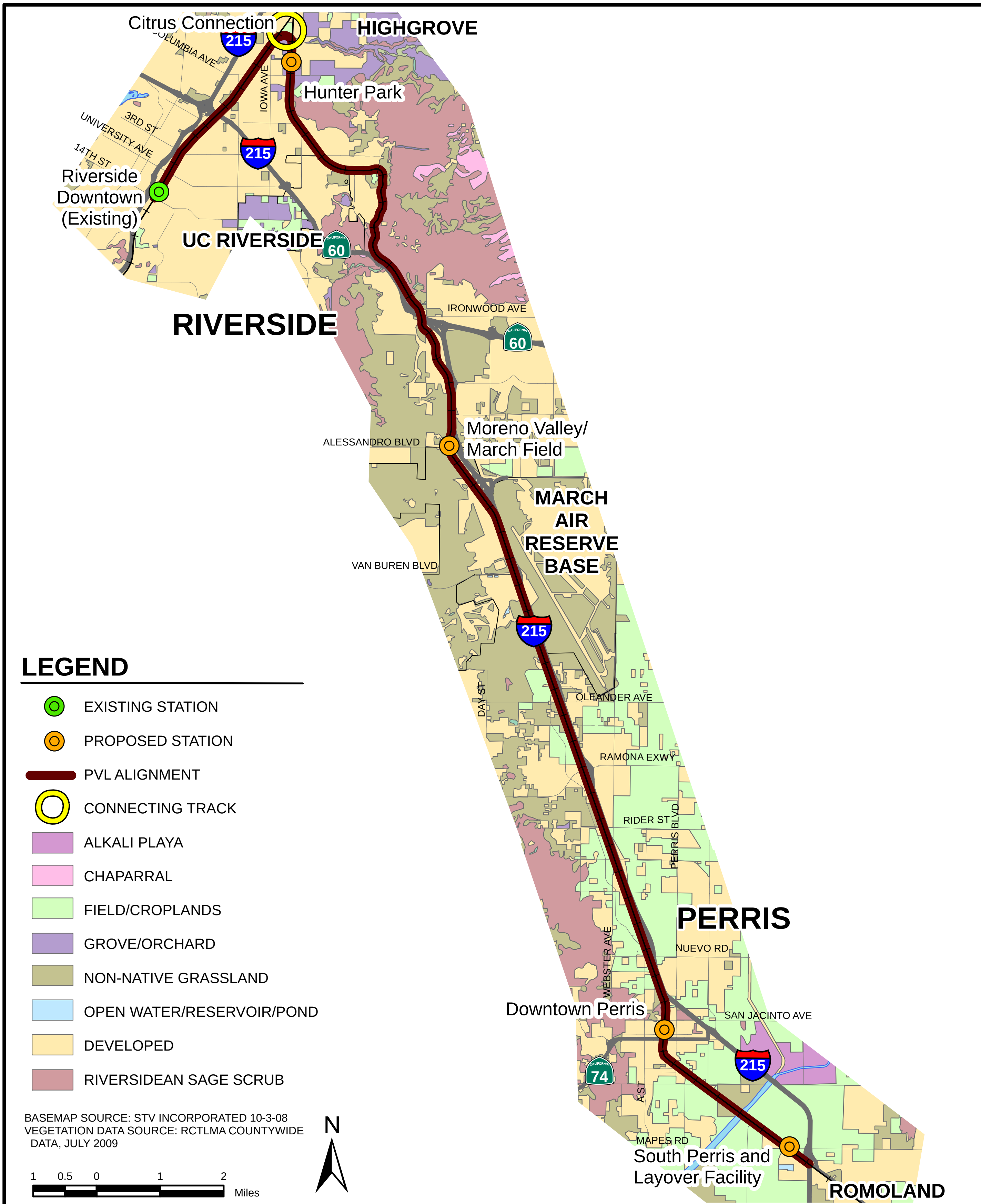
The potential presence of the burrowing owl, Southwestern willow flycatcher, least Bell's vireo, California gnatcatcher and western spadefoot toad represent the only potentially affected species within the PVL corridor. Additional sensitive habitat was identified within the Box Springs Canyon Reserve, but these habitat areas are adjacent to the PVL alignment, and not anticipated to be directly impacted as part of the project. There is potential burrowing owl habitat present at the Citrus Connection and at points along the SJBL alignment between MP 3.00 and MP 9.00. The following provides a description of the habitat and vegetation types within, and adjacent to the PVL ROW as shown in Figure 4.4-3 and described below:

*Citrus Connection*

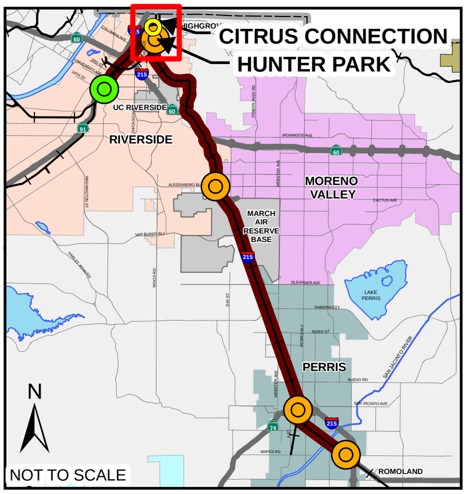
The Citrus Connection is located north of Springbrook Wash and will be used for new track to connect the BNSF main line (in the west), to the SJBL (in the east). Both the BNSF main line and the SJBL tracks already cross the wash on earthen berms, within existing ROW's and the new connecting track would be completely outside the wash. This land, north of the wash, has been approved for development as warehouse buildings by a private developer. As part of that development agreement, the land within the Springbrook Wash has been transferred into a conservation parcel. This parcel is anticipated to remain a conservation parcel in perpetuity. The habitat of the Citrus Connection is very poor quality, disturbed non-native grassland as shown in Figure 4.4-4. This non-native grassland area has been determined to be potential habitat for burrowing owl by the MSHCP criteria determination and confirmed during a field visit.



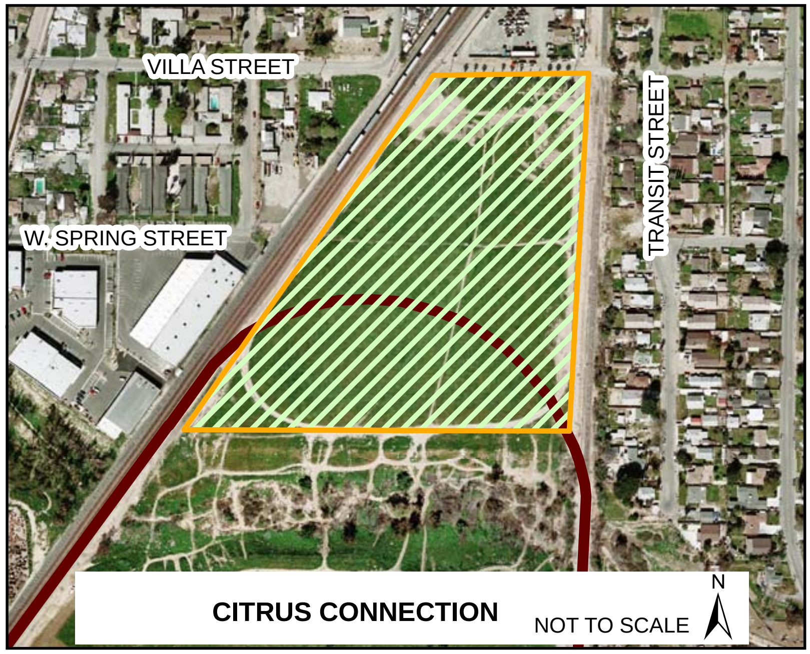

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | STEPHENS' KANGAROO RAT HABITATS AND RESERVES | FIGURE 4.4-2 |
| DRAWN: | 12/11/09 | | |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666SKratEIR.MXD | | | |

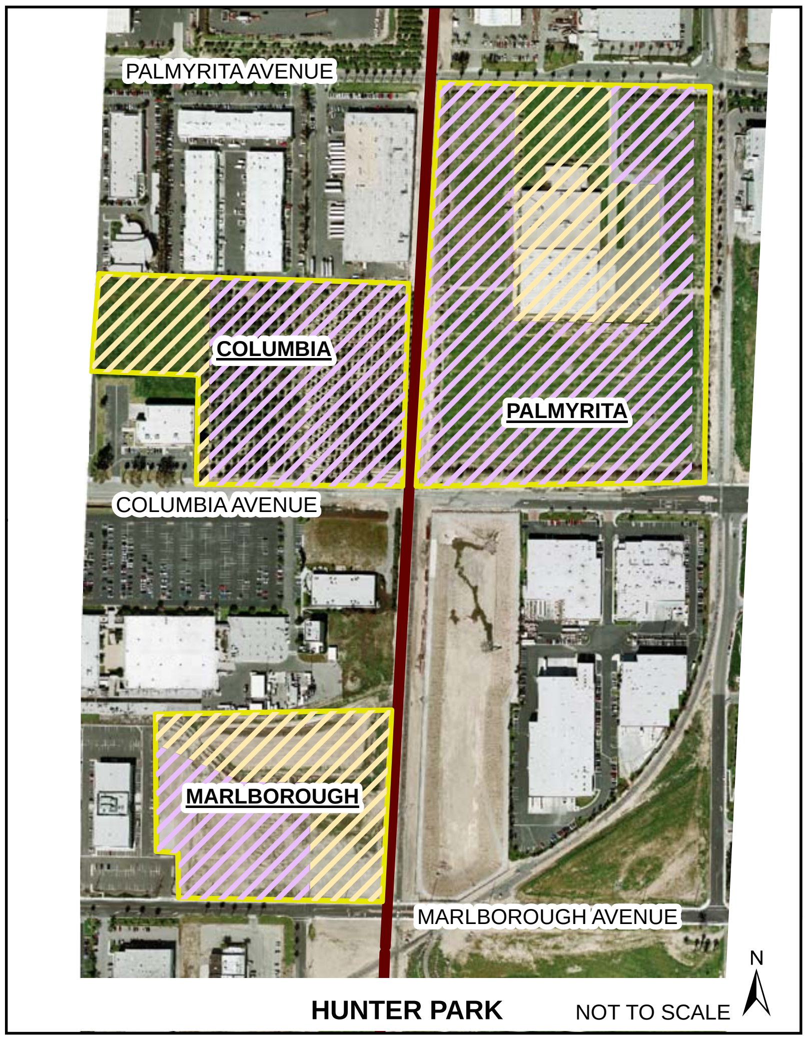



| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | HABITAT AND VEGETATION TYPES | FIGURE |
| DRAWN: 3/9/10 | | |
| DRAWN BY: JP | | 4.4-3 |
| CHECKED BY: RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666veg.MXD | | |




**KEY MAP FOR INSET AREAS**




## LEGEND

PVL ALIGNMENT

SITE BOUNDARY

CITRUS CONNECTION BOUNDARY

FIELD/CROPLANDS

GROVE/ORCHARD

DEVELOPED

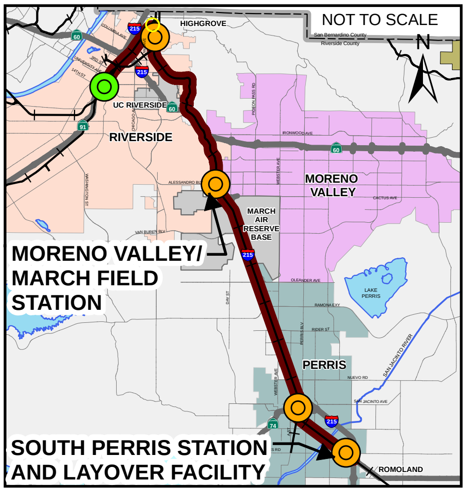
BASEMAP SOURCE: STV INCORPORATED 10-3-08
VEGETATION DATA SOURCE: RCTLMA COUNTYWIDE DATA, JULY 2009

| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 3/9/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: 92666veg_cit_hp.MXD | |

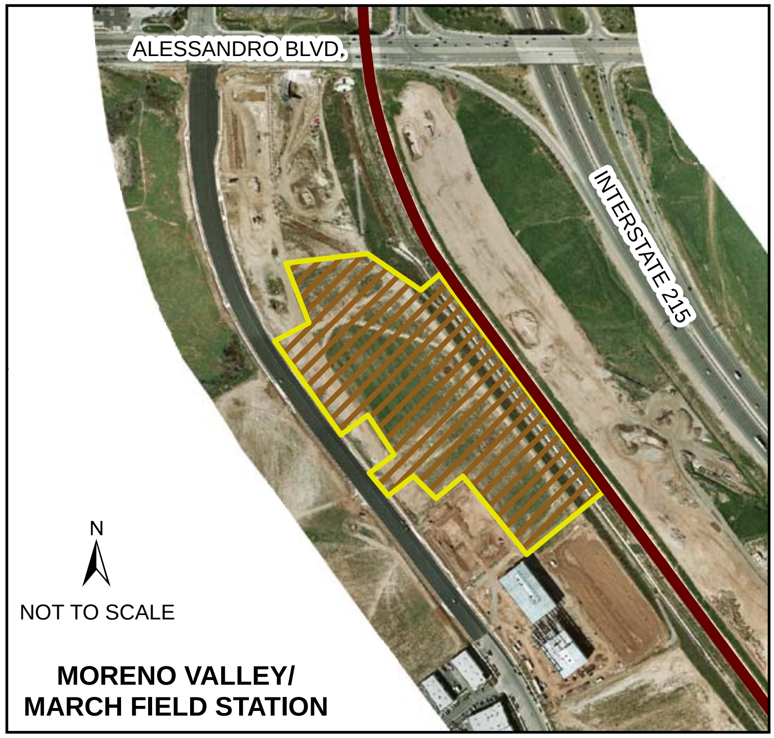
HABITAT AND VEGETATION TYPES AT STATION SITES

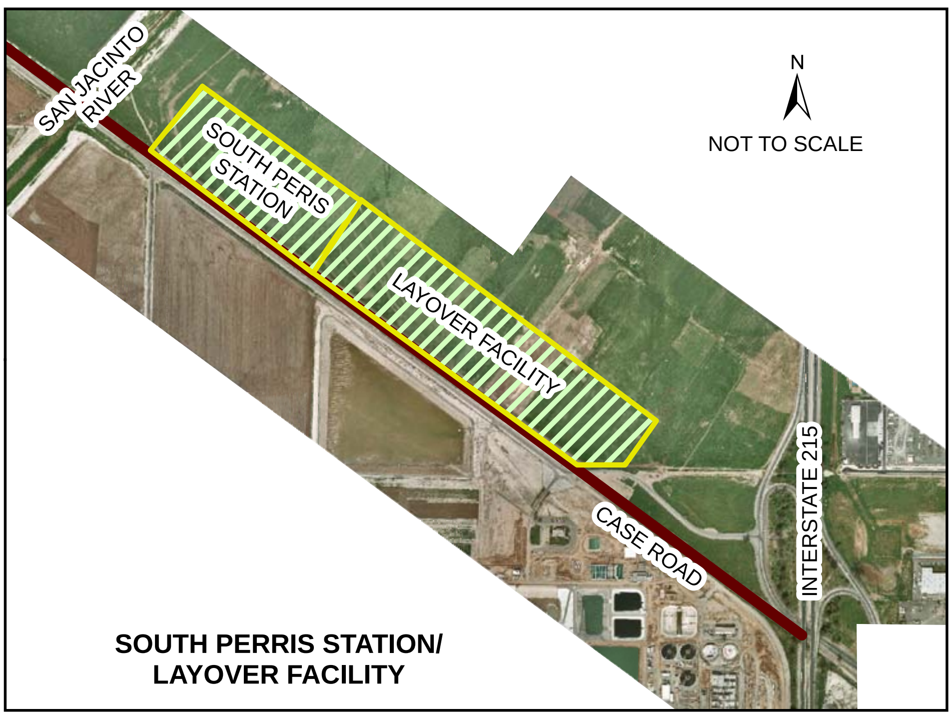
ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE 4.4-4




**KEY MAP FOR INSET AREAS**




## LEGEND

- PVL ALIGNMENT
- SITE BOUNDARY
- FIELD/CROPLANDS
- NON-NATIVE GRASSLAND

BASEMAP SOURCE: STV INCORPORATED 10-3-08
VEGETATION DATA SOURCE: RCTLMA COUNTYWIDE DATA, JULY 2009

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | HABITAT AND VEGETATION TYPES AT STATION SITES | FIGURE |
| DRAWN: | 3/9/10 | | 4.4-5 |
| DRAWN BY: | JP | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| CHECKED BY: | RM | | |
| FILE NAME: 92666veg_mvly_per.MXD | | | |

*SJBL Alignment*

The SJBL alignment is existing rail ROW and extends approximately 21 miles from the Citrus Connection to the Layover Facility located south of Perris. This ROW has been maintained by BNSF crews for approximately 100 years, and as a result is highly disturbed. The following provides a summary of habitat types both within the ROW and immediately adjacent to the ROW as described in the Habitat Assessment Report (Technical Report E):

- Citrus Connection to MP 1.00: The ROW is highly disturbed with hard compacted soil and occasional ornamental trees, including various species of palm. The area adjacent to the ROW is industrial/commercial west of the alignment and residential transitioning to industrial east of the ROW. There is no suitable habitat available for burrowing owl because of the disturbed nature of the ROW and adjacent areas.

- MP 1.00 to MP 2.00: Within the ROW for the first half of this section the ground conditions are highly disturbed and has hard pack soil. The areas adjacent to the ROW transition from industrial areas to more open uses varying from a large stormwater detention basin (east side of the ROW), with citrus orchards (west side of the ROW) to undeveloped area. The second half mile (south of Marlborough) the ROW expands with the area immediately adjacent to the tracks being disturbed and transitioning into non-native grasslands outside of the ROW. Nearing MP 2.00, there are residential areas near ROW boundary on both sides of the alignment. There is degraded habitat both within and adjacent to the ROW until the ROW expands. After the ROW expands there is higher quality burrowing owl habitat both within and adjacent to the ROW.

- MP 2.00 to MP 3.00: The ROW between MP 2.00 and MP 3.00 is highly disturbed with hard pack soil. The areas adjacent to the ROW are residential no available habitat for burrowing owl is present.

- MP 3.00 to MP 4.00: The ROW between MP 3.00 and approximately MP 3.50 is highly disturbed with hard pack soil. There is also a concrete drainage channel within the ROW through this area. After MP 3.50 the ROW enters Box Springs Mountain Reserve and the track is on an elevated berm and compacted dirt slopes away from the track on both sides to the ROW limits. The areas adjacent to the ROW are Box Springs Mountain Reserve on one side, or Islander Park on the other, therefore there is available habitat for burrowing owl, as well as coastal California gnatcatcher. It should also be noted that through this area are very small fragments of riparian vegetation centered on the drainage culverts. Additionally, there would be limited work on the tracks in this area, but there would be noise barriers installed to shield adjacent residents from the train noise. One of these walls would extend south of the last residence and is not anticipated to act as a barrier to wildlife use of the park areas.

- MP 4.00 to MP 5.00: The ROW expands again between MP 4.00 and MP 5.00. This is the distance of the Box Springs Mountain Reserve and beyond into the undeveloped land near Poarch Road. The area within the ROW is predominately sage scrub with occasional ornamental trees. West of the ROW is residential and east of the ROW is the Reserve land. There is potentially suitable habitat for burrowing owl, coastal California gnatcatcher, Southern California rufous-crowned sparrow, and Bell's sage sparrow.

- MP 5.00 to MP 6.00: The ROW contracts just south of the MP 5.00 and continues with this more contained ROW to beyond MP 6.00. Near the MP 5.00 area the soil is eroded near the tracks and the maintained area appears closer to the ballast rock. From MP 5.00 to approximately MP 5.50 paved roads and freeway on-ramp are located west of the alignment, and undeveloped land with dirt roads and a cellular communications tower are located east of the alignment. From approximately MP 5.50 to MP 6.00 the maintained area is very narrow with riparian habitat located west of the tracks and mixed sage scrub habitat located east of the tracks. The riparian area is potentially suitable habitat for southwestern willow flycatcher, and least Bells vireo. The sage scrub habitat is available for coastal California gnatcatcher, Southern California rufous-crowned sparrow, and Bell's sage sparrow. The PVL project would rehabilitate the existing track and replace culverts.

- MP 6.00 to MP 7.00: From MP 6.00 to approximately MP 6.25 the riparian area between the freeway and the ROW continues. East of the ROW there is sage scrub habitat and limited riparian habitat. At approximately MP 6.25 the PVL corridor passes under the I-215/SR-60. Below the bridges is concrete lined with no available habitat. Once south of the overpass the ROW widens and the soil is compacted and disturbed. The area includes scattered eucalyptus trees, and riparian vegetation associated with the drainage culverts. The area adjacent to the ROW north of the interstate underpass is undeveloped east of the alignment, and freeway corridor west of the alignment. South of the interstate underpass the area adjacent to the alignment to the west is industrial/commercial development and freeway corridor east of the alignment. Near the MP 7.00 area there is industrial/commercial development both east and west of the alignment. There is suitable burrowing owl habitat along this section of alignment as well as limited riparian areas at the culvert locations.

- MP 7.00 to MP 8.00: This area within the ROW is highly disturbed with hard pack soil and one concrete culvert under the track. The culvert connects two concrete v-ditches, east and west of the ROW. Both concrete v-ditches are heavily vegetated. The area adjacent to the ROW consists of industrial/commercial warehouses to the west and the I-215 corridor to the east. In many cases the warehouse and associated spaces are encroaching into the ROW. There is limited burrowing owl habitat available along this section of the SJBL.

- MP 8.00 to MP 9.00: This area within the ROW is disturbed non-native grassland. Starting at approximately MP 8.20 there is a concrete v-ditch west of the alignment that continues south until approximately MP 9.00. Outside of the ROW is the I-215 on the east and industrial/commercial development to the west. On the west side of the alignment, between the industrial/commercial development, are small areas of disturbed non-native grassland, suitable for burrowing owls.

- MP 9.00 to MP 10.00: This area within the ROW is disturbed habitat consisting of non-native grassland and highly compacted soil adjacent to the ballast rock supporting the tracks. The areas adjacent to the ROW are currently disturbed and do contain suitable burrowing owl habitat.

- MP 10.00 to MP 18.00: This area within the ROW is compacted soil with fragments of disturbed habitat. In addition, there are culverts that contain small, isolated, riparian areas that are not suitable habitat. The area east of the ROW is the I-215 and contains no available habitat. The area to the west of the ROW is highly disturbed with land use varying from industrial/commercial to disturbed with some large parcels being graded for construction. There are landscape trees scattered along the ROW boundary that may be suitable for nesting birds.

- MP 18.00 to MP 19.00: This area is within the city of Perris. The ROW is hard compacted soil, free of any vegetation with no available habitat. The areas adjacent to the ROW are residential with occasional landscape trees within the private yards.

- MP 19.00 to the end: This area starts at the south end of Perris and continues to the end of the proposed project. The ROW contains disturbed compacted soil near the ballast and transitions into non-native grasslands further away from the ballast. There are two bridges in this section, one that crosses the San Jacinto River and the second that crosses the San Jacinto River Overflow Channel. These bridges are currently constructed of timber and would be replaced as part of the project. The areas adjacent to the bridges are highly disturbed with no riparian habitat associated with the San Jacinto River and San Jacinto River Overflow Channel. It should also be noted that the river bed is used by trucks and all terrain vehicles to traverse area. There is no riparian vegetation present, or associated with the river channel or overflow channel; however, there are both U.S. Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) jurisdictional areas. The quantitative impact of these bridge replacements was also included in the jurisdictional area calculations.

Stations

The following provides a description of the vegetation and habitat types at the proposed station sites and shown in Figure 4.4-5.

*Hunter Park Station options*

Hunter Park Station would be located at one of three proximate sites: Palmyrita Avenue Station option, Columbia Avenue Station option, or Marlborough Avenue Station option.

- Palmyrita Avenue Station: This potential station site is located east of the existing railroad ROW and consists of highly disturbed land. A relatively new building has been built on a portion of this site and it appears that the site was graded during that construction.
- Columbia Avenue Station: The potential station site is located west of the ROW and is currently an active orange grove. There are small fragments of disturbed non-native grassland within the site, but no sensitive species habitat present.
- Marlborough Avenue Station: This potential station site is located west of the ROW and is currently highly disturbed by grading and the importation of fill material. There is no available habitat on this site.

*Moreno Valley/March Field Station*

This station site is located west of the alignment and is currently disturbed non-native grassland. This station site is part of another project, the Meridian Specific Plan. The Meridian Specific Plan has completed a project specific EIR. Impacts associated with this station site were anticipated in this EIR and the appropriate mitigation incorporated. The Meridian project is preparing the site and would transfer the site to the PVL project for construction.

*Downtown Perris Station*

The Downtown Perris station option is located in downtown Perris in a developed area with no available habitat.

*South Perris Station*

The proposed South Perris Station is planned to be located south of the San Jacinto River and west of the I-215. The station site would be located east of the alignment on land that is currently under agricultural production. There are small remnants of scrub habitat, but the area is highly disturbed from the rail operations and the agricultural operations.

*Layover Facility*

The Layover Facility would be located adjacent to the South Perris Station option on the east side of the alignment and west of the I-215. The site would be located on former agricultural land.

### *4.4.2 Regulatory Setting*

Federal Endangered Species Act (16 USC 1531-1544)

The Endangered Species Act (ESA) directs federal agencies to participate in endangered species conservation. The federal ESA provides protection for endangered and threatened species, and requires conservation of designated species' critical habitats. An "endangered" species is a species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become "endangered" in the foreseeable future without further protection. Other special status species include "proposed", "candidate", and "species of concern." Proposed species are those that have been officially proposed in the FR for listing as threatened or endangered. Candidate species are those for which sufficient information is available to propose listing as endangered or threatened. "Species of concern" are species for which not enough scientific information has been gathered to support a listing proposal, but still may be appropriate for listing in the future after further study. A "delisted" species is one whose population has reached its recovery goal is no longer in jeopardy.

The ESA is administered by the United States Fish & Wildlife Service (USFWS) and the National Marine Fisheries Services (NMFS). Under the ESA, it is prohibited to take, harm, or harass species listed as threatened or endangered by the USFWS. A permit for taking a federally listed threatened or endangered species may be obtained either through Section 7 consultation (where the proposed action requires approval of a federal agency) or Section 10(a) (i.e., where the proposed non-federal action requires development of a HCP). Both cases require consultation with the USFWS and/or NMFS, which ultimately issues a final opinion determining whether the federally listed species would be adversely impacted by a proposed project. Under Section 4(d), an alternative permitting approach can be written by the Secretary of the Interior for use with federally threatened species.

Fish and Wildlife Coordination Act (16 USC 661-667E)

The Fish and Wildlife Coordination Act (1934), authorized the Secretaries of Agriculture and Commerce to assist and cooperate with Federal and State agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, and to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. Amendments to the Act require consultation with the USFWS, NMFS, and State agencies responsible for fish and wildlife resources for all proposed federal undertakings and non-Federal actions needing a federal permit or license that would impound, divert, deepen, or otherwise control or modify a stream or water body; and to make mitigation and recommendations to the involved federal agency.

Migratory Bird Treaty Act (16 USC 703-712)

The Migratory Bird Treaty Act (MBTA) provides special protection for migratory families of birds (i.e., those avian species that winter south of the U.S. but breed within the U.S.) by regulating hunting and trade. The MBTA prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). "Take" includes any disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young). Such activity may be punishable by fines and/or imprisonment. The use of families as opposed to individual species within the Act means that numerous non-migratory birds are extended protection under the MTBA. Most nesting birds are covered by the MBTA.

The MSHCP Section 10(a) Permit does constitute a Special Purpose Permit under 50 CFR § 21.27, for the Take of Covered Species Adequately Conserved listed under FESA and which are also listed under the MBTA of 1918.

Executive Order 13112: Invasive Species

The purpose of this Executive Order (EO) is to prevent the introduction and control the spread of invasive plant and animal species. This law prohibits the Federal government from authorizing or funding of actions that may cause or promote the introduction and/or spread of invasive species unless the agency has determined that the action's benefits clearly outweigh potential harm caused by invasive species; and that all feasible and prudent measures would be taken to minimize risk of harm. This EO also requires federal agencies to consult with the Invasive Species Council, consistent with the Invasive Species Management Plan.

Natural Community Conservation Plan

The primary objective of the Natural Community Conservation Plan (NCCP) program of CDFG is to conserve natural communities at the ecosystem level and encourage cooperation between private and government interests. The plan identifies and provides for the regional or area wide protection and perpetuation of plants, animals, and their habitats, while allowing compatible land use and economic development. An NCCP focuses on the long-term stability of natural communities. The program is broader in its orientation and objectives than the California and federal ESAs, which focus on identifying and protecting individual species that have already significantly declined in number.

NCCPs are authorized by the State's NCCP Act of 1991, codified as §10 of Division 3 of the California Fish and Game Code (2800 *et seq*.). Approved NCCPs provide the basis for issuance of state authorizations for the take of species specifically identified in the plan, whether or not a species is listed as threatened or endangered, and may provide the basis for issuance of federal endangered species permits. A NCCP would be approved by the CDFG for implementation upon meeting the statutory standards for natural community conservation under Fish and Game Code 2820 *et seq*. and other applicable laws and regulations. It is important to note that the NCCP process must ensure consistency with the federal and state ESAs.

<u>Western Riverside County Multiple Species Habitat Conservation Plan</u>

The MSHCP is a comprehensive, multi-jurisdictional HCP focusing on conservation of species and their associated habitats in Western Riverside County. The MSHCP is a large, multi-jurisdictional habitat-planning effort with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The MSHCP is an element of RCIP to conserve open space, nature preserves and wildlife to be set aside in some areas. It is designed to protect 146 species and conserve over 500,000 acres in western Riverside County. RCTC is also a signatory on the MSHCP Implementing Agreement and a permittee under the Plan.

The MSHCP Plan Area encompasses approximately 1.26 million acres (1,966 square miles); it includes the unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, San Jacinto, and jurisdictional areas of Menifee and Wildomar. It covers multiple species and multiple habitats within a diverse landscape, from urban centers to undeveloped foothills and montane forests, all under multiple jurisdictions. It extends across many Bioregions as well, including the Santa Ana Mountains, Riverside Lowlands, San Jacinto Foothills, San Jacinto Mountains, Agua Tibia Mountains, Desert Transition, and San Bernardino Mountains. It would provide a coordinated MSHCP Conservation Area and implementation program to preserve biological diversity and maintain the region's quality of life.

The MSHCP serves as a HCP pursuant to Section 10(a)(1)(B) of the federal ESA of 1973, as well as the NCCP Act of 2001. The MSHCP is used to allow the participating jurisdictions to authorize "Take" of plant and wildlife species identified within the MSHCP area. The USFWS and CDFG have authority to regulate the take of Threatened, Endangered, and rare Species. Under the MSHCP, the USFWS and CDFG would grant "Take Authorization" for otherwise lawful actions, such as public and private development that may incidentally "take" or harm individual species or their habitat outside of the MSHCP Conservation Area, in exchange for the assembly and management of a coordinated MSHCP Conservation Area. It should be noted that compliance with the Plan provides full mitigation for all species and habitat impacts under CEQA.

The MSHCP identifies habitat generally by Core Areas and Linkages by which species could be expected to move from one area of conserved habitat to another. These areas comprise the habitat to which the MSHCP "criteria" are applied. These Criteria Area have been divided into cells or "Criteria Cells" for organizational and evaluation purposes. The descriptive breakdown of the separate criteria areas is comprised of a variety of existing and proposed Cores, Extensions of Existing Cores, Linkages, Constrained Linkages, and Non-contiguous Habitat Blocks. These specific areas are generally referred to as Cores and Linkages:

**Core:** A block of habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more Covered Species. Although a more typical definition is population-related and refers to a single species, in the MSHCP this term is Habitat-related because of the multi-species nature of the MSHCP Plan.

**Extension of Existing Core:** A block of habitat contiguous with an existing Core Area which serves to provide additional habitat for species in the adjacent existing Core and to reduce an exposed edge.

**Non-contiguous Habitat Block:** A block of habitat not connected to other habitat areas via a Linkage or Constrained Linkage.

**Linkage**: A connection between Core Areas with adequate size, configuration and vegetation characteristics to generally provide for "Live-In" Habitat and/or provide for genetic flow for identified Planning Species. Areas identified as Linkages in MSHCP may provide movement Habitat but not Live-In Habitat for some species, thereby functioning more as movement corridors. It is expected that every Linkage would provide Live-In Habitat for at least one species.

**Constrained Linkage:** A constricted connection expected to provide for movement of identified Planning Species between Core Areas, where options for assembly of the connection are limited due to existing patterns of use.

<u>Executive Order 11990: Protection of Wetlands</u>

EO 11990 directs that federal agencies provide leadership and take action to minimize destruction, loss, or degradation of wetlands associated with: (1) acquisition, management, and disposition of federal land and facilities; (2) federally funded or assisted construction and improvement; or, (3) federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

<u>Clean Water Act (33 USC 1251-1376)</u>

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. There are numerous sections of the CWA that provide guidance related to implementation of this type of project.

Section 401 requires that an applicant for a Federal license or permit that allows activities resulting in discharge to jurisdictional waters (including wetland/riparian areas) of the United States must obtain a state water quality certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Board's (RWQCB) administer the certification program in California.

Section 402 is regulated by the USEPA and establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into waters of the United States. It establishes a framework for regulating municipal and industrial stormwater discharges under the National

Pollutant Discharge Elimination System (NPDES) program. The RWQCBs also administer the NPDES permits for construction activities and operations.

Section 404 establishes a permit program administered by the USACE regulating the discharge of dredge or fill material into waters of the United States, including wetlands, and jurisdictional non-wetland waters. The USACE has permit authority derived from Section 404 of the CWA (33 CFR 320-330). The permit review process includes an assessment of potential adverse impacts to wetlands and streambed habitats and determination of any required mitigation measures. As a condition of the 404 permitting process, a 401 Water Quality Certification or waiver is required from the RWQCB. Where federally-listed species may be affected, a Section 7 consultation with the USFWS under the federal ESA is required. (Since there maybe federal involvement with the USFWS consultation, compliance with Section 106 of the National Historic Preservation Act (NHPA) is also required).

California Fish and Game Code, 1600 et. seq.

The CDFG Code 1600 requires that any person, state or local government agency or public utility proposing a project that may result in impacting a river, stream, or lake to notify the CDFG. In addition to protection of state listed species under CESA, the agency also has surface water jurisdiction to protect wildlife values and native plant resources associated with waters of the State. If CDFG determines that the project may adversely affect existing fish and wildlife resources, a Section 1602 Streambed Alteration Agreement may be required. Required conditions within the Streambed Alteration Agreement are intended to address potentially significant adverse impacts within CDFG jurisdictional limits.

### *4.4.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Biological Resources is defined by:

1. *Does the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS*

2. *Does the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFG or USFWS*

3. *Does the project have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means*

4. *Does the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites*

5. *Does the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance*

6. *Does the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan*

### *4.4.4 Project Impacts*

Project specific impacts can occur in two forms: direct and indirect. Direct impacts are considered to be those that involve the loss, modification, or disturbance of plant communities, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or wildlife, which may directly affect regional population numbers of a species or result in the physical isolation of populations, thereby reducing genetic diversity and population stability.

Indirect impacts can occur although areas of habitat are not directly removed by project development. Indirect impacts can involve the effects of increases in ambient levels of noise or light, unnatural predators (i.e. domestic cats and other non-native animals), competition with exotic plants and animals, and increased human disturbance such as hiking, bicycling or illegal dumping. Indirect impacts may be associated with the subsequent day-to-day activities associated with project build-out, such as increased traffic use, permanent concrete barrier walls or chain-link fences, exotic ornamental plantings that provide a local source of seed, etc., which may be both short-term and long-term in duration. These impacts are commonly referred to as “edge effects” and may result in a slow replacement of native plants by exotics, changes in the behavioral patterns of wildlife, and reduced wildlife diversity and abundance in existing habitats adjacent to project sites.

As stated in the project description, no equipment staging will take place within 500 feet of environmentally sensitive areas and will only occur in previously disturbed areas.

***Does the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS***

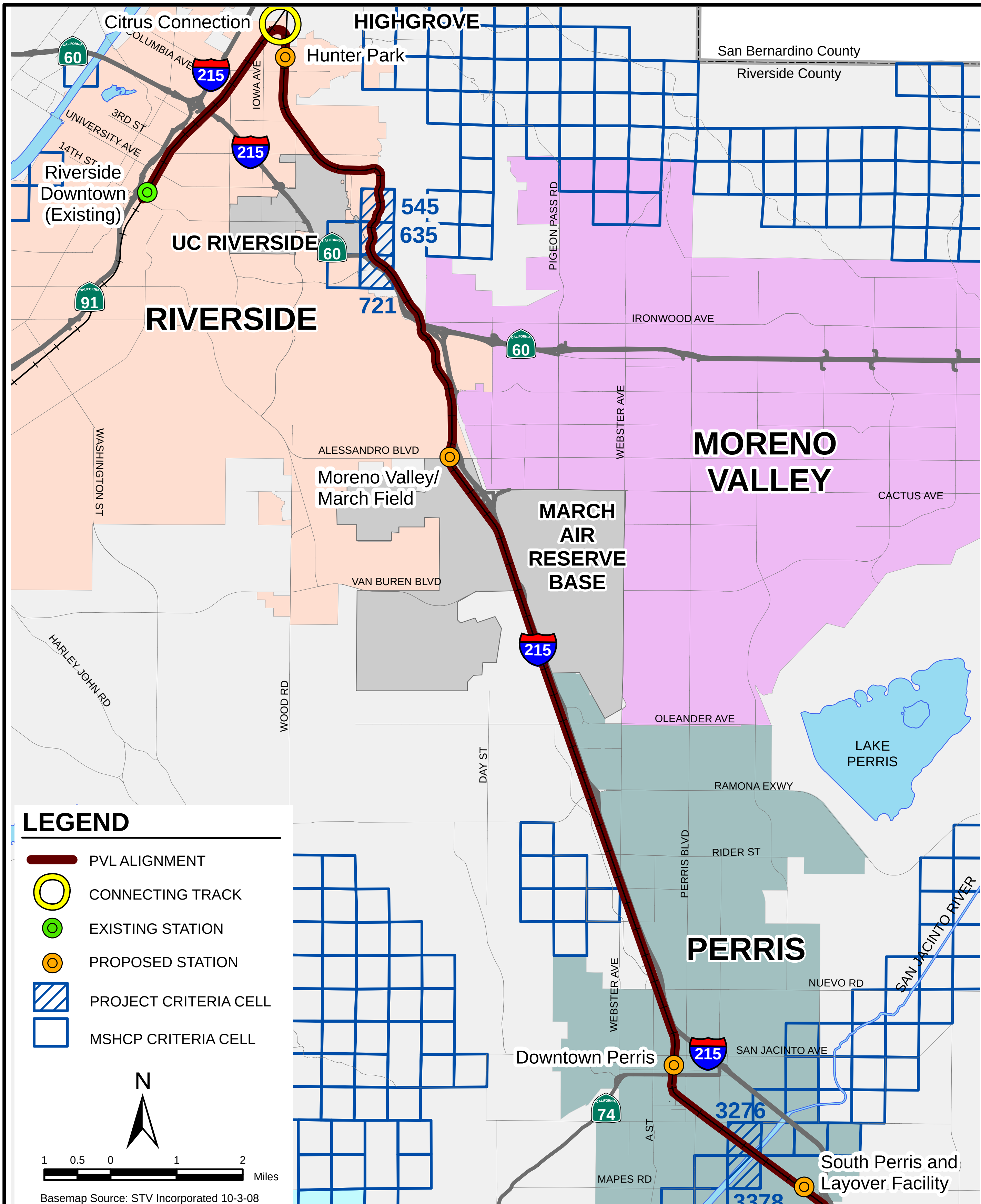
<u>Sensitive Plant Species</u>

*Direct Impacts*

During the initial evaluation of resources for the preparation of the MSHCP, the potential for Narrow Endemic Plant Species were identified within the San Jacinto River. However, during the dry season, the San Jacinto River is used as a four wheel drive access road from east of the SJBL, under the ROW, under Case Road, and travels to the west. This conflicting use of the river channel combined with the ROW maintenance activities, caused the areas immediately adjacent to the bridges to be highly disturbed.

Both the BNSF and SJBL are highly disturbed and no sensitive plant species were identified during habitat evaluations. The existing SJBL intersects MSHCP criteria cells, 545, 635, 721, 3276, and 3378 as shown on Figure 4.4-6. Cells 545, 635, and 721 are part of Proposed Constrained Linkage 7, which is considered a wildlife corridor south of Box Springs Park and north of the freeway. However, cells 3276 and 3378 are within Proposed Constrained Linkage 19, which is located at the San Jacinto River and the San Jacinto River Overflow Channel.

Proposed Constrained Linkage 19, which in addition to important consideration as a wildlife corridor is identified as having a potential for Narrow Endemic Plant Species. Because the MSHCP identifies the area as having a potential for Narrow Endemic Plant Species, a habitat evaluation is required as well as bloom period surveys if appropriate habitat is present. The bloom period for Narrow Endemic Plants ranges from spring through late summer. Note; an endemic species is found in a limited geographic area but does not imply rarity, rather geographic distribution (Mitigation measure BR-8).

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| PROJECT NO. | 92666 |
| DRAWN: | 3/8/10 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666MSCHP2.MXD |

MSHCP CRITERIA CELLS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
4.4-6

*Indirect Impacts*

There are no anticipated indirect impacts to sensitive plant species as a result of the proposed project.

Sensitive Wildlife Species

*Direct Impacts*

Riverside County identifies biological resources in the general area through the MSHCP and the SKR HCP. As previously stated, the PVL project is outside the designated SKR Core Reserve areas but is within the fee area. Therefore, the appropriate fee is required as mitigation to be paid in order to reduce the potential significant impact to less than significant with mitigation (Mitigation measure 15).

The Western spadefoot toad has the potential to inhabit the San Jacinto River area, near the SJBL. The project is proposing to replace the San Jacinto River Bridge and the San Jacinto River Bridge Overflow Channel. In order to replace the two bridges, there will need to be work conducted from both within the two channels as well adjacent to the channels. Therefore there is a potential significant impact to the western spadefoot toad and mitigation is required to reduce the potential significant impact to less than significant with mitigation incorporated (See Mitigation measure BR-9).

*Indirect Impacts*

Through the Box Springs Mountain Reserve, and MSHCP criteria cells 545, 635, and 721, the corridor will stay in the pre-project configuration with a single rail track. Only rehabilitation work and minor culvert improvements are anticipated within this area. The culvert work proposed for the area is anticipated to be minor (e.g. wing walls) and related to reducing the potential for sediment erosion near the culvert outlets. This culvert work is anticipated to be permitted by the USACE, CDFG, and the RWQCB (See Mitigation measure BR-17).

There are a variety of habitat types adjacent to the ROW within the area. The habitat types include sage scrub habitat as well as riparian habitat. Based on the potential for sensitive birds to be associated with these habitats, it is assumed that the following birds will inhabit the area; coastal California gnatcatcher, southwestern willow flycatcher and the least Bell's vireo. Therefore there is a potential to indirectly impact these birds and mitigation is required to reduce the potential significant impact to less than significant with mitigation incorporated (See Mitigation measures 12, 13, 14, 16, 17).

Because of the disturbed nature of the ROW and the ongoing maintenance activities of the active rail corridors, direct impacts to burrowing owls is not anticipated. However, there is available nesting habitat for the burrowing owls adjacent to the existing ROW's. Protocol surveys for burrowing owl both within the corridor and in adjacent areas determined that there are no owls present. Since there is a potential to indirectly impact burrowing owls, mitigation is required to reduce the potential significant impact to less than significant with mitigation incorporated (See Mitigation measure BR-10).

Raptor Habitat, Nesting, Foraging

Within the existing BNSF and PVL rail corridors regular maintenance occurs that greatly limits the growth of any vegetation including non-native grasslands, which would be considered foraging habitat. In the area of the Citrus Connection, the undeveloped land is very disturbed from the proposed development activities on the site. There are non-native grasslands in this area, but the project would only impact a small swath of non-native grassland, less than an acre, with the installation of the ballast rock, ties, and rail. This impact would not be considered significant and therefore no mitigation is required.

Further south, along the I-215 corridor, there are a series of large billboards located within the ROW. Within many of these billboards are raptor nests. It is assumed that the raptors from these nests utilize the larger undeveloped areas located off of the existing ROW for foraging. These billboards are planned to be relocated within the ROW, a few feet closer to the edge of the ROW. There are potential impacts to these raptors and nests and therefore mitigation is required (Mitigation measure BR-11).

The station locations and Layover Facility are proposed on land that is either highly disturbed (Palmyrita, Marlborough), developed (Downtown Perris), or disturbed land (Columbia, South Perris, and the Layover Facility). Since the areas are already disturbed there is a minor impact to raptor foraging habitat but is a less than significant impact therefore no mitigation is required.

***Does the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFG or USFWS***

As identified previously there are sensitive habitats, associated with the sensitive species identified previously that are adjacent to the existing SJBL. In addition to the areas of adjacent sensitive habitat, there are very small, dislocated areas of riparian habitat, or jurisdictional areas, within the corridor that are associated with the culverts that pass beneath the track bed. These culverts allow stormwater to flow from one side of the track to the other. The project impacts to these small areas of vegetation is discussed further below.

***Does the project have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means***

The project proposes to extend or replace various culverts on the SJBL ROW. Additionally, the project is proposing to replace the existing bridges at the San Jacinto River and the San Jacinto River Overflow Channel.

During the jurisdictional evaluation of the culverts and bridge locations there was a 50-foot study area identified surrounding each of the culverts evaluated as identified in the Jurisdictional Determination Report (Technical Report F). Within this study area there were federally protected wetlands identified within the ROW at only one work location.

At the remaining work areas there were jurisdictional impacts identified for both USACE and CDFG. These impacts would be both temporary and permanent impacts as identified in Table

4.4-3. The permanent impacts could occur in areas where new culverts would be placed and temporary impacts would be related to areas affected by construction at the ends of the culverts and at the bridge locations.

**Table 4.4-3**
**Jurisdictional Areas of Impact**

| Jurisdiction | Impacts (Temporary) | Impacts (Permanent) |
|---|---|---|
| USACE | 0.145~~037~~ acres | 0.038~~22~~ acres |
| CDFG | 0.335~~061~~ acres | 0.085~~039~~ acres |

Mitigation is required of impacts to jurisdictional areas to reduce the potential significant impact to less than significant with mitigation incorporated.

***Does the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites***

The project is not located in an area where native, or migratory, fish are located and therefore fish would not be impacted by the project. However, the MSHCP does identify Cores and Linkages for wildlife species within western Riverside County. The Linkages are considered wildlife corridors connecting the identified Core areas. Since the SJBL is located within Proposed Constrained Linkage 7, and Proposed Constrained Linkage 19, there is a concern that the project has a potential to impact the continued use of these wildlife corridors.

Proposed Constrained Linkage 7 is located south of the Box Springs Mountain Reserve area. The only proposed project work in this area is the rehabilitation of the existing track, and minor improvements to existing culverts, with no new improvements proposed. The existing track configuration, in this area is on a raised track bed, and has not changed in the preceding 100 years since the SJBL was initially constructed. This area is also located near the I-216/60. The species identified that use this Linkage are bird species and bobcat. It is expected that these species would continue to cross the ROW as they have done previously when the PVL is in place. Based on the project improvements proposed for this area, there is no impact to the continued use of this corridor by the identified species, and therefore no mitigation is necessary.

It should be noted that there is mitigation proposed within the noise section to extend a noise barrier, within the ROW, from Mount Vernon Avenue towards Box Springs Mountain Reserve area. This noise barrier is proposed to reduce the train noise impacts to the residential homes adjacent to the Reserve boundary, north of the ROW. If this mitigation is carried forward, it is not anticipated to impact the continued use of the Linkage 7 because the noise barrier would be located adjacent to the residential homes and not impact the open areas of the Reserve.

There is also a landscape wall proposed for the Hyatt School area. Hyatt School is located within Linkage 7 and concurrently has fencing separating the school property from the ROW. The landscape wall would replace this fence and therefore not create a new impediment to the Linkage.

Proposed Constrained Linkage 19 is located at the San Jacinto River and the San Jacinto River Overflow Channel area. The proposed project work in this area is the replacement of the two rail bridges. The replacement bridges are designed to allow the same volume of water beneath them and would therefore continue to allow for wildlife movement under the existing bridges when the water is not present. It should also be noted that this project is not making any changes outside of the existing ROW, and therefore the existing Case Road Bridge is not anticipated to change as a result of this project.

Bridge replacement will require construction equipment to work adjacent to and within the existing channels. This equipment will be removed from the channels at the conclusion of every work day. It is expected that night time wildlife travel in the river channel can continue unimpeded both during and after construction. Additionally, it should be noted that there is no ROW fencing in this area so wildlife may continue to cross the ROW without physical barriers. Once construction is complete the new bridges will have greater clearance underneath than the existing and therefore have less impediments within the Linkage area.

There will be minor short-term impacts to one Linkage area (#19), but the impacts are not considered significant because of the short duration and therefore no mitigation is proposed.

***Does the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance***

The County of Riverside, City of Riverside, nor the City of Perris have local policies or ordinances in addition to the MSHCP. No impact is identified for this issue area.

***Does the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan***

The project area is within the MSHCP for western Riverside County. RCTC is legally required to comply with the provisions of the plan. The plan requires that all projects submit a Joint Projects Review application to the Riverside Conservation Authority (RCA) for review and approval. As part of the application the project is expected to show consistency with the various provisions of the MSHCP. The Consistency Determination is expected to show that the project is consistent with both the individual criteria cell provisions of the MSHCP, as well as the overall MSCHP sections for Riparian/Riverine and Urban/Wildlands Interference. The Consistency Determination also requires completed Narrow Endemic Plant survey's prior to the application being deemed complete. The appropriate season for conducting the surveys is late spring into the summer months, depending on rainfall. These surveys are currently underway and when completed will be submitted with the Joint Projects Review materials.

### *4.4.5 Mitigation Measures*

RCTC, as a permittee for the MSHCP, will comply with the requirements outlined in the MSHCP including the need for a 30-day Pre-Construction Burrowing Owl Survey.

- BR-1: ~~A~~ The project biologist ~~will~~ shall prepare and conduct ~~a~~ pre-construction training ~~session~~ for project personnel prior to any ~~grading/construction~~ ground disturbing activities. At a minimum, the training ~~will~~ shall include a description of the target species of concern, its habitats, the general provisions of the ESA and the MSHCP, the need to adhere to the provision of the MSHCP, the penalties associated with violating the provisions of the ESA, the general measures that are being implemented to conserve target species of concern as they relate to the project, any provisions for wildlife movement, and the access routes to and from project site boundaries within which the project activities must be accomplished.

- BR-2: Equipment storage, fueling and staging areas ~~will~~ shall be located to minimize the risks of direct drainage into riparian areas or other environmentally sensitive habitats. The project specific SWPPP ~~will~~ shall identify appropriate construction related BMPs (such as drip pans, straw wattles, and silt fence) to control anticipated pollutants (oils, grease, etc.).

- BR-3: Stockpiling of materials ~~will~~ shall be limited to disturbed areas without native vegetation, areas to be impacted by project development or in non-sensitive habitats. These staging areas ~~will~~ shall be approved by the project biologist, and shall be located more than 500 feet from environmentally sensitive areas.

- BR-4: "No-fueling zones" ~~will~~ shall be established ~~within a minimum of~~at least 10 meters (33 feet) from drainages and fire sensitive areas.

- BR-5: The ~~qualified~~ project biologist ~~will~~ shall monitor construction activities at a minimum of three days per week throughout the duration of the project to ~~assess if practicable~~ensure mitigation measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint. Construction monitoring reports ~~will~~ shall be completed ~~with applicable~~ describing field conditions and construction activities. The project biologist ~~will~~ shall be empowered to halt work activity if necessary to confer with RCTC ~~staff~~ to ensure the proper implementation of species habitat and habitat protection measures.

- BR-6: To avoid attracting predators that may prey upon protected species, the project site ~~will~~ shall be kept clean of trash and debris. Food related trash items ~~will~~ shall be ~~enclosed~~ disposed of in ~~a~~ sealed containers and removed from the site with regular trash removal, at least weekly. Pets of project personnel ~~will~~ shall not be allowed on site.

- BR-7: If dead or injured listed species are located, initial notification must be made within three working days, in writing to the USFWS Division of Law Enforcement in Torrance California, and by telephone and in writing to the applicable jurisdiction, Carlsbad Field Office of the USFWS, and the CDFG.

- BR-8: Narrow Endemic Plants have the potential to occur in the areas near the San Jacinto River. If Narrow Endemic Plants are identified 90% of the population ~~will~~ shall be preserved, as required in the MSHCP.

- BR-9: There is a potential to impact western spadefoot toads with the work on the San Jacinto River Bridge and Overflow Channel Bridge. A pre-construction survey for western spadefoot toads ~~will~~ shall be conducted within 30 days prior to site disturbance to determine if western spadefoot toads are present within the designated construction area. Should western spadefoot toads be identified within the construction area, the project biologist shall prepare a relocation ~~an~~ program that shall be approved by RCA prior to implementation~~mitigation program will be implemented~~.

- BR-10: The MSHCP requires both protocol surveys and preconstruction surveys for burrowing owls. ~~If owls are identified during the preconstruction survey, the appropriate action will be determined. The appropriate action could include avoidance and passive or active relocation efforts~~. Pre-construction surveys shall be conducted within 30 days prior to ground disturbance to avoid direct take. If owls are found to be present, the following measures will be implemented: prior to burrowing owl nesting season, passive relocation will occur and active burrows will be destroyed; after burrows are destroyed, artificial burrows will be created in suitable habitat that is contiguous with the foraging habitat of affected owls; a monitoring plan will be implemented to monitor the success of the mitigation program.

- BR-11: If nests are identified at the billboards located on the I-215 corridor, then a ~~qualified~~ project biologist ~~must~~ shall determine if the nests are active. If the biologist determines a nest to be active, appropriate buffers ~~will~~ shall be used until the birds have fledged and the nest ~~will~~ shall be removed with the approval of regulatory agencies.

- BR-12: There is a potential for impacts to southwestern willow flycatchers in the southern area of the Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be completed outside the bird breeding season (~~end of April to early to early September~~ May 15th to July 17th) (SAWA, 2004 ~~2009~~).

- BR-13: There is a potential for impacts to least Bell's vireo in the southern area of Box Springs Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be completed outside the bird breeding season (~~end of March to the end of September~~ April 10th to July 31st) (SAWA, 2004~~2009~~).

- BR-14: The project is within the SKR Fee area. RCTC ~~will~~ shall pay~~,~~ $500 per acre to the SKR ~~fund managed by Riverside Habitat Conservation Agency, the required $500 per acre fee~~ for ~~developing~~ development outside the existing right-of-way. This fee shall be paid at the time of the grading permit submittal. The fee will include sites for the Citrus Connection, ~~the~~ Hunter Park Station, ~~Downtown Perris Station,~~ South Perris Station and Layover Facility (approximately 65 acres).

- BR-15: There is a potential for impacts to California horned lark in the area of the South Perris Station ~~option~~ and the Layover Facility if the agricultural fields are allowed to fallow. To avoid potential impacts to nesting birds, the ground preparation work ~~will~~ shall be conducted outside of the bird nesting season (~~March to July~~March 1st to July 31st) (County of Santa Barbara, 2009) and maintained to ensure that no birds then use the area for nesting prior to construction.

- BR-16: There is a potential for impacts to the coastal California gnatcatcher within the Box Springs Canyon Reserve. To avoid potential impacts to nesting birds, culvert work proposed for this area ~~will~~ shall be completed outside the bird breeding season (~~mid February to mid September~~ February 15th to August 30th) (SAWA, 2004 ~~2009~~).

- BR-17: ~~Jurisdictional areas associated with the replacement of culverts would result in impacts to habitat within both USACE and CDFG jurisdictional areas.~~ Prior to any construction ~~these~~ impacts ~~would require~~ to jurisdictional areas, RCTC shall obtain permit approval from the USACE, CDFG and the RWQCB. The mitigation for jurisdictional area impacts will be to purchase mitigation credits for permanent impacts at a 1:1 ratio (total of 0.085 acres) from a local mitigation bank. The temporary impacts, 0.335 acres, will be mitigated by restoration/enhancement on land owned by RCTC near or adjacent to the project area. ~~the Santa Ana River Mitigation Bank.~~ ~~The mitigation ratios are finalized by the USACE and CDFG during permitting for the project. The permitting application is not deemed complete until the CEQA document is adopted by RCTC. Therefore, the final mitigation ratios are not determined until after the CEQA is complete. The appropriate ratio will be determined during permit negotiations.~~

### *4.4.6 Mitigation Summary*

The biological mitigation measures identified protect biological resources through a combination of education, avoidance, and when absolutely necessary habitat replacement. The education provisions are directed to the contractor and construction personnel so that there is an awareness of potential sensitive resources in the project area, federal, state, and local regulations regarding sensitive resources, and the appropriate actions and notifications if an unexpected biological resource is encountered.

Avoidance of sensitive resources is accomplished through appropriate construction scheduling. The main objective is to avoid nesting and fledging birds so that reproduction can be successful, as well as achieve compliance with the MBTA. In compliance with the MSHCP, the project biologist will evaluate specific construction segments 30 days prior to scheduled work to identify areas where birds are nesting. Should nesting birds be identified in or adjacent to identified work areas, then the project biologist will determine the appropriate avoidance measures.

Additionally, RCA, as the administrator of the MSCHP, has found the project to be consistent with the provisions of the MSHCP through the acceptance of the Consistency Analysis.

~~Habitat replacement is necessary when permanent impacts to habitat are unavoidable. The habitat impacted by this project is related to the culvert improvement work along the project corridor. Potentially jurisdictional riparian habitat has developed over the years because of local drainage being focused by the culverts. Since these areas are fragmented and not connected to either larger habitat areas, or part of a natural riparian system, the ecological value is low. The regulatory agencies require appropriate mitigation for jurisdiction areas prior to issuing permits for the project.~~

## 4.5 CULTURAL RESOURCES

This section provides a discussion of cultural and paleontological resources within the PVL corridor, describes the identified resources, analyzes the potential impacts to those resources, and provides mitigation measures to reduce, avoid, or minimize potential impacts.

Cultural resources are archaeological, traditional, and built environment buildings, structures, objects, districts, and sites that are significant to the history of the United States (16 USC 470). Cultural resources can generally be broken up into two time periods: prehistoric and historic. Prehistoric resources were created by humans who lived in a time before the advent of writing. Historic resources were created by humans who lived after the advent of writing. In the United States, Native American artifacts that were created before the appearance of Europeans are considered prehistoric resources. Adverse impacts may occur through the removal, alteration, or addition of important cultural resources.

Paleontological resources are fossilized remains, traces, or imprints of once-living organisms preserved in rocks and sediments within the earth's crust that provide information about the history of life on earth. These fossils can include remains such as bones, teeth, shells, wood, and footprints. (16 USC 470).

Unless otherwise referenced, the information in this section has been adapted from the *Archaeological Resources Report for the Perris Valley Rail Line Project, Riverside County, California* (AE, 2008), the *Significance Assessment and Determination of Effects to Historical Resources Along the Perris Valley Commuter Rail Line* (AE, 2009), and the *Supplement to Archaeological Resources Report for the Perris Valley Rail Line Project, Riverside County, California* (AE, 2009).

### *4.5.1 Environmental Setting*

<u>Vegetation, Climate, and Geology</u>

Located in western Riverside County, the PVL corridor runs through the Perris and Moreno valleys, as well as the Santa Ana River Valley.

The primary drainage in the Perris and Moreno valleys is the San Jacinto River, which starts in the San Jacinto Mountains and flows northwesterly through the San Jacinto and Perris valleys and then to the west and southwest through Railroad Canyon until it empties into Canyon Lake and eventually Lake Elsinore. Levees built between 1919 and 1939 altered the course of the river, shifting it as much as a mile south of its historical course. Prior to historical hydrological modifications, the San Jacinto River flowed perennially only in the eastern portion of the valley.

Climate, vegetation, and landscape of the inland southern California region have fluctuated between wet and cool conditions and dry and hot conditions over the last 12,000 years, the period of confirmed human occupation in California. In prehistoric times, depending on elevation and climate, various plant species were available from early spring until winter, and the leaves, stems, seeds, fruits, and tubers from many of these plant species formed an important subsistence base for the Native American inhabitants of the project area. Herbivores tolerant of sparse vegetation cover were present, as well as carnivores and omnivores preying upon the abundant rodents.

The PVL corridor lies near the northern end of the Peninsular Ranges Province within the central part of the Perris block, a relatively stable area located between the Elsinore and San Jacinto fault zones. The land around the PVL corridor is primarily underlain by Cretaceous plutonic rocks that are part of the Peninsular Range Batholith (Morton and Cox, 2001).

The PVL corridor traverses three main geologic units. Young alluvial and valley deposits are present in the northern and southern segments of the PVL corridor (Morton, 2003; Morton and Cox, 2001). Older alluvial fan deposits overlay most of the PVL corridor from the I-215/SR-60 interchange to south of the city of Perris, and the east side of the city of Riverside in the area near UCR. Cretaceous age, tonalite bedrock underlies the alluvium in the region and is exposed in outcrops in the Box Springs Mountains and the hills west of the PVL corridor near the city of Perris.

Additionally, artificial fill is present along the entire length of the PVL corridor that is associated with the construction of the existing railway. The artificial fill soil within the PVL corridor is generally less than a few feet thick, but was observed to be up to approximately ten feet thick (approximately one-mile north of the proposed Moreno Valley/March Field Station option).

Older alluvium fan deposits found elsewhere in Riverside County and southern California have been reported to contain locally abundant and scientifically significant vertebrate, plant fossils, and other paleontological remains (Pajak et al., 1996). Because of the high potential for older alluvium fan deposits to contain paleontological resources, it is considered to have high paleontological sensitivity.

<u>Prehistoric Resources</u>

The prehistoric period is characterized by Native American occupation of the inland valleys of lower southern California and can be divided into six cultural periods: Early Archaic, Middle Archaic, Late Archaic, Saratoga Springs, Late Prehistoric, and Protohistoric.

*Early Archaic (ca. 9500-7000 B.P.)*

Early Archaic archaeological sites documented within the vicinity of the project area are rare, most likely due to the dry conditions within the interior valley areas. It has been hypothesized that prehistoric inhabitants traveled through the area in small, mobile groups, carrying easily portable tool kits in order to gather critical resources. Most likely they traveled seasonally and stayed close to the few reliable, drought-resistant water sources such as Lake Elsinore, Mystic Lake, and possibly Cajalco Basin.

*Middle Archaic Period (ca. 7000-4000 B.P.)*

This time period is also described as the "Milling Stone Horizon" because of the preponderance of milling tools uncovered in archaeological excavations. It is marked by the technological advancements of grinding seeds to make flour, and possibly the first use of marine resources, such as shellfish and marine mammals. Crude hammerstones, stone tools, large projectile points (arrowheads), beads, and charmstones were also all uncovered during this period.

*Late Archaic Period (ca. 4000-1500 B.P.)*

The Little Pluvial, a period of increased moisture in the region, allowed the prehistoric inhabitants to flourish during the Late Archaic Period. Trash and refuse deposits suggest that seasonal encampments were used for longer periods of time and that the prehistoric inhabitants were widening their food sources. The technological advancement of the mortar and pestle may indicate the use of acorns, an important storable food source. Also, hunting presumably gained importance as well, as indicated by the abundance of blades, projectile points, and terrestrial and aquatic mammal bones.

*Saratoga Springs Period (ca. 1500-750 B.P.)*

During the Saratoga Springs Period, the climate became warm and dry again. Surprisingly, however, this inhospitable climate did not seem to have a notable effect on the inhabitants. Plant processing technology made plant foods the primary food source, but inhabitants also added more animals to their diet. The most abundant evidence of trade also occurs during this time, suggesting that exchange was another mechanism for dealing with the climate change.

*Late Prehistoric Period (ca. 750-410 B.P.)*

A moist climate returned to this area and the inhabitants returned to a lifestyle similar to that of the Late Archaic Period. Evidence of hearth features and rock art suggest that encampments were occupied on a year-round basis. The amount of projectile points increased while mortars and pestles decreased, indicating that hunting began to play a larger role as well.

*Protohistoric Period (ca. 410-180 B.P.)*

The bow and arrow was developed during the Protohistoric Period, which increased hunting efficiency, and there was a renewed abundance of mortars and pestles. The most striking change in material culture during this time is the local manufacture of ceramic vessels and ceramic smoking pipes. Although pottery was known in the Colorado Desert as long ago as 800 B.P., ceramic technology in the project area appears to date to approximately 350 B.P. Late in this period some European trade goods (i.e. glass trade beads) were also added to the previous cultural assemblages.

Following the Protohistoric Period, there was a brief period (Ethnohistoric) when Native American culture was initially being affected by Euroamerican culture and historical records on Native American activities were limited. Archival and published reports from this time suggest that the current project area is situated on land where the traditional territories of the Serrano, Cahuilla, and Gabrielino once overlapped.

<u>Historic Resources</u>

The historic period began in California with the arrival of western Europeans. It can be divided into three time periods: Spanish Period, Mexican Period, and American Period.

*Spanish Period (1769-1822)*

This period represents: exploration; establishment of the San Diego Presidio, and the San Diego and San Luis Rey Missions; the introduction of horses, cattle, and agricultural goods; and a new method of building construction and architectural style.

In 1774, Captain Juan Bautista de Anza crossed the San Jacinto Plains with a party of soldiers, California Indians, and Mexican civilians in what is now known as the "de Anza expedition". He reported that the San Jacinto Plain contained great potential for ranching and agriculture, calling it "Paradise Valley". The establishment of Franciscan outposts and contact with the local native populations quickly followed.

The Riverside and San Bernardino county areas lacked a mission proper, but remained connected to the California presidio and mission system through Franciscan outposts known as ranchos and asistencias. The Riverside area fell under the authority of the Mission San Luis Rey, which established a set of ranchos that covered much of what is today Riverside County. These ranchos included Santa Margarita, Las Flores, San Mateo, San Juan, Pala, San Marcos, Agua Hedionda, Buena Vista, and the northernmost, San Jacinto.

*Mexican Period (1822-1846)*

In 1821, after ten years of intermittent rebellion and warfare, Mexico and the territory of California won independence from Spain. Following the Secularization Act of 1833, which was essentially legislation calling for the immediate privatization of Franciscan lands, the Mexican government secularized all of the California Missions. Although several grants of land were made prior to 1833, after secularization, vast tracts of land were dispersed through land grants.

One such land grant, Rancho Jurupa, passed through several different owners. By 1849, Louis Rubidoux had acquired 6,700 acres of the Jurupa grant, which became known as the Rubidoux portion of Rancho Jurupa. The boundary of the Rancho Jurupa as it appeared during post-mission California is delineated on modern maps and part of it is included in the PVL project area.

*American Period (1846-2002)*

Mexico ceded California to the United States in 1848, thus ushering in the American Period. Terms of the treaty brought about creation of the Lands Commission in response to the Act of 1851, which was adopted as a means of validating land ownership throughout the state through settlement of land claims.

In 1852, San Diego organized into a county; in 1853, San Bernardino followed suit. Riverside County would be organized 40 years later, but at this time, the area lay within the southern edge of San Bernardino and the northern third of San Diego counties. Settlement in the San Jacinto Valley occurred during the 1860s-1890s and, as a result, canals were built and the regional citrus industry took root. Population rose dramatically as the citrus industry and the railroads increased.

Industrial History

*The Riverside Citrus Industry*

In 1870, portions of Rancho Jurupa (totaling approximately 10,000 acres) went to the Southern California Colony Association of Jurupa, an investment company headed by John W. North. The association named the Jurupa area "Riverside" and in 1870 implemented a colonization plan that included offering rural and town lots to family oriented investors.

Citrus became the primary agricultural product produced by the Riverside colony. By 1940, the citrus industry in Riverside had grown into a major economic force and a significant cultural landscape evolved that consisted of more than 12,000 acres of orange groves. To help meet the increasing need for larger water transport systems, the Gage Canal was built in 1889 and reached lands from the Santa Ana River 20 miles distant to the district of Arlington Heights in the city of Riverside. Other major waterways were eventually constructed, including the Riverside Canal, the California Aqueduct, and a branch of the Colorado River Aqueduct.

*Railroad History*

To facilitate the transportation of citrus crops from the grower to the consumer, the railroad industry routed several main and branch lines into the heart of the region. The Southern Pacific, the AT&SF, and the UP railroads all laid track in and around Riverside and built or leased large networks of packing houses, icing plants, and storage.

The Southern Pacific Railroad Company of California was incorporated in December of 1865 and a segment of it (currently operated by the UP) crosses into the project area between Marlborough Avenue and Massachusetts, and enters downtown Riverside at Riverside Junction.

During the 1880s, AT&SF entered Riverside and established the SJBL throughout Riverside County, and subsequently the BNSF alignment.

### *4.5.2 Regulatory Setting*

Federal Policies and Regulations

*Paleontological Resources Preservation Act*

The Paleontological Resources Preservation Act was signed into law on March 30, 2009 (Public Law 111-011, Title VI, Subtitle D) and requires federal agencies to manage and protect paleontological resources on federal land. The Paleontological Resources Preservation Act affirms the authority of federal land managing agencies to issue permits for the collection and curation of paleontological resources by qualified researchers, and maintain the confidentiality of locality data.

National Natural Landmarks Program

The National Natural Landmarks Program (36 CFR 62) "identifies and preserves natural areas that best illustrate the biological and geological character of the United States, enhance the scientific and educational values of preserved areas, strengthen public appreciation of natural history, and foster a greater concern for the conservation of the nation's natural heritage" (36 CFR 62.1). A significant geological resource is a feature known to be characteristic of a given natural region, including geologic structures and exposures of landforms that record active geologic processes or portions of earth history (36 CFR 62.5).

*Antiquities Act of 1906*

The Antiquities Act of 1906 (16 USC 431-433) was one of the first federal regulations to address the preservation of cultural resources. The Antiquities Act of 1906 prohibits the destruction of "any historic or prehistoric ruin or monument, or any object of antiquity" on Federal lands. Although neither the Antiquities Act nor its implementing regulations (43 CFR 3) specifically addresses paleontological resources, many federal agencies have interpreted "objects of antiquity" to include fossils.

*National Historic Preservation Act*

Section 106 of the NHPA states that cultural resources must be taken into consideration before construction can begin on any federally funded project. Section 106 uses the term "historic properties" to describe cultural resources.

An historic property is defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP, which is maintained by the Secretary of the Interior. (16 USC 470)

*National Register of Historic Places*

The NRHP was established in 1966 as the official national listing of important cultural resources worthy of preservation. Authorized under the NHPA, NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate and protect significant cultural resources.

The criteria to determine the significance of a cultural resource is found in 36 CFR 60 of the NRHP:

"The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and:

(a) That are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) That are associated with the lives of persons significant in our past; or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded or may be likely to yield information important in prehistory or history"

State Policies and Regulations

*California Environmental Quality Act*

Under CEQA Guidelines, cultural and paleontological resources are considered important components of the environment and should be preserved. Accordingly, CEQA requires that a proposed project first evaluate the significance of any cultural and paleontological resources located in the project area. If the project will have an impact on any significant resource, alternative plans or mitigation measures must be provided.

CEQA breaks down the meaning of cultural resources into two terms: “historical resources” and “archaeological resources”.

The definition of a historical resource under CEQA is found in Title 14 of the California Code of Regulations §15064.5. Historical resources are:

(a) A resource listed in, or eligible for listing, in the California Register of Historical Resources (PRC §5024.1).

(b) A resource included in a local register of historical resources, as defined in §5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements §5024.1(g).

(c) Any object, building structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

(d) A resource that is not listed, or eligible for listing, in the California Register of Historical Resources but that is deemed significant by the lead agency.

Archaeological sites are included in the discussion of historical resources (14 CCR 3 §15064.5).

The definition of an archaeological resource includes any archaeological resources, not otherwise determined to be historical resources that are “unique”. A “unique” archaeological resource meets one of the following criteria (PRC §21083.2):

(a) The resource contains information needed to answer important scientific questions and there is a demonstrable public interest in that information.

(b) The resource has a special and particular quality, such as being the oldest of its type or the best available example of its type.

(c) The resource is directly associated with a scientifically recognized important prehistoric or historic event or person.

Under CEQA, a cultural resource shall be considered significant if the resource is 45 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets the requirements for listing on the CRHR.

*California Register of Historical Resources*

The CRHR is the official state listing of important cultural resources that are worthy of preservation, and is maintained by the State Historic Preservation Office. Properties listed or eligible for listing on the NRHP are nominated and selected to be listed on the CRHR. Any resource eligible for the NRHP is also automatically eligible for CRHR. (PRC §5020 *et seq*.)

Similar to the NRHP, a cultural resource may be considered significant by CEQA if it meets the following criteria for listing on the CRHR (PRC §5024.1):

(a) It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or

(b) It is associated with the lives of persons important to California's past; or

(c) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(d) Has yielded or may be likely to yield information important in prehistory or history.

Local Policies and Regulations

*Riverside County General Plan*

The Riverside County General Plan provides a number of policies to ensure the preservation of cultural resources within the County. These policies include reviewing and analyzing the potential effects that proposed development could have on significant resources and providing appropriate mitigation measures (Riverside County, 2008).

Additionally, the Open Space Element of the General Plan includes a Paleontological Sensitivity map that illustrates areas within the county that are sensitive for paleontological resources. Areas are designated as "High A", "High B", and "Low" lands of paleontological sensitivity (Riverside County, 2008).

"High A" lands consist of sedimentary rock units that are known to contain or have the correct age and depositional conditions to contain significant paleontological resources (Riverside County, 2008).

"High B" lands consist of sedimentary rock units with a sensitivity equivalent to High A, but are based on the occurrence of fossils at a specified depth below the surface. This category indicates that fossils are likely to be encountered at or below 4 feet of depth, and may be impacted during excavation by construction activities.

"Low" lands consist of lands for which previous field surveys and documentation demonstrates as having a low potential for containing significant paleontological resources subject to adverse impacts.

Policy OS 19.9 requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department documenting any paleontological resources that are found during the course of site grading (Riverside County, 2008).

*City of Riverside General Plan*

Within Riverside's General Plan is a section entitled, the Historic Preservation Element. This section "provides guidance in developing and implementing activities that ensure that the identification, designation and protection of cultural resources are part of the City's community planning, development and permitting processes" (City of Riverside, 2008). Also included in this section are policies to protect paleontological resources and to ensure compliance with all applicable State and federal laws.

*City of Riverside Municipal Code Title 20*

Riverside Municipal Code Title 20 (Cultural Resources Code) established the authority for preserving cultural resources by providing criteria for evaluating projects affecting significant resources and procedures for protecting and designating these resources. City approval is required to alter, demolish, or relocate historic resources (City of Riverside, 2008).

*City of Perris General Plan*

The Conservation Element within the General Plan provides an inventory of cultural resources and the means to protect and preserve these for the benefit of the Perris community as new development occurs (City of Perris, 2005). The City of Perris details several specific policies that ensure compliance with state and federal regulations.

Also included in the Conservation Element section is a Paleontological Sensitivity Map that splits areas within the City of Perris into five sections. The paleontological sensitivity within each section ranges from lands with a high potential to contain significant paleontological resources to lands with a low potential (City of Perris, 2005). In some sections, the potential of land containing paleontological resources occurs below five feet.

Policy IV.A.4 states that when a proposed project is located on land with a high potential of containing paleontological resources, a paleontological monitor must be present during construction (City of Perris, 2005).

### *4.5.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Cultural Resources is defined by:

1. *Does the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5*

2. *Does the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5*

3. *Does the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature*

4. *Does the project disturb any human remains, including those interred outside of formal cemeteries*

### *4.5.4 Project Impacts*

***Does the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5***

Citrus Connection

No cultural resources were identified within or adjacent to the Citrus Connection parcels. Therefore, the construction, operation, and maintenance of the Citrus Connection are not expected to adversely change the significance of any historical resources.

However, sediments within the Citrus Connection are of Holocene age and are sensitive for buried prehistoric cultural deposits. Mitigation measures are required to reduce construction impacts to a less than significant level (Mitigation measure CR-1).

SJBL Alignment

Five cultural resources were identified within or immediately adjacent to the SJBL alignment: the SJBL Railroad; bedrock milling site I; a multi-component site; bedrock milling site II; and a lithic scatter. These are described below.

*SJBL Railroad*

The SJBL Railroad is considered eligible for listing on the CRHR under Criterion I. There are three segments along the SJBL alignment within the PVL corridor that are considered contributing, and therefore significant, components of the historic SJBL Railroad.

*SJBL Railroad segments*

The first of the three contributing segments of the SJBL Railroad within the PVL corridor is located in the City of Riverside from Marlborough Avenue south of Spruce Street. The second contributing segment is located in the city of Riverside from Gernert Road south to the Box Springs Overpass, while the third contributing segment is located in the city of Perris from the “D” Street off ramp of I-215 southeast along Case Road. These three segments retain integrity of location, setting, design, and workmanship, and are therefore considered to be contributing components to the larger SJBL Railroad.

These three segments contain tracks, wood box culverts, and bridges. Since the proposed PVL project will not modify the setting and engineering of the tracks, and the double track will not be constructed at these locations, the project will have no significant effect on this portion of the SJBL Railroad.

However, four wood box culverts (MP 1.60, 5.30, 6.11, and 18.10) and two bridges (MP 20.70 and 20.80) are unique in their construction and are an integral part of the segments of the SJBL that retain integrity. Mitigation measures are required to reduce construction impacts to a less than significant level (Mitigation measure CR-2).

*CA-RIV-2384*

This bedrock milling site within the Box Springs Mountain Reserve area, contains several boulders with milling features and is located on both sides of the SJBL alignment in an alluvial fan on the western slope of Box Springs Mountain.

The proposed development in this area would be upgrading the existing tracks, which would not impact the features of the site. Therefore, the construction, operation, and maintenance of the SJBL alignment at this location are not expected to adversely change the significance of this historical resource.

*CA-RIV-4497/H*

At this site there are prehistoric and historic components, including bedrock milling features, a poorly preserved dam, concrete pads, and a historical refuse scatter consisting of multi-colored glass, stoneware, metal fragments, railroad debris, etc. The site is located on both sides of the SJBL alignment in an alluvial fan south of Box Springs Mountain.

The proposed development in this area would be upgrading the existing tracks, which would not impact the features of the site. Therefore, the construction, operation, and maintenance of the SJBL alignment at this location are not expected to adversely change the significance of this historical resource.

*AE-CB-2*

This bedrock milling site consists of several milling outcrops and milling features and is located over 52 feet from the SJBL alignment, near the foot of the slope at the south face of Box Springs Mountain.

Because of the distance separating this site from the SJBL alignment, the proposed development at this location will not impact the features of the site. Therefore, the operation, construction, and maintenance of the SJBL alignment at this location are not expected to adversely change the significance of this historical resource.

*CA-RIV-805*

This prehistoric site consists of three flakes and one shell fragment. It is located on agricultural land in the floodplain of the San Jacinto River in Perris Valley and north of South Perris Station. The ongoing farming operation that has occurred on the land has likely impacted the integrity of the upper portions of the site. However, considering that the site is located on a floodplain of the San Jacinto River (the channel is approximately one-quarter-mile east), and geological sources specify that the local material is Holocene, the site holds the potential for buried cultural deposits of an extent greater than the current distribution indicates (Morton and Cox, 2001). Accordingly, archaeological testing was conducted at the site to determine the spatial extent and eligibility for testing on the CRHR. The results of the testing concluded that no intact buried deposits are present and that surface artifacts represent the only remnants of the site. Therefore, the site is considered ineligible for the CRHR and no impacts are anticipated for this issue area.

Hunter Park Station options

Hunter Park Station would be located at one of the three proximate sites: Palmyrita Avenue Station option, Columbia Avenue Station option, or the Marlborough Avenue Station option. No historical resources were identified within or adjacent to any of the three Hunter Park Station options.

Therefore, the construction, operation, and maintenance of the proposed Hunter Park Station option are not expected to adversely change the significance of any historical resource.

However, sediments within the Columbia Avenue Station option and the Palmyrita Avenue Station option are of Holocene age and are sensitive for buried prehistoric cultural deposits. Mitigation measures are required to reduce construction impacts to a less than significant level (Mitigation measure CR-1).

Moreno Valley/March Field Station

No historical resources were identified within or adjacent to the proposed Moreno Valley/March Field Station.

Additionally, this proposed station has already been approved as part of the Meridian Business Park Plan in 2003. The EIR for this Specific Plan also determined that there are no historical resources near this location and that therefore there would be no impacts to any such resources (March JPA, 2003).

Therefore, the construction, operation, and maintenance of the proposed Moreno Valley/March Field Station are not expected to adversely change the significance of any historical resource.

Downtown Perris Station

One historical resource was identified near the proposed Downtown Perris Station: The historic Perris Depot.

The historic Perris Depot is currently listed on the NRHP under Criteria A and C. It is located east of the SJBL ROW and outside of the construction footprint for the Downtown Perris Station. The platform for the proposed Downtown Perris Station would be at-grade, and located west of the existing rail line and north of the historic Depot. Because of this designation, construction activities of the Downtown Perris Station have been planned to avoid altering, impairing, or diminishing any of the qualities for which the historic depot is valued. Therefore, the construction, operation, and maintenance of the proposed Downtown Perris Station are not expected to adversely change the significance of this historical resource.

South Perris Station and the Layover Facility

No historical resources were identified within or adjacent to the proposed South Perris Station and Layover Facility.

Therefore, the operation and maintenance of this proposed station and facility are not expected to adversely change the significance of any historical resource.

However, sediments within the South Perris Station and Layover Facility are of Holocene age and are sensitive for buried prehistoric cultural deposits. Mitigation measures are required to reduce construction impacts to a less than significant level (Mitigation measure CR-1).

Communication Towers

The PVL project includes the development of six radio control tower sites and three microwave tower sites.

No historical resources were identified in the vicinity of these proposed communication tower sites. Therefore, the construction, operation, and maintenance of these towers are not expected to adversely change the significance of any historical resource.

Landscape Walls

Landscape walls have been identified for three schools along the SJBL alignment. These walls would be located at the edge of the ROW adjacent to the schools with the exception of Nan Sanders Elementary School (refer to Section 2.4.8).

No historical resources were identified in the vicinity of any of these proposed landscape walls. Therefore, the construction, operation, and maintenance of these landscape walls are not expected to adversely change the significance of any historical resource.

***Does the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5***

No archaeological resources were identified in the vicinity of any of the proposed development sites within the PVL corridor. Therefore, the operation, construction, and maintenance along the PVL corridor are not expected to adversely change the significance of any archaeological resource.

However, as described above in part (a), there is potential for buried prehistoric cultural deposits to be impacted by ground-disturbing activities greater than four feet associated with project construction (Mitigation measure CR-1).

***Does the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature***

A paleontological literature and records review was conducted through the San Bernardino County Museum. The results of the research indicate that portions of the PVL corridor are sensitive for paleontological resources, and therefore require mitigation to reduce the impact to less than significant (Mitigation measure CR-3).

There are no unique geologic features located in the vicinity of the PVL corridor. Therefore, the construction, operation, and maintenance of the PVL project are not expected to significantly impact any unique geologic feature.

Citrus Connection

The mapped geological formations underlying the Citrus Connection include Holocene-age young alluvial fan deposits, which are not sensitive for paleontological resources (Scott, 2008). Therefore, the construction, operation, and maintenance of the Citrus Connection would not significantly impact paleontological resources.

SJBL Alignment

The SJBL alignment traverses several types of sediment. Old and very old alluvial fan deposits are present beneath most portions of alignment. These areas include: MP 1.00 to MP 5.00; and MP 7.00 to the southern boundary of the project area.

Sediments that comprise the old and very old alluvial fan deposits have been known to yield paleontological resources (Scott 2008). Construction activities at these locations have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation measure CR-3).

Hunter Park Station options

Hunter Park Station would be located at one of the three proximate sites: Palmyrita Avenue Station option, Columbia Avenue Station option, or the Marlborough Avenue Station option.

*Marlborough Avenue option*

The underlying sediments of the Marlborough Avenue location for the proposed Hunter Park Station site consist of mostly old alluvial fan deposits and a small area of porphyritic granodiorite of the Box Springs plutonic complex (Morton and Cox, 2001).

The granodiorite is a Cretaceous rock outcrop, which has no potential for paleontological resources (Scott, 2008). The areas mapped as old alluvial fan deposits have the potential to yield paleontological resources; however, due to extensive grading and disturbance to native sediments, the likelihood of uncovering such resources is minimal. Therefore, the construction, operation, and maintenance of the Marlborough Avenue option for the proposed Hunter Park Station would not significantly impact paleontological resources.

*Columbia Avenue option*

The mapped geological formations underlying the Columbia Avenue location for the proposed Hunter Park Station include old alluvial fan deposits, which have been known to yield paleontological resources (Morton and Cox, 2001; Scott, 2008). Therefore, construction activities at this location have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation measure CR-3).

*Palmyrita Avenue option*

The mapped geological formations underlying the Palmyrita Avenue location for the proposed Hunter Park Station include old alluvial fan deposits, which have been known to yield paleontological resources (Morton and Cox, 2001; Scott 2008). Therefore, construction activities at this location have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation measure CR-3).

Moreno Valley/March Field Station

This station is located in an area mapped as old and very old alluvial fans, which have the potential to yield significant paleontological resources (AE, 2009; Scott, 2008). Construction activities at this location have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation measure CR-3).

Downtown Perris Station

This station is located in an area mapped as old and very old alluvial fans, which have the potential to yield significant paleontological resources (AE, 2009; Scott, 2008). Construction activities at this location have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation measure CR-3).

South Perris Station and Layover Facility

This station and facility are located in areas mapped as old and very old alluvial fans, which have the potential to yield significant paleontological resources (AE, 2009; Scott, 2008). Construction activities at these locations have the potential to significantly impact unique paleontological resources and mitigation measures are required to reduce impacts to a less than significant level (Mitigation measure CR-3).

***Does the project disturb any human remains, including those interred outside of formal cemeteries***

Implementation of the PVL project is not expected to disturb any human remains, including those interred outside of formal cemeteries. However, should human remains be uncovered, mitigation measures would be required (Mitigation measure CR-5).

*4.5.5 Mitigation Measures*

- CR-1: A qualified archaeologist and Native American monitor ~~will~~ shall monitor ground disturbing construction activities between MP 3.50 and 4.50, and between MP 5.60 and 6.50. These monitors ~~will~~ shall have the authority to temporarily halt or divert construction equipment to examine potential resources, assess significance, and offer recommendations for the procedures deemed appropriate to either further investigate or mitigate any adverse impacts. CA-RIV-2384, CA-RIV-4497/H and AE-CB-2 sites ~~will~~ shall be avoided during project construction through the establishment of ESA and delineated by exclusionary fencing.

- CR-2: Replacement of four wood box culverts (MP 1.60, 5.30, 6.11 and 18.10) and two bridges (MP 20.70 and 20.80) along the SJBL alignment shall be mitigated by detailed documentation according to Historic American Buildings Survey ~~(HABS)~~/Historic American Engineering Record (HAER)/Historic American Landscape Survey ~~(HALS)~~ standards ~~(AE, 2009)~~.

- CR-3: Ground-disturbing activities ~~will~~ shall be monitored by a qualified paleontologist at the Citrus Connection, South Perris Station and Layover Facility. The monitor ~~should~~ shall also be present at locations where excavation is ~~great~~ anticipated to be deeper than four feet. The monitor shall have the authority to temporarily halt or divert construction equipment to allow for removal of specimens. The monitor shall be equipped to salvage any fossils unearthed during project construction, and shall be prepared to collect sediment samples that are likely to contain the remains of small fossil invertebrates and vertebrates.

  To mitigate adverse impacts to any paleontological resources encountered during construction, recovered specimens ~~will~~ shall be identified, prepared for permanent preservation, and curated at the San Bernardino County Natural History Museum with permanent retrievable paleontological storage. A report of findings ~~which~~ that includes an itemized inventory of specimens ~~will~~ shall accompany the recovered specimens for curation and storage.

- CR-4: In the event ~~that unanticipated~~ cultural or paleontological resources are encountered during ~~the proposed PVL project~~ construction, ground-disturbing activity will cease in the immediate area. ~~until the services of a~~ A qualified archaeologist (cultural resources) and/or paleontologist (paleontological resources) ~~are~~ shall be retained to ~~. The archaeologist or paleontologist will~~ examine the ~~findings~~materials encountered, assess ~~their~~ significance, and recommend ~~offer recommendations for the procedures deemed appropriate to either~~ a course of action to further investigate and/or mitigate adverse impacts to those resources that have been encountered.

- CR-5: In the event that unanticipated discovery of human remains occurs during project construction, the procedures outlined in §15064.5(e) of the CEQA Guidelines ~~will~~ shall be strictly followed. These procedures specify that upon discovery, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains can occur. The county coroner must be contacted to determine if the remains are Native American. If the remains are determined to be Native American, the coroner ~~will~~ shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC ~~will~~ shall identify the Most Likely Descendent (MLD). The MLD ~~will~~ shall make recommendations for the appropriate treatment and disposition of the remains and any associated grave goods in accordance with PRC §5097.98.

### *4.5.6 Mitigation Summary*

The cultural resource mitigation measures are typical mitigation measures for this type of project. Typical mitigation within a built environment includes documenting the type, construction and setting of the desired features. In this case it is four of the wooden box culverts, and the two San Jacinto River bridges. As is typical, once this information is developed, it is supplied to the local information center (Eastern Information Center at UCR). In this way, the information is available to future researchers and historians.

The project area ground surface has been visually inspected as part of the project related cultural resource studies. During the projects ground disturbing activities, if a cultural resource artifact, or paleontological resource is encountered, the project specific monitors (cultural resource and paleontological) can evaluate the find and proceed appropriately without causing extended delays in the construction.

It should be noted that as part of the cultural resource evaluation for this project, that State Office of Historical Preservation (SHPO) consultation is required. The consultation takes the form of presenting the information generated regarding the project site and surrounding areas, description of any additional research or field investigations, a determination of whether any site is a significant resource and if it will be impacted. This information combined with a summary of Native American consultation is submitted to SHPO for concurrence that the project will not impact any cultural resources. SHPO then has 30 days to agree or disagree with the conclusion.

## 4.6 GEOLOGY AND SOILS

This section of the EIR presents the findings of the *Preliminary Geotechnical Investigation Report*, *Perris Valley Line Corridor Project* (Kleinfelder, 2009) and an assessment of the potential impacts related to geology and soils within the PVL corridor project area. This section evaluates the effect of geological hazards within the PVL including seismicity and faulting; liquefaction and seismically induced settlement potential; landslides, rockslides, and debris flow; and subsidence, corrosivity, and expansiveness of soils. Also included is a discussion of the existing environment that could be affected, including regional and local geology and soils.

### *4.6.1 Environmental Setting*

<u>Geologic Setting</u>

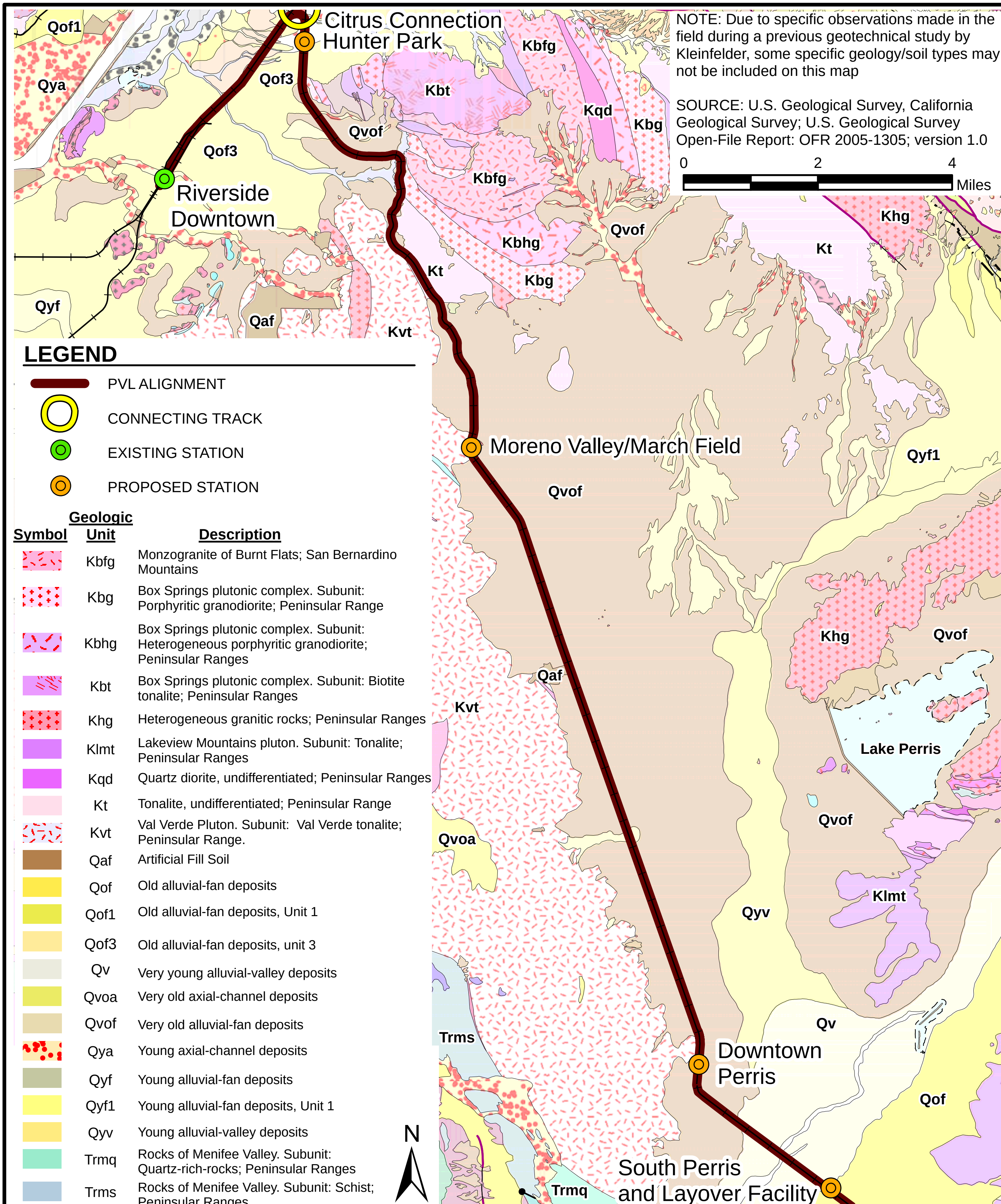
The State of California is made up of eleven geomorphic provinces as defined by the CDC California Geologic Survey (CGS, 2002). California Geomorphic Provinces are distinctive, generally easy to recognize natural regions in which the geologic record, types of landforms, pattern of landscape features, and climate in all parts are similar (CGS, 2002). The PVL corridor study area is located within the Peninsular Ranges Geomorphic Province. The Peninsular Range province is a series of mountain ranges separated by northwest-trending valleys running parallel to faults branching from the San Andreas Fault. The Peninsular Ranges extend south to Mexico and are bordered by the Transverse Range on the north, the Colorado Desert on the east, and the Pacific Ocean on the west.

<u>Regional Geology</u>

The PVL corridor traverses three main geologic units consisting of young alluvial fan and valley deposits, older alluvial fan deposits, and granitic rock of the Peninsular Ranges Batholith. A batholith is a large emplacement of igneous intrusive (also called plutonic) rock that forms from cooled magma deep in the earth's crust (Plummer et al, 1999). Sandstone is also mapped approximately 0.25-miles south of Box Springs Road and I-215, but is limited in depth and lateral extent. Additionally, artificial fill (Qaf) is present, essentially along the entire length of the PVL corridor that is associated with the construction of the existing railway. The PVL corridor geology is mapped in Figure 4.6-1.

Young alluvial and valley deposits are present in the northern and southern segments of the PVL corridor (Morton and Miller, 2006). The older alluvial fan deposits overlay most of the PVL corridor from the I-215/SR-60 interchange to south of the city of Perris, and the east side of the city of Riverside in the area near UCR. Cretaceous age, igneous intrusive tonalite phase bedrock underlies the alluvium in the region and is exposed in outcrops in the Box Springs Mountains and the hills west of the PVL corridor near the city of Perris.

The artificial fill soil within the PVL corridor is generally less than a few feet thick, but was observed to be up to approximately ten feet thick (approximately one-mile north of the proposed Moreno Valley/March Field Station). These soils are generally derived from the adjacent or underlying alluvial materials and composed of silty sand, sandy silt, clayey sand and clean sand with silt. The materials generally range from loose and medium dense, fine to medium grained, and dry to moist.

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| DRAWN: | 12/20/09 |
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| FILE NAME: | 92666geoEIR.MXD |

PVL CORRIDOR GEOLOGY

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.6-1

Project Soils

The NRCS has previously conducted soil mapping in Western Riverside County (NRCS, 1971). This mapping characterized the types and distribution of soils within the PVL corridor. Soil descriptions were developed from the soil survey publications (NRCS, 1971 and National Cooperative Soil Survey [NCSS], 2008) and from the Official Soil Descriptions (NRCS, 2008). Site soils within the PVL corridor and adjacent properties have been mapped on Figure 4.6-2. Specific site soils and their characteristics are noted below and in Table 4.6-1.

- Two soil mapping units are present within the Citrus Connection of the PVL corridor, (HcC) Hanford Coarse Sandy Loam and (TeG) Terrace Escarpments, in the Springbrook Wash area. HcC (2 to 8 percent slopes) is prime farmland with slow runoff and slight erosion hazard, while TeG (30 to 75 percent slopes) may present a severe water erosion hazard.

- There are 38 soil mapping units present within the SJBL alignment. The majority of the soil types (approximately 80 percent) are classified as sandy loams, which generally have slow to moderately slow runoff and exhibit slight erosion hazard; however, some hydric soils have formed in local areas due to soil saturation indicating the potential presence of wetland areas. Two soils mapping units with a high susceptibility to erosion, Cieneba rocky sandy loam (CkF2) and Terrace escarpments (TeG) are located within the SJBL alignment. One soil series, willow silty clay (Wf, Wg, Wm, and Wn), found within one mile radius of the San Jacinto River crossing has a high shrink-swell potential.

- There were five soil mapping units present within the Hunter Park area, all loams: Arlington fine sandy loam (AoC), Buren fine sandy loam (BuC2), Cieneba rocky sandy loam (CkF2), Greenfield sandy loam (GyC2), and Hanford coarse sandy loam (HcC). Three soils (AoC, BuC2, and CkF2) present moderate or moderate to severe erosion hazard. All types are classified as two to eight percent slopes, except for CkF2, which is 15 to 30 percent slope and present only at the Hunter Park - Marlborough Station option site.

- There were four soil mapping units present on the proposed Moreno Valley/March Field Station site, all loams: Cieneba rocky sandy loam (CkF2), which presents a moderate to severe erosion hazard, and Monserate sandy loams (MmB, MmC2, and MmD2), for which erosion hazard is slight. Slopes range from 15 to 30 percent with the Cieneba rocky sandy loam, and are 15 percent or less in the Monserate sandy loams.

- Exeter very fine sandy loam (EwB) was the only soil mapping unit present on the Downtown Perris Station site. Characteristics of this soil mapping unit are described as a slight to moderate erosion hazard with very slow to moderate runoff and 0 to 2 percent slopes.

- There were three soil mapping units present on the proposed South Perris Station site, which are all Willows silty clays (Wg, Wm, and Wn). While water erosion hazard is slight, these poorly to very poorly drained soils have high shrink-swell potential.

- There were two soil mapping units present on the proposed Layover Facility site, both loams, are Exeter very fine sandy loam (EwB) and Madera fine sandy loam (MaA). Both present slight to moderate erosion hazard. EwB exhibits very slow to moderate runoff, and MaA, which exhibits slow to moderate runoff, is an NRCS classified hydric soil (soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic, or oxygen poor, conditions in the upper part [NRCS, 1983]).

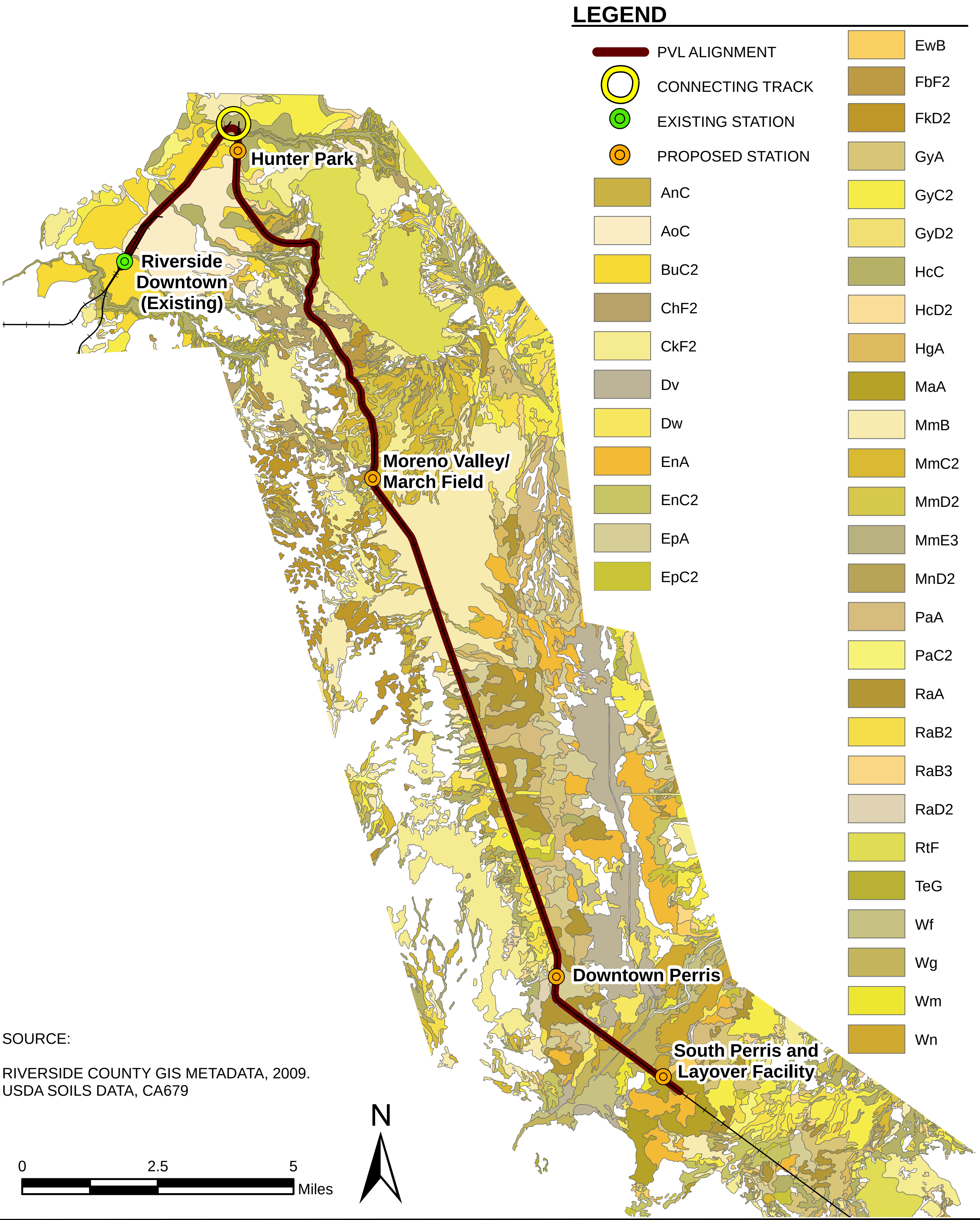
Seismicity and Faulting

Two of California's most active faults, the San Andreas and the San Jacinto faults, traverse Riverside County. Both of these faults, as well as the Elsinore fault zone, have the potential to generate future earthquakes within Riverside County and the PVL corridor. The seismic hazards that have the greatest potential to severely affect Riverside County are seismic ground shaking, liquefaction, and surface fault rupture. Secondary hazards such as seismically induced settlement, seismically induced slope instability, and (non-damaging) seiches may also occur as the result of a significant seismic event (Riverside County, 2003).

The PVL corridor is located in the highly seismic southern California region within the influence of several fault systems that are considered to be active or potentially active. The terms "sufficiently active" and "well defined" are used by the CGS as criteria for categorizing faults under the Alquist-Priolo Earthquake Fault Act. A "sufficiently active" fault is one that shows evidence of Holocene (a geologic epoch which began approximately 11,700 years ago and continues to the present [Roberts, 1998]) surface displacement along one or more of its segments and branches, while a "well-defined fault" is a fault whose trace is clearly detectable by a trained geologist as a physical feature at, or just below, the ground surface. The definition "inactive" generally implies that a fault has not been active since the beginning of the Pleistocene Epoch (older than 1.7 million years old). Locations of the officially delineated active and potentially active regional faults are shown on Figure 4.6-3.

These active and potentially active faults are capable of producing seismic shaking along the PVL corridor, and it is anticipated that the PVL corridor would periodically experience ground acceleration as the result of moderate to large magnitude earthquakes. The approximate distances to the nearest faults from the PVL corridor considered to have the greatest impact to the PVL corridor are presented in Table 4.6-2 and Table 4.6-3.

An east-striking potentially active fault splay, a series of minor faults at the extremities of an associated major fault (Ailsa et al., 1999), of the Elsinore fault, the Murrieta Hot Springs fault, is located approximately 14.3 miles south of the South Perris Station site (Riverside County, 2003).




SOURCE:

RIVERSIDE COUNTY GIS METADATA, 2009.
USDA SOILS DATA, CA679

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PVL CORRIDOR SOILS

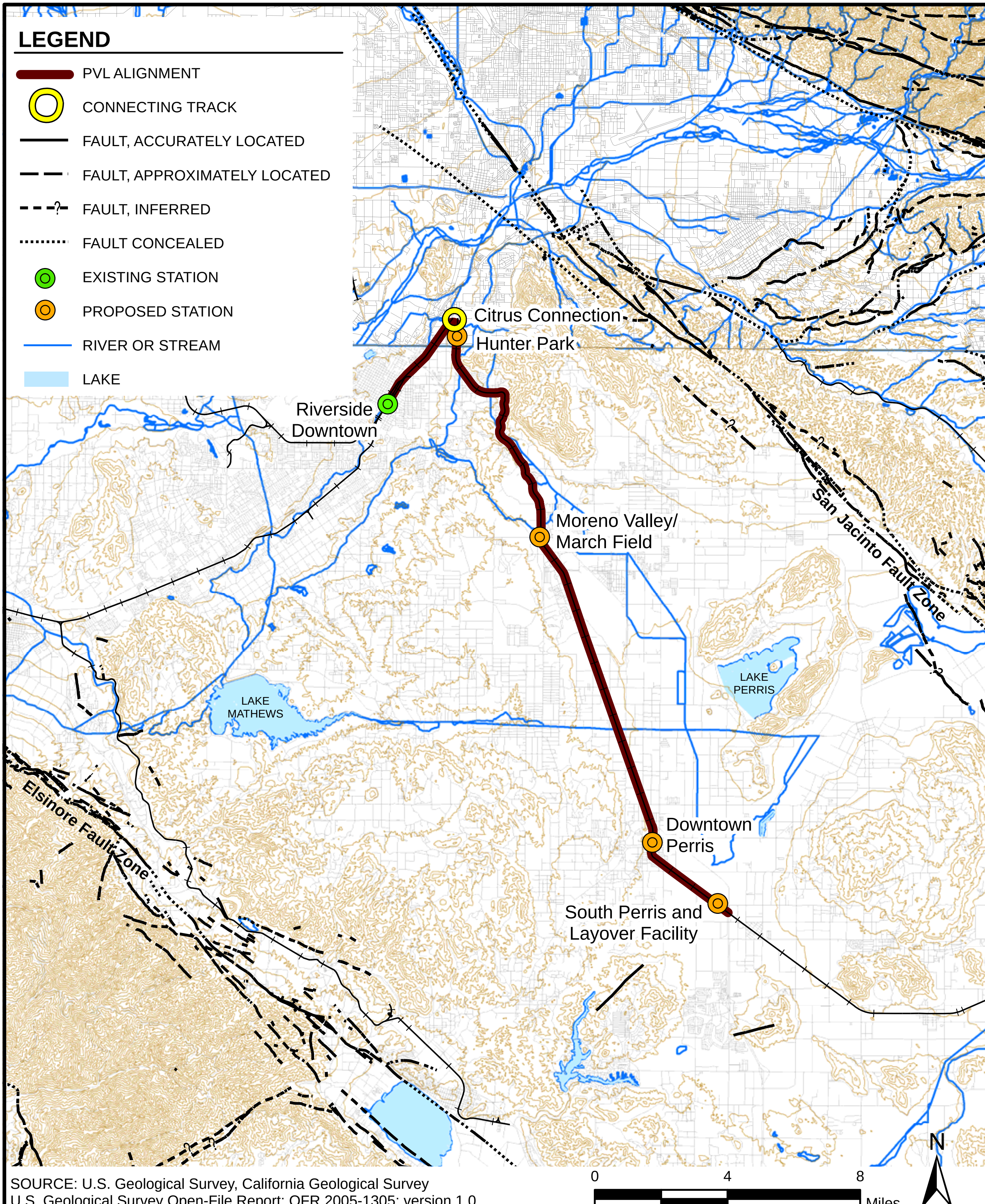
ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.6-2

**Table 4.6-1**
**SJBL Alignment Soil Mapping Units**

| Map Unit Symbol | Map Unit Name |
|---|---|
| AnC | Arlington fine sandy loam, 2 to 8 percent slopes |
| AoC | Arlington fine sandy loam, deep, 2 to 8 percent slopes (H) |
| BuC2 | Buren fine sandy loam, deep, 2 to 8 percent slopes (H) |
| ChF2 | Cieneba sandy loam, 15 to 50 percent slopes, eroded |
| CkF2 | Cieneba rocky sandy loam, 15 to 50 percent slopes eroded (H,M) |
| Dv | Domino silt loam, saline-alkali, hydric |
| Dw | Domino silt loam, strongly saline-alkali, hydric |
| EnA | Exeter sandy loam, 0 to 2 percent slopes |
| EnC2 | Exeter sandy loam, 2 to 8 percent slopes, eroded |
| EpA | Exeter sandy loam, deep, 0 to 2 percent slopes |
| EpC2 | Exeter sandy loam, deep, 2 to 8 percent slopes, eroded (D) |
| EwB | Exeter very fine sandy loam, 0 to 5 percent slopes (H) |
| FbF2 | Fallbrook fine sandy loam, shallow, 15 to 35 percent slopes, eroded |
| FkD2 | Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded |
| GyA | Greenfield sandy loam, 2 to 8 percent slopes |
| GyC2 | Greenfield sandy loam, 2 to 8 percent slopes, eroded (H) |
| GyD2 | Greenfield sandy loam, 8 to 15 percent slopes, eroded |
| HcC | Hanford coarse sandy loam, 2 to 8 percent slopes (C) |
| HcD2 | Hanford coarse sandy loam, 8 to 15 percent slopes, eroded |
| HgA | Hanford fine sandy loam, 0 to 2 percent slopes |
| MaA | Madera fine sandy loam, 0 to 2 percent slopes, hydric (L) |
| MmB | Monserate sandy loam, 0 to 5 percent slopes (M) |
| MmC2 | Monserate sandy loam, 5 to 8 percent slopes, eroded (M) |
| MmD2 | Monserate sandy loam, 8 to 15 percent slopes, eroded (M) |
| MmE3 | Monserate sandy loam, 15 to 25 slopes, severely eroded |
| MnD2 | Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded |
| PaA | Pachappa fine sandy loam, 0 to 2 percent slopes |
| PaC2 | Pachappa fine sandy loam, 2 to 8 percent slopes, eroded |
| RaA | Ramona sandy loam, 0 to 2 percent slopes |
| RaB2 | Ramona sandy loam, 2 to 5 percent slopes, eroded |
| RaB3 | Ramona sandy loam, 0 to 5 percent slopes, severely eroded |
| RaD2 | Ramona sandy loam, 8 to 15 percent slopes, eroded |
| RtF | Rockland |
| TeG | Terrace escarpments (C) |
| Wf | Willows silty clay |
| Wg | Willows silty clay, saline-alkali (S) |
| Wm | Willows silty clay, deep, saline-alkali (S) |
| Wn | Willows silty clay, deep, strongly saline-alkali (S) |
| Notes: All soils are found throughout the corridor along the SJBL alignment, except where indicated by an asterisk; such soils are found only at the indicated locations; Hunter Park Station options (H), Downtown Perris Station (D), Moreno Valley/March Field Station (M), South Perris Station (S), Layover Facility (L), and the Citrus Connection (C). | |
| Sources: Soil Survey of Western Riverside Area California (NRCS, 1971) and National Cooperative Soil Survey Website (NCSS, 2008). | |




SOURCE: U.S. Geological Survey, California Geological Survey
U.S. Geological Survey Open-File Report: OFR 2005-1305; version 1.0

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REGIONAL FAULTS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
4.6-3

KLEINFELDER
Bright People. Right Solutions.

**Table 4.6-2**
**Summary of Significant Faults**

| Fault Name | Approximate Fault Length (Miles) | Approximate Median Distance to Site (Miles) | Magnitude of Maximum Earthquake* | Slip Rate (in/yr) | Average Recurrence Interval (years) |
|---|---|---|---|---|---|
| San Jacinto-San Jacinto Valley Segment | 27 | 11 | 6.9 | 0.47 | 83 |
| Elsinore-Temecula Segment | 27 | 12 | 6.8 | 0.20 | 240 |
| Elsinore-Glen Ivy Segment | 22 | 12 | 6.8 | 0.20 | 340 |
| San Jacinto-Anza Segment | 57 | 17 | 7.2 | 0.47 | 250 |
| San Jacinto-San Bernardino Segment | 22 | 17 | 6.7 | 0.47 | 100 |
| Chino-Central Avenue | 17 | 21 | 6.7 | 0.04 | 885 |
| San Andreas-San Bernardino Segment | 66 | 24 | 7.5 | 0.95 | 433 |
| San Andreas-All Southern Segments | 317 | 24 | 8.1 | 0.95-1.34 | 220 |
| Whittier | 24 | 25 | 6.8 | 0.10 | 641 |
| Elsinore-Julian Segment | 47 | 29 | 7.1 | 0.20 | 340 |
| San Joaquin Hills Thrust ** | 17 | 29 | 6.6 | 0.02 | 2500 |

Notes:
* Moment Magnitude is an estimate of an earthquake's size by utilizing rock rigidity, amount of slip, and area of rupture.
** A blind thrust fault.

**Table 4.6-3**
**Approximate Distance to Nearest Faults (Miles)**

| PVL Corridor Site (Approximate Station Nos.) | Approx. Distance to San Jacinto Fault Zone (miles) | Approx. Distance to San Andreas Fault Zone (miles) | Approx. Distance to Elsinore Fault Line, Glen Ivy Section (miles) |
|---|---|---|---|
| Citrus Connection | 4.1 northeast | 11.3 northeast | 18.0 southwest |
| SJBL Alignment – North End | 4.3 northeast | 11.5 northeast | 18.2 southwest |
| SJBL Alignment – South End | 9.9 northeast | 22.0 northeast | 9.8 southwest |
| Palmyrita Option | 4.3 northeast | 12.8 northeast | 18.2 southwest |
| Columbia Option | 4.3 northeast | 12.8 northeast | 18.2 southwest |
| Marlborough Option | 4.7 northeast | 13.3 northeast | 18.0 southwest |
| Moreno Valley/March Field Station | 7.0 northeast | 17.3 northeast | 16.5 southwest |
| Downtown Perris Station | 11.6 northeast | 21.0 northeast | 10.1 southwest |
| South Perris Station | 11.5 northeast | 21.0 northeast | 10.1 southwest |
| Layover Facility | 11.5 northeast | 21.0 northeast | 10.1 southwest |

Source: Kleinfelder (2009)

Liquefaction and Seismically Induced Settlement Potential

Liquefaction and seismically induced settlement potential refer to another type of geologic hazard, in which loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake.

Seismically induced soil liquefaction generally occurs in loose, saturated, cohesionless soil when pore pressures within the soil increase during ground shaking. The increase in pore pressure transforms the soil from a solid to a semi-liquid state. The primary factors affecting the liquefaction potential of a soil deposit are: 1) intensity and duration of earthquake shaking, 2) soil type and relative density, 3) overburden pressures, and 4) depth to groundwater.

Soils most susceptible to liquefaction are clean, loose, uniformly graded, fine-grained sands, and non-plastic silts that are saturated. Silty sands have also been shown to be susceptible to liquefaction. The potential for liquefaction has been mapped as shown on Figure 4.6-4.

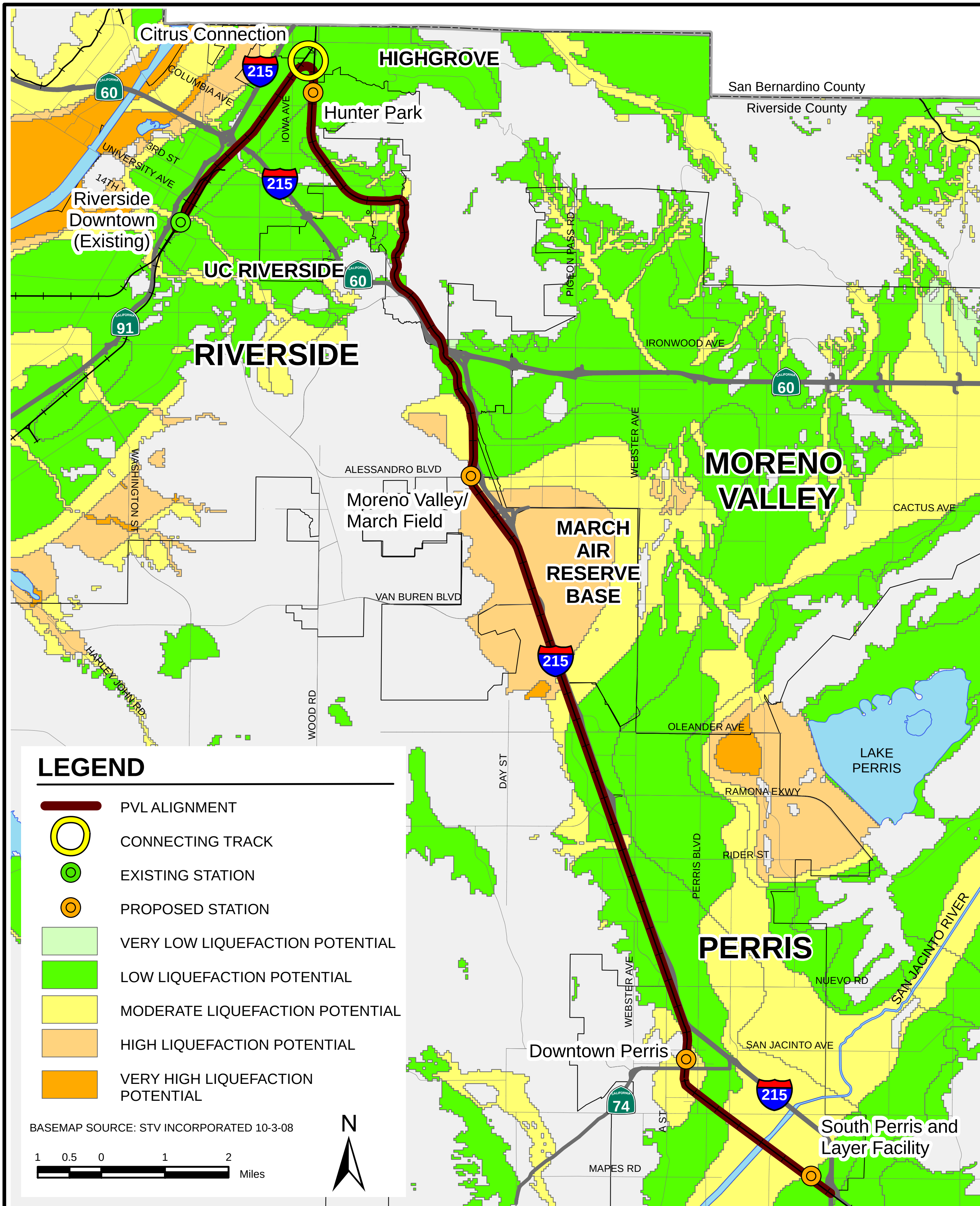
Portions of the rail corridor are in areas subject to high potential for liquefaction (Riverside County, 2003). Those areas particularly susceptible include the vicinity of the MARB and the proposed March Field/Moreno Valley Station.

Landslides, Rockslides, and Debris Flow

Landslides, rockslides, and debris flow constitute another category of geologic hazards. Landslide refers to the lateral displacement of earth materials on a slope or hillside; while rockslides refer to a geological phenomenon which includes a wide range of ground movement, such as falling rocks, deep failure of slopes and shallow debris flows. Landslides commonly occur in connection with other major natural disasters such as earthquakes, volcanoes, wildfires, and floods. Steep, bare slopes; clay-rich rock; deposits of stream or river sediment; and heavy rains can also cause landslides (Kleinfelder, 2008).

The annual precipitation in western Riverside County is low, about 15 inches per year, which is one component generally associated with low risk of debris flow disaster. The PVL corridor, because of the low annual precipitation, limited presence of clay soils, and relatively level topography, is at a low risk overall for landslides (Riverside County, 2003).

The PVL corridor and adjacent properties are relatively level except for the area between Box Springs Mountain Reserve and Moreno Valley Freeway/I-215, between MP 3.50 to MP 6.30, where the Box Springs Mountains form steep bedrock terrain adjacent to the east side of the PVL corridor.

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| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666LIQ_EIR.MXD |

LIQUEFACTION POTENTIAL

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.6-4

Subsidence

Ground subsidence results from fluid (e.g. groundwater, petroleum) withdrawal in weakly consolidated materials. The loss of fluid causes consolidation of the empty pore spaces, which means that any voids in the soil previously filled with fluid are compressed by the mass of the overlying materials, effectively decreasing the soil volume and resulting in land subsidence.

The PVL corridor is susceptible to subsidence; According to the County of Riverside General Plan, special circumstances for mitigation are only given to areas of documented subsidence (Riverside County Land, 2003).

Expansive Soils

Certain soils, known as "expansive soils," are subject to changes in volume and settlement in response to wetting and drying, often resulting in severe damage to structures. Expansive soils have a significant amount of clay particles which can exude water (shrink) or absorb and hold water (swell). The resultant changes in soil volumes exert stress on buildings and other loads placed on these soils. The distribution of expansive soils may be widely dispersed, and they may be present on hillsides as well as in low-lying alluvial basins (Riverside County, 2003).

Based on published soil survey soil descriptions, one soil series, Willow silty clay (Wf, Wg, Wm, and Wn), is characterized as having a high shrink swell potential. The Willow soil series is present on the SJBL alignment in an area within one-mile of the San Jacinto River crossing, in either direction (NRCS, 1971; NCSS, 2008; NRCS, 2008) (Figure 4.6-2).

Corrosive Soils

The corrosivity of soils is related to several key parameters: soil resistivity, presence of chlorides and sulfates, oxygen content, and pH. Typically, the most corrosive soils are those with the lowest pH and highest concentration of chlorides and sulfates. High sulfate soils are corrosive to concrete and may prevent complete curing reducing its strength considerably. Low pH and/or low resistivity soils could corrode buried or partially buried metal structures.

Soils with a moderate to high corrosion potential are present around the Hunter Park station options and South Perris Station option. These soils have the potential to corrode concrete and steel.

### *4.6.2 Regulatory Setting*

Federal Policies and Regulations

*Uniform Building Code*

The Uniform Building Code (UBC) was first enacted by the International Conference of Building Officials (ICBO) on October 18-21, 1927. Revised editions of this code are published approximately every three years (ICBO, 1997). The California Building Code (CBC) was approved and incorporated into the UBC in 1988. The regulatory environment for design and construction consists of building codes and standards covering local, state, federal, land use, and environmental regulations which are developed specifically for the purpose of regulating the life safety, health and welfare of the public. Once adopted, building codes become law (ICBO, 1997). The building code (which covers all new building construction, additions and renovations) is where the applicable seismic provisions are typically enforced. In addition to structural design requirements, the building code also covers fire resistance, disabled access and other life safety requirements (Fennie, 2005).

*National Engineering Handbook*

The National Engineering Handbook (NRCS, 1983), Sections 2.0 and 3.0 provide standards for soil conservation during planning, design, and construction activities. The PVL corridor would need to conform to these standards during grading and construction to limit soil erosion. These measures would be defined and outlined within the Project's specific stormwater plans.

*American Railway Engineering and Maintenance-of-Way Association Manual for Railway Engineering*

The American Railway Engineering and Maintenance-of-Way Association Manual (AREMA) was formed on October 1, 1997, as the result of a merger of three engineering support associations, namely the American Railway Bridge and Building Association, the American Railway Engineering Association and the Roadmasters and Maintenance-of-Way Association, along with functions of the Communications and Signal Division of the Association of American Railroads (AREMA, 2009). The AREMA Manual for Railway Engineering is an annually updated publication that explains the development and advancement of both technical and practical knowledge and recommended practices pertaining to the design, construction and maintenance of railway infrastructure.

*The Federal Water Pollution Control Act*

The Federal Water Pollution Control Act of 1972, commonly referred to as the CWA following amendment in 1977, establishes requirements for discharges of stormwater or wastewater from any point source that would affect the beneficial uses of waters of the United States (USEPA, 2009). The State Water Resources Control Board (SWRCB) adopted one statewide NPDES General Permit that would apply to stormwater discharges associated with construction, industrial, and municipal activities. RWQCB is the administering agency for the NPDES permit program. The CWA's primary effect on adjacent agriculture areas and soils within the PVL corridor consists of control of soil erosion and sedimentation during construction, including the preparation and execution of erosion and sedimentation control plans and measures for any soil disturbance during construction (SWRCB, 2009).

<u>State Policies and Regulations</u>

*Alquist-Priolo Earthquake Fault Zoning Act*

The Alquist-Priolo Earthquake Fault Zoning Act (A-PA) was enacted in 1975 and amended in 1993. The intent of the A-PA was to provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults. The A-PA only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. Further, it is the intent of the A-PA to provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes (CGS, 2003).

*Natural Hazards Disclosure Act*

Natural Hazards Disclosure Act came into effect June 1, 1998, and requires that sellers of real property and their agents provide prospective buyers with a "Natural Hazard Disclosure Statement" when the property being sold lies within one or more State-mapped hazard areas.

*Seismic Hazard Mapping Act*

The Seismic Hazard Mapping Act was enacted by the California legislature in April 1997, primarily as a result of the Northridge earthquake of 1994. The Seismic Hazard Mapping Act requires the creation and publication of maps showing areas where earthquake induced liquefaction or landslides could occur (CGS, 2003). If a property is located in a Seismic Hazard Zone as shown on a map issued by the State Geologist, the seller or the seller's agent must disclose this fact to potential buyers (CGS, 2007).

*Disaster Recovery Reconstruction Act*

The Disaster Recovery Reconstruction Act of 1986 authorizes local governments to prepare for expeditious and orderly recovery before a disaster and reconstruction afterward. It enables localities to prepare pre-disaster plans and ordinances that may include: an evaluation of the vulnerability of specific areas to damage from a potential disaster; streamlined procedures for appropriate modification of existing General Plans or zoning ordinances affecting vulnerable areas; a contingency plan of action; organization for post-disaster, short-term and long-term recovery and reconstruction; and a pre-disaster ordinance to provide adequate local authorization for post-disaster activities (CGC, 1986).

*California Building Code*

The California Building Standards Commission approved a series of amendments to the UBC, which was published in 1998, and known as the CBC. This is the Building Code used throughout California. Local codes are permitted to be more restrictive than the CBC, but are required to be no less restrictive (Fennie, 2005).

Local Policies and Regulations

*Riverside County Building and Fire Codes*

The Riverside County Department of Building and Safety reviews and enforces the Building and Fire Codes. These codes establish site-specific investigation requirements, construction standards, and inspection procedures so that development does not pose a threat to the health, safety, and welfare of the public. Every three years, the County's Building and Fire Codes are adapted from the Uniform Building and Fire Codes. The Uniform Building and Fire Codes contain minimum baseline standards to guard against unsafe development (Riverside County, 2003).

*Riverside Municipal Code (Title 14, §14.08.030)*

The Riverside Municipal Code Title 14, §14.08.030 states all homes and any other structures must be properly connected to a public sewer whenever the property abuts upon a ROW in which there exists a public sewer to which connection may be made (City of Riverside, 2007).

*Ordinance 1253 (City of Perris)*

This Ordinance, added to the Perris Municipal Code in March 2009, has adopted Chapter 7 of the CBC and relates to fire protection building standards and the adoption of a Fire Hazard Severity Zone Map (City of Perris, 2009).

*City of Riverside General Plan Public Safety Element (Seismicity and Faulting)*

Policy PS-1.2, part of the City of Riverside General Plan, was written to physically locate public facilities of City importance outside of geologically hazardous areas (City of Riverside, 2007).

*County of Riverside General Plan Public Safety Element (Hazard Reduction)*

A Hazard Reduction Program has been written within the Safety Element of the County of Riverside General Plan. Hazard reduction programs are designed to improve the safety of existing development. For example, older structures, built to before Code standards, may need seismic upgrading. Other examples of the Program include strengthening pipelines and developing emergency back-up capability by public utilities serving the County; conducting regular fire safety inspections and fire flow tests to identify areas with cracked or damaged water lines; encouraging the construction of auxiliary water systems to supplement existing water lines; planning for emergency response at the government and individual level to reduce the risk to the public from hazards; and identifying unsafe structures and posting public notices.

Several policies pertaining to landslides, subsidence, expansive and collapsible soils are included in the Riverside County General Plan Public Safety element as noted below (Riverside County, 2003):

<u>Landslide Potential</u>

S 3.6: Require grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a project's ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.

<u>Subsidence, Expansive, and Collapsible Soils</u>

S 3.8: Require geotechnical studies within documented subsidence zones, as well as zones that may be susceptible to subsidence. Within the documented subsidence zones of the Coachella, San Jacinto, and Elsinore valleys, the studies must address the potential for reactivation of these zones, consider the potential impact on the project, and provide acceptable mitigation measures.

### *4.6.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Geology and Soils is defined by:

1. *Does the project 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 evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42)*

   II. *Strong seismic ground shaking*

   III. *Seismic-related ground failure, including liquefaction*

   IV. *Landslides*

2. *Does the project result in substantial soil erosion or the loss of topsoil*

3. *Would the project be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse*

4. *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC) (1997), creating substantial risks to life or property*

5. *Does the project 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*

### *4.6.4 Project Impacts*

***Does the project 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 evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42)***

According to the 2007 Interim Revision to the Alquist-Priolo Earthquake Fault Zoning Map (CGS, 2007), western Riverside County is a seismically active region. The project boundaries themselves are not within the Alquist-Priolo Zone. The northern portion of the PVL corridor is located approximately 6 miles southwest of the San Jacinto fault zone, while the southern portion of the corridor is located approximately 15 miles northeast of the Elsinore fault zone. Because no known faults intersect the existing rail corridor, implementation of the PVL commuter rail service would not expose people or structures to adverse effects related to surface fault rupture. Therefore, there would be no impacts from a known earthquake fault.

### *II. Strong seismic ground shaking*

The PVL corridor is located within the seismically active southern California region. Project elements including track, bridges, and stations would be designed in accordance with appropriate industry standards, including established engineering and construction practices and methods per the CBC, the National Engineering Handbook, current AREMA guidance documents, and existing SCRRA standards. Therefore, there would be no impacts from seismic shaking.

### *III. Seismic-related ground failure, including liquefaction*

Portions of the rail corridor are in areas subject to high potential for liquefaction. Those areas particularly susceptible include the vicinity of the MARB and the proposed March Field/Moreno Valley Station. Project elements including track, and stations would be designed in accordance with appropriate industry standards, including established engineering and construction practices and methods per the CBC, County of Riverside, the National Engineering Handbook, current AREMA guidance documents, and SCRRA standards. These industry recommendations will be followed during design and construction activities at the proposed March Field/Moreno Valley Station. Therefore, there would be no impacts for seismic-related ground failure, including liquefaction.

### *IV. Landslides*

The Safety Element of the Riverside County General Plan indicates that the northern portion of the PVL corridor adjacent to the Box Springs Mountain Reserve is highly susceptible to seismically induced landslides (Riverside County, 2003). Limited track work relating to construction is proposed for this area; therefore, there would be less than significant impacts during the construction of the PVL. Moreover, while the steep terrain around Box Springs may be subject to rock fall, igneous tonolite and granodiorite bedrock generally is not susceptible to landslides. Therefore, the PVL corridor is considered to have a low landslide potential (Kleinfelder, 2009). Engineering and design would comply with CBC, Riverside County Building and Safety Department Code, the National Engineering Handbook, AREMA guidance documents, and SCRRA standards. Because of engineering recommendations before and during construction, there would be no impacts during the operations and maintenance of this within the PVL corridor.

### *Does the project result in substantial soil erosion or the loss of topsoil*

Because the PVL commuter rail service would be implemented within an existing railroad corridor and adjacent properties, earth moving activities would be limited to the construction of the proposed stations and associated parking lots, communication equipment shelters and towers, and Layover Facility. Site preparation and excavation activities associated with construction of the new facilities may result in soil erosion or the loss of topsoil because of local precipitation and runoff.

In accordance with the requirements of the SWRCB, which administers the State's construction stormwater program, the proposed project, which will disturb more than one acre of soil, must obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit [CGP]). The CGP requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to reduce or eliminate soil loss. The SWPPP would identify BMPs to minimize erosion and sediment loss. SWPPP requirements are discussed in the Hydrology/Water Quality section of the report. (Section 4.8.2, Regulatory Setting). With implementation of a project specific SWPPP soil erosion would be no impact.

***Would the project be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse***

The underlying geology of the PVL corridor extends through three geologic units. The northern portion of the corridor, which includes the Citrus Connection, and Hunter Park Station options, to the I-215/SR 60 interchange, is underlain by foliated or fractured igneous rocks. A portion of the PVL corridor extending south from the I-215/SR-60 interchange is underlain by Pleistocene-age, fine-grained unconsolidated to moderately consolidated sediments. The San Jacinto River and its vicinity is made up of Holocene-age, fine-grained unconsolidated alluvial sediments, including stream channel, floodplain, alluvial fan, and lacustrine sediments. Collapse typically occurs in recent soils, such as Holocene deposits.

The PVL corridor is not located within the “Documented Area of Subsidence,” based on a review of the County of Riverside Subsidence Map; therefore there would be no impact regarding subsidence for the project.

Project elements including track, bridges, and stations will be designed in accordance with appropriate industry standards, including established engineering and construction practices and methods per the CBC, County of Riverside, the National Engineering Handbook, current AREMA guidance documents, and SCRRA standards. Because of the industry standards for engineering, and guidance recommendations before and during construction, there would be no impact during the operations and maintenance of this within the PVL corridor.

***Would the project be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (UBC) (1997), creating substantial risks to life or property***

Soils within the project corridor and the proposed station locations are generally well-drained sandy loams, which do not tend to be expansive. However, expansive soils (Willow series) are present along the SJBL alignment in the area around both San Jacinto River bridges and South Perris Station. Changes in soil volumes due to shrink-swell potential could result in adverse impacts to buildings at these locations. Impacts from expansive soils associated with the project in the vicinity of the San Jacinto River and proposed South Perris Station are reduced to no impact by engineering design based on site-specific geotechnical and geologic analysis along the PVL corridor. Construction of PVL including portions of the SJBL alignment, both bridges and South Perris Station will comply with CBC, Riverside County Building and Safety Department Code, the National Engineering Handbook, AREMA guidance documents, and SCRRA standards. Because of the industry standards for engineering, and guidance recommendations during design and construction, there would be no impact during the operations and maintenance of this within the PVL corridor.

***Does the project 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***

A wastewater connection is proposed at the Layover Facility for the project; and therefore, a septic system is not necessary for the project.

### *4.6.5 Mitigation Measures*

Engineering design will address site specific conditions and therefore no mitigation measures are identified related to geology and soils.

## 4.7 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential presence of hazardous materials within the PVL corridor, the potential for exposure to hazardous materials during and following construction, and the specific measures that would be employed to protect public health, worker safety, and the environment. A “hazardous material” is generally defined as any substance that poses a threat to human health or the environment. It is often used interchangeably with “contaminated material,” but should not be confused with the term “hazardous waste,” which is a regulatory term (Davis, 2006). “Hazardous waste” is defined in the USEPA regulations (40 CFR 261) and refers to a subset of solid wastes that are either specific wastes listed in the regulations (listed wastes) or solid wastes possessing the characteristic of ignitability, reactivity, corrosivity or toxicity (characteristic wastes) (Davis, 2006). Information within this section is based on the Hazardous Materials Corridor Study (HMCS) SJBL Alignment (Technical Study G), unless otherwise specified.

### *4.7.1 Environmental Setting*

The PVL corridor is an existing rail corridor that goes through light industrial, commercial, residential, and undeveloped areas. Adjacent land uses include residential, schools, parks, commercial, light industry, agriculture, and an active airport. Other infrastructure in the area includes natural gas and jet fuel pipelines. It should be noted that the freight trains may carry hazardous materials for delivery to existing clients on the corridor. However, freight train operations on the PVL are not part of this project, but are an existing condition of the railway. The project is not anticipated to increase freight train traffic because the freight train deliveries are market driven and not related to track condition. Additionally, it should be noted that RCTC has no control over the type of freight being transported along the corridor.

<u>Pipelines</u>

According to the Pipeline and Hazardous Materials Safety Administration’s National Pipeline Mapping System, hazardous material pipelines located within the PVL corridor include a six-inch jet fuel transmission pipeline operated by Kinder Morgan. A portion of the jet fuel pipeline extends from the Colton Terminal (2359 South Riverside Avenue) to the MARB (Cactus Avenue). Additional segments of the Kinder Morgan pipeline are located within the SJBL ROW from Service Road southward to Watkins Drive, and then reconnecting near Box Springs Boulevard to Cactus Avenue. A portion of the Kinder Morgan pipeline, within the PVL corridor, runs parallel to Highland Elementary School, within approximately 50 feet to the west.

A natural gas pipeline, operated by Kinder Morgan, transects the SJBL alignment at Columbia Avenue. Two other natural gas transmission pipelines operated by Southern California Gas Company intersect the PVL corridor near Cottonwood Avenue and Alessandro Boulevard.

<u>Airport Hazards</u>

The PVL corridor has two airports zoned within or near the project area. They are March Global Port/MARB (over one mile east) and the Perris Valley Airport (less than 0.25 miles west).

The PVL corridor and the proposed Moreno Valley/March Field Station are located within the boundaries of the airport land use plan of the MARB. The proposed station would be located predominantly within Accident Potential Zone (APZ) II, to the west of the airport, which allows for industrial and transportation uses. As currently designed, a small southerly segment of the station parking lot would be located within APZ I, to the west, which prohibits dense concentrations of people, but allows for parking lots (City of Perris, 2005).

In addition, the privately owned Perris Valley Airport is located approximately 500 feet southwest from the PVL corridor. The PVL corridor lies within the Perris Valley Airport Influence Area, from west of Goetz Road, along SJBL alignment, to just east of Murrieta Road.

Emergency Response Plans and Emergency Evacuation Plans

Riverside County and the City of Riverside have Emergency Operations Plans written to address the planned emergency responses associated with natural disasters and technological incidents. Each specifies its own level of response within their jurisdiction. Effective emergency management relies on thorough integration of emergency plans at all levels of government and non-government involvement.

The Emergency Management Office within the Riverside Fire Department coordinates emergency response and has prepared an Emergency Operations Plan (EOP) for the City of Riverside (Riverside Fire Department, 2002). Currently the City of Riverside is updating their EOP and associated evacuation plan (Anthony Coletta, Program Administrator for the Riverside UASI Regional Homeland Security Program).

The Riverside County Operational Area EOP, which is an extension of the State Emergency Program, focuses on defining and coordinating the appropriate departments that are directly involved with Riverside County emergency response activities (Riverside County, 2006). This plan is a multi-agency plan and also serves as a Multi-Hazard Functional Plan for the City of Perris. Along with setting forth emergency response plans and emergency evacuation plans, the EOP addresses terrorist strikes against MARB (City of Perris, 2004).

Wildland Fires

The Western Riverside County Natural Hazard Disclosure Map (Fire Map) provided by the California Department of Forestry and Fire Protection (CDFFP) was reviewed to determine the susceptibility of the PVL corridor to forest fire risks and hazards (CDFFP, 2000). According to the Fire Map, a section of the PVL corridor, east of Mt. Vernon Avenue to the I-215/SR-60 Interchange (near Box Springs Mountain) is shown to be in a wildland area that may contain substantial forest fire risks and hazards. Pursuant to Section 4125 of the PRC and requirements of maintenance listed in Section 4291 of the same code, the owner of the property is the responsible party for maintaining fire protection services unless CDFFP has entered into a cooperative agreement with a local agency for this area pursuant to Section 4142 of the PRC. This area of Box Springs Mountain has been incorporated into a Wildfire Management Plan, and is under State of California responsibility for fire protection. The remainder of the PVL corridor and adjacent properties are located in developed areas not shown within substantial fire risks or hazards.

Schools

There are fifteen schools located within one-quarter mile of the SJBL ROW. Safety is the first consideration in the selection of school sites, and certain health and safety criteria are necessary including proximity to power lines, presence of toxic and hazardous substances, hazardous air emissions and facilities with a quarter mile, proximity to railroads, proximity to high pressure natural gas lines, gasoline lines, and proximity to propane tanks. The schools and their addresses are listed below:

- Riverside Community College – 1155 Spruce Street, Riverside, CA
- University Middle School – 1155 Massachusetts Avenue, Riverside, CA
- University of California Riverside – 1000 West Blaine Street, Riverside, CA
- Highland Elementary School – 700 Highlander Drive, Riverside, CA
- Vineyard Christian School – 533 Massachusetts Avenue, Riverside, CA
- Seneca Elementary School – 11615 Wordsworth Road, Moreno Valley, CA
- Apple Tree Learning Center and Riverside Child Day Care – 220 West Big Springs Road, Riverside, CA
- Hyatt Elementary School – 4466 Mt. Vernon Avenue, Riverside, CA
- Red Maple and Sierra Vista Elementary School – 975 Morgan Street, Riverside, CA
- Val Verde Student Success Academy – 972 Morgan Street, Riverside, CA
- Nan Sanders Elementary School – 1461 North A Street, Perris, CA
- California Military Institute School – 755 North A Street, Perris, CA
- St. James School – 250 West 3rd Street, Perris, CA
- Perris Elementary School – 500 South A Street, Perris, CA
- Perris Community Day School – 515 East 7th Street, Perris, CA

Sites of Potential Environmental Concern

A site located on or adjacent to a facility, or former facility, which is of potential environmental concern may pose a hazard to public health and safety. An environmental concern is defined as anything that poses a potential risk to the quality of the groundwater in the area and to the health of individuals drinking from the groundwater (USEPA, 2000). A number of locations of potential environmental concern were identified within and adjacent to the PVL corridor, along the SJBL alignment (Figure 4.7-1).

A number of properties adjacent to the PVL corridor were identified as locations subject to unauthorized releases of substances from Underground Storage Tanks (USTs) and Above Ground Storage Tanks (ASTs). The Environmental Database Report (EDR) records indicate that the releases may have impacted soil and groundwater (Kleinfelder, 2008).

- 6400 Fischer Road, Riverside - diesel AST release
- 13260 Highway 215, Riverside - gasoline UST release
- 2 South D Street, Perris - gasoline UST release
- 24 D Street, Perris - gasoline UST release
- 101 and 102 South D Street, Perris - gasoline UST release and waste oil release
- 210 West San Jacinto Avenue, Perris - gasoline and diesel UST release

Other sites of potential environmental concern include:

- The proposed Palmyrita option for the Hunter Park Station. Hazardous materials impacts associated with this parcel include: a former UST, a remote fill port, ASTs, a 55-gallon drum containing an unidentified substance, a cooling tower, a sump and soil staining. This site is currently undergoing development by a private developer; and it is not known at this time if the Phase I environmental recommendations were followed during site preparation.

- Three 55-gallon drums were observed within the PVL corridor, but outside the construction area, at the base of a ravine adjacent to the SJBL alignment at the Manfield Street eastern terminus. Due to the steep terrain leading to the drums, the contents of the drums are presently undetermined, and will not be disturbed during construction.

According to the EDR contained in the HMCS, approximately 75 gallons of diesel were released onto the railroad tracks during an automobile accident in 2001, to the south of Fair Isle Drive. It is possible that residual diesel is currently present on the railroad tracks.

### *4.7.2 Regulatory Setting*

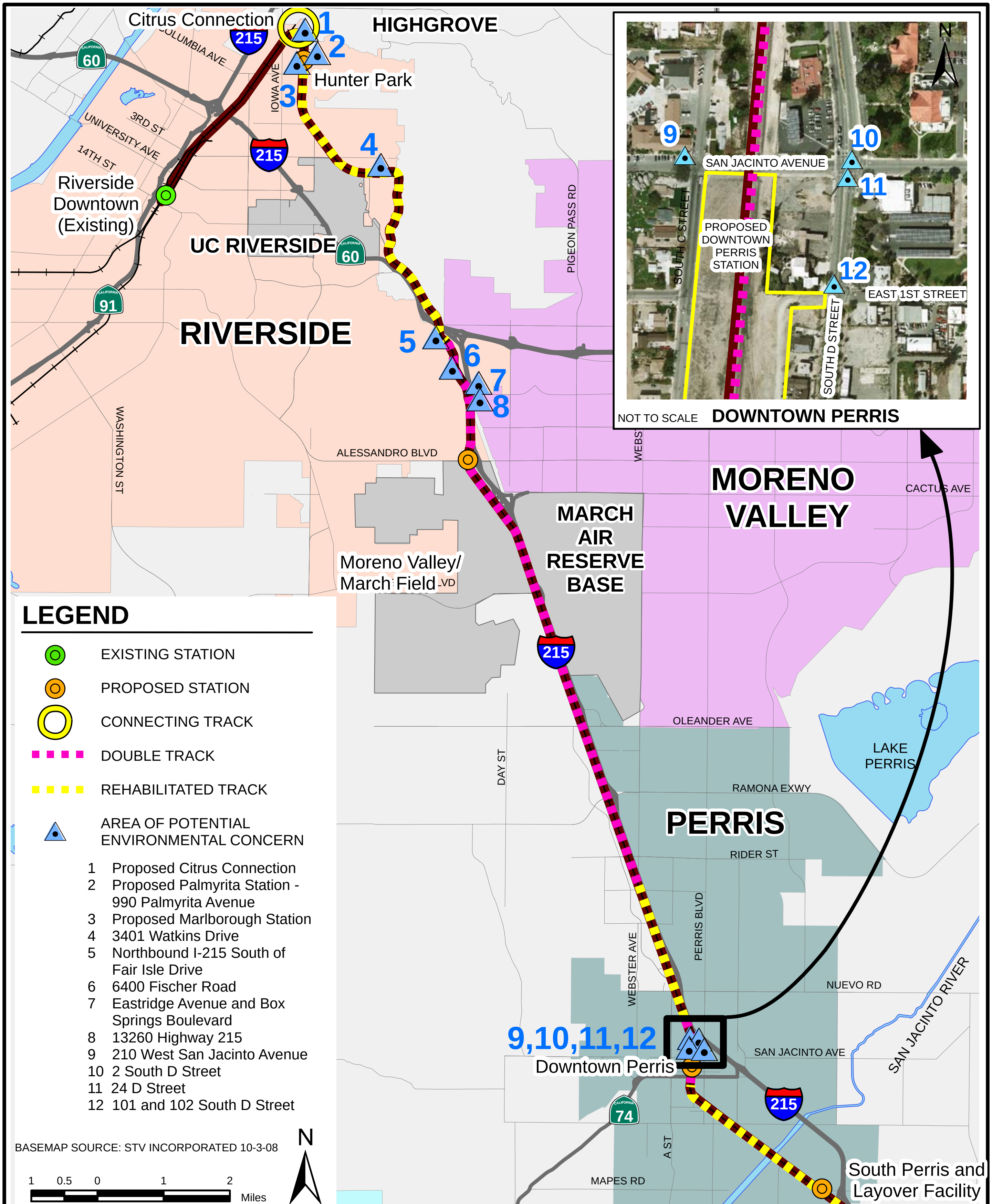
#### Federal Policies and Regulations

*Comprehensive Environmental Response, Compensation, and Liability Act*

The U.S. Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in 1980. The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental health threat. Under CERCLA, the USEPA maintains a list, known as CERCLIS, of all contaminated sites in the nation that have to some extent or are currently undergoing clean-up activities. CERCLIS contains information on current hazardous waste sites, potential hazardous waste sites, and remedial activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL. The Hazard Ranking System within the CERCLIS database is used to determine whether a site should be placed on the NPL for cleanup activities (USEPA, 2000).

*Superfund Amendments and Reauthorization Act*

The Superfund Amendments and Reauthorization Act (SARA) pertain primarily to emergency management of accidental releases. Passed by the U.S. Congress in 1986, it requires formation of State and local emergency planning committees, which are responsible for collecting material handling and transportation data for use as a basis for planning. Chemical inventory data is made available to the community at large under the "right-to-know" provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxics Release Inventory (USEPA, 2000).

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| PROJECT NO. | 92666 |
| DRAWN: | 12/11/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666envconEIR.MXD |

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE 4.7-1

*Emergency Planning and Community Right-To-Know Act*

The Emergency Planning & Community Right-to-Know Act was enacted by Congress as the national legislation on community safety in 1986, under Title III of the SARA. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards. To help Emergency Planning & Community Right-to-Know Act be put into action, Congress requires each state to appoint a State Emergency Response Commission. The State Emergency Response Commissions are required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district. Fire fighters, health officials, government and media representatives, community groups, industrial facilities, and emergency managers help make sure that all necessary elements of the planning process are represented (USEPA, 2000).

*Hazardous Materials Transportation Act*

The Hazardous Materials Transportation Act is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, highways, through air, or in pipelines. It includes provisions for material classification, packaging, marking, labeling, placecarding, and shipping documentation (County of Riverside, 2003).

*Resource Conservation and Recovery Act*

The Resource Conservation and Recovery Act (RCRA) Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for USTs that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

State Policies and Regulations

*California Hazardous Waste Control Law*

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in the State of California. The HWCL implements RCRA as a "cradle-to-grave" waste management system in the State of California. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds federal requirements by mandating source reduction planning, and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by Federal law with RCRA.

*California Code of Regulations*

Most State and Federal regulations and requirements that apply to generators of hazardous waste are listed within the CCR, Title 22, Division 4.5. Title 22 contains the compliance requirements for hazardous waste generators, transporters, and treatment, storage, and disposal facilities. Because California is a fully authorized State according to RCRA, most RCRA regulations (those contained in 40 CFR 260 *et seq*.) have been duplicated and integrated into Title 22. However, because the Department of Toxic Substances Control (DTSC) regulates hazardous waste more stringently than the USEPA, the integration of California and Federal hazardous waste regulations that make up Title 22 do not contain as many exemptions or exclusions as does 40 CFR 260. As with the California Health and Safety Code, Title 22 also regulates a wider range of waste types and waste management activities than does the RCRA regulations in 40 CFR 260. To aid the regulated community, California compiled the hazardous materials, waste and toxics-related regulations contained in CCR, Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27 into one consolidated CCR Title 26 'Toxics.' However, the California hazardous waste regulations are still commonly referred to as Title 22 (DTSC, 2009).

*State Aeronautics Act (CPUC, §21670 et seq.)*

The State Aeronautics Act created the requirement for an Airport Land Use Commission (ALUC) in each county and establishes statewide requirements for the conduct of airport land use compatibility planning. State statutes require that, once an ALUC has adopted or amended an airport land use compatibility plan, the county—where it has land use jurisdiction within the airport influence area—and any affected cities must update their General Plans and any applicable specific plans to be consistent with the ALUC's plan (CGC, §65302.3). The California Airport Land Use Planning Handbook is published by the Caltrans Division of Aeronautics and its purpose is to support and amplify the State article (City of Perris, 2005).

*CPUC Guidelines for the Federal Aid At-Grade Highway-Rail Crossing Program (§130 Program)*

The purpose of Section 130 Program is to reduce the number, severity and potential of hazards to motorists, bicyclists, and pedestrians at crossings. The Section 130 Program is a cooperative effort between the FHWA, Caltrans, CPUC, railroad companies and local agencies. Eligible grade crossings are taken through a prioritization process in which they are ranked by hazard potential, put onto a final priority list, and the associated projects are contracted by Caltrans for abandonment, closure, or updating (CPUC, 2006).

*California Education Code (§17210 et seq.)*

The California Education Code (CEC) (§17210 *et seq*.) describes the requirements of school facilities near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste (5 CCR 13). The code requires that, prior to commencing the acquisition of property for a new school site, an environmental site investigation be completed to determine the health and safety risk (if any) associated with a site. All proposed school sites must be suitable for residential land use, which is DTSC's most protective standard for children (City of Riverside, 2007).

*CCR, Title 5, §14010 (School Site Selection Standards), and CEC, §17212*

Within the CCR Title 5, and under the existing Leroy F. Greene School Facilities Act of 1998 (5 CCR 13), there are certain criteria described for selecting or siting schools in regards to power line setbacks, railroad track setbacks, pipeline and fuel storage tanks, and hazardous waste setbacks (California Department of Education, 2009). The following is a partial list of minimum setback distances for school sites:

1. Power lines - 1,500 feet
2. Railroad tracks - 1,500 feet
3. On site fuel tank storage
4. On site hazardous pipelines or hazardous pipeline easements - 1,500 feet

<u>Local Policies and Regulations</u>

*Ordinance No. 615.3*

This ordinance has been implemented for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated, or recycled and to regulate the issuance of permits and the activities of establishments where hazardous waste is generated. This ordinance designates the Riverside County Department of Environmental Health (RCDEH) to enforce the provisions of the California Health and Safety Code, Chapter 6.5, Division 20, §§25100 *et seq*., and the Environmental Health Standards for the Management of Hazardous Waste as specified in Title 22 of the CCR, Division 4.5 pertaining to the generation, storage, handling, disposal, treatment, and recycling of hazardous waste (Riverside County, 2003).

*Riverside County Hazardous Waste Management Plan Safety Policies*

The Riverside County Hazardous Waste Management Plan has established policies, programs, and criteria to minimize the effect of prospective growth on the use and generation of hazardous materials. These plan policies have been adopted as "Safety Policy 6.1" in the County of Riverside General Plan and are described below:

1. Compliance with the Federal and State laws pertaining to the management of hazardous wastes and material;
2. Public participation in hazardous waste and hazardous materials management decisions in Riverside County;
3. Coordination of hazardous waste facility responsibilities through the Southern California Hazardous Waste Management Authority; and,
4. Encouragement and promoting the programs, practices, and recommendations contained in the Riverside County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.

*Safety Policy 7.3*

This Riverside County General Plan policy requires commercial businesses, utilities, and industrial facilities that handle hazardous materials to install automatic fire and hazardous materials detection, reporting, and shut-off devices; and install an alternative communication system in the event that the power is out or telephone service is saturated following an earthquake (Riverside County, 2003).

*Riverside County Airport Land Use Compatibility Plan*

The Riverside County Airport Land Use Compatibility Plan designates zones of airport influenced areas for airports in Riverside County and proposed a series of policies and compatibility criteria to ensure that both aviation uses are surrounding uses may continue and are compatible (Riverside County, 2003).

*City of Riverside Municipal Code*

Title 14 Public Utilities of the Municipal Code, Chapter 14.12 Discharge of Wastes into the Public Sewer and Storm Drain Systems, §14.12.315, prohibits waste discharges by a person or user into a collection system of the City or a Community Services District (City of Riverside, 2007).

*Emergency Operations Plans*

Emergency Operations Plans for the City of Riverside and Riverside County have been written to address the planned emergency responses associated with natural disasters and technological incidents. Each specifies its own level of response within their jurisdiction.

### *4.7.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Hazards and Hazardous Materials is defined by:

1. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials*

2. *Would the project 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*

3. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school*

4. *Would the project be located on a 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*

5. *Would the project be 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*

6. *Would the project be within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area*

7. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan*

8. *Would the project expose people or structures to a significant loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands*

### *4.7.4 Project Impacts*

***Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials***

The PVL corridor is an existing rail corridor that goes through light industrial, commercial, residential, and undeveloped areas. Adjacent land uses include residential, schools, parks, commercial, light industry, agriculture, and an active airport. Other infrastructure in the area includes natural gas and jet fuel pipelines.

Construction activities associated with the proposed project would involve the use of small volumes of commercially available hazardous materials, such as petroleum products (gasoline, diesel, and other oils), brake fluids, coolants, and paints. The use of these substances is governed by existing hazardous materials regulations, and would not adversely affect on-site construction workers or the public.

As a commuter rail line, PVL service is passenger only. As such, there would never be an occasion when hazardous materials would be transported on commuter trains. Any such materials incidental to construction and operational activities, including routine maintenance, would be required to be stored, used, and disposed of in accordance with existing federal, state, and local hazardous materials regulations, and would not adversely affect on-site construction workers or the public.

Each communication equipment shelter within the PVL corridor would contain a 250-gallon propane AST. Several arrays of batteries containing regulated heavy metals would also be located within the equipment shelters. The propane tanks would be used to operate emergency generators in the equipment shelters. Each of the tanks would be mounted on a concrete pad and permitted through the RCDEH. The ASTs would also be included in the Hazardous Materials Business Plan for the PVL project, which is kept on file with RCDEH. The storage and use of the heavy metals is regulated by federal, state, and county hazardous materials regulations.

The proposed Layover Facility would include portable track pans at each track to catch drips during emergency fueling. Routine fueling of the trains will not take place within the PVL project corridor. Regular or routine fueling will be at either the Colton (north of project area) or Taylor

Yard (north of LA Union Station), outside of the project area. It is expected that up to four trains would be stored at this facility overnight and could receive routine maintenance. Drip pans would be installed where engines are located, in order to catch any dripping or leaking fuel oil, lubrication, or hydraulic fluid from engines laid-up in the yard. There would be a train inspection pit located under one of the tracks. The pit allows train mechanics to inspect the undercarriage of the train and perform any minor maintenance that may be necessary. Drainage from the drip pans and inspection pit would be directly connected to an oil/water separator system for treatment prior to discharge into the sanitary sewer system.

A construction SWPPP will be prepared and put into place during the construction of the entire project including the Layover Facility. As part of the Construction General Permit (CGP) requirements, the SWPPP will also include BMPs to minimize the potential for leaks and spills during operations (Kleinfelder, 2009). The SWPPP preparation is discussed in the Hydrology/Water Quality Section of this report

Because only small volumes of hazardous materials anticipated to be used during construction operations, and maintenance, there will be no impacts due to the implementation of the project.

***Would the project 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***

Construction activities associated with the proposed project would involve the use of small quantities of hazardous materials. Hazardous materials will be required to be stored, used, and disposed of in accordance with existing federal, state, and local agency hazardous materials regulations.

Operation and maintenance activities associated with the proposed project would also involve the use of small quantities of hazardous materials. As previously stated, hazardous materials would be required to be stored, used, and disposed of in accordance with existing federal, state, and local agency hazardous materials regulations.

The pipelines located within the existing rail ROW were installed in accordance with the safety requirements of the owners. The pipelines are buried at a minimum of three feet below ground surface, or deeper if they are closer than 40 feet to the rail line, and/or are encased. There have been no reported leaks from the previously mentioned pipelines within or adjacent to the PVL corridor. There would not be an adverse effect on the environment, on-site workers, or the public during operation and maintenance of the PVL trains in these areas; therefore, there will be less than significant impacts through the implementation of the project from these pipelines.

Derailment could cause an accidental spill from the SCRAA/Metrolink train engines or diesel fuel tanks. It should be noted that the BNSF freight history has about 4.5 million freight train miles since 1993 (first full year of operation) and during this time, there have been only three freight train derailments. This equates to about one derailment per 1.5 million train miles or 0.000000667 (STV, 2009).

On the SJBL, BNSF operates 11,440 train miles per year. The annual derailment risk is then the product of 0.000000667 (risk per train mile) and 11,440 miles, or 0.00801. This derailment risk equates to about once every 124 years. (STV, 2009).

The numbers noted above represent an extremely low risk of derailment. This analysis, coupled with the PVL track improvements being made to the latest standards as dictated by FRA and SCRAA/Metrolink design criteria, will further decrease the risk of derailment potential. SCRAA/Metrolink would also regularly inspect the track to ensure safe operating conditions.

Due to the small volumes of hazardous materials anticipated to be used, safety practices, inspections, and design criteria for the PVL project, there would be no impacts.

***Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school***

Construction activities associated with the PVL project, near the schools, would involve the use of small volumes of commercially available hazardous materials, such as petroleum products (gasoline, diesel, and other oils), brake fluids, coolants, and paints. The use of these substances is governed by existing hazardous materials regulations. The construction of the PVL project would not include power lines or propane tanks within a 1,500-foot setback of the schools, nor would the project introduce newly constructed high pressure natural gas lines or gasoline lines.

Currently, the BNSF operates freight service along the SJBL corridor. The train engines contain oil and diesel fuel, in order to operate. Additionally, it should be noted that, on occasion, freight trains carry hazardous material for delivery to customers along the corridor, however, the PVL commuter trains would only contain oil and diesel fuel, in order to operate.

Section 4.3 Air Quality of this report notes that sensitive receptor sites, including schools are near mobile source emissions generated from freight trains using the SJBL, and from vehicles using the adjacent SR-60 and I-215 corridors. It is also noted that most PVL trains would pass by the schools either prior to the beginning of the school day or after the end of the day, resulting in less potential exposure to emissions. Simultaneously, vehicle emissions would be reduced with a shift of modes from private vehicles to the PVL and other reductions in mobile source pollution through increased vehicular speeds on the major vehicular corridors. Using the available interim guidance from the FHWA, the project is categorized as having low potential emission effects.

Exposure to MSATs as a risk to schools would result from the sitting of a new fixed, continuously operating point source of pollution, such as a stack from a factory. With an engine and the proposed train sets for the PVL, exposure to $PM_{10}$ in diesel exhaust from passing commuter trains would be limited. The trains would pass by schools very quickly, for only several seconds along the PVL between stations. For most PVL movements, schools would not be in session, as most scheduled runs occur either before the start of the school day or after its completion. Opportunity for exposure to emissions is limited in occurrence and duration and is therefore no impact.

***Would the project be located on a 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***

The HMCS has identified locations of potential environmental concern within and adjacent to the PVL corridor. The sites of potential environmental concern are shown on Figure 4.7-1. The locations appearing on hazardous material site lists that pose an environmental concern to the PVL rail corridor are summarized below.

The Citrus Connection and selected Hunter Park Station options at Palmyrita and Marlborough were historically used for agricultural purposes. Therefore, it is possible that increased amounts of pesticides and/or herbicides are present at these sites. Soil excavation activities are proposed to take place at this site prior to the construction phase of the project and, as such, there may be hazards related to the soil for construction workers and the environment.

According to the EDR contained in the HMCS, approximately 75 gallons of diesel were released onto the railroad tracks during an automobile accident in 2001, to the south of Fair Isle Drive. It is possible that residual diesel is currently present on the railroad tracks. Since track rehabilitation is proposed for this segment, it is not anticipated that soil would be disturbed or excavated, and therefore, the health and safety of the construction workers would not be affected. The health and safety of the general public and railroad workers would not be affected during the operation and maintenance of the PVL. Therefore, there would be no impacts from the release by the implementation of the project.

A number of properties adjacent to the PVL corridor were identified as locations subject to unauthorized releases of substances from USTs and ASTs. The EDR records indicate that the releases may have impacted soil and groundwater. These releases may have an adverse effect to workers during excavation and dewatering activities in the construction phase. The following sites may have negative effects to the health and safety of construction workers during construction activities of the project, due to the proposed disturbance or excavation of soil within the PVL corridor:

- 6400 Fischer Road, Riverside - diesel AST release
- 13260 Highway 215, Riverside – gasoline UST release
- 2 South D Street, Perris - gasoline UST release
- 24 D Street, Perris - gasoline UST release
- 101 and 102 South D Street, Perris - gasoline UST release and waste oil release
- 210 West San Jacinto Avenue, Perris – gasoline and diesel UST release

Because of the potential for soil contamination at the sites discussed above, there is a potential for significant impacts within the PVL project area (Mitigation measure HHM-1).

***Would the project be 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***

The PVL corridor and the proposed Moreno Valley/March Field Station are located west of I-215 and MARB airport, and within the boundaries of the airport land use plan of MARB. The proposed station would be located predominantly within APZ II, which allows for industrial and transportation uses. As currently designed, a small southerly segment of the proposed parking lot associated with the station would be located in APZ I, which prohibits dense concentrations of people, but allows for parking lots (March JPA 2003). The Riverside County ALUC and March JPA ~~will~~ has reviewed RCTC's application to construct to ensure zone compatibility. On October 14, 2010 the Riverside County ALUC determined that the Moreno Valley/March Field Station to be consistent with airport land use plan subject to the following conditions:

1. Prior to the issuance of building permits, RCTC shall convey an avigation easement (airports require easements to protect the airspace used by aircraft during takeoff and landing) to the March Inland Port Airport Authority.
2. Any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.
3. The following uses shall be prohibited:
    a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.
    b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.
    c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, livestock operations, production of cereal grains, sunflower, and row crops, artificial marshes, wastewater management facilities, composting operations, trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, incinerators, and landfills.)
    d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.
    e. Children's schools, hospitals, nursing homes, and highly noise-sensitive outdoor nonresidential uses.
4. Any ground-level or aboveground water retention or detention basin or facilities shall be designed so as to provide for a detention period for the design storm that does not exceed 48 hours (may be less, but not more), and to remain totally dry between rainfalls. Vegetation in and around such facilities that would provide food or cover for bird species that would be incompatible with airport operations shall not be utilized in project

landscaping. Landscaping shall utilize plant species that do not produce seeds, fruits, or berries. Trees shall be spaced so as to prevent large expanses of contiguous canopy when mature.

5. Any proposed use identified on the site plan as a future use shall be reviewed by ALUC for consistency when proposed for a specific development.

The conditions of approval set by the ALUC for the Moreno Valley/March Field Station are included in the PVL project Specifications. Because the proposed Moreno Valley/March Field Station is within appropriate zoning uses, impacts would be no impact.

***Would the project be within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area***

The Perris Valley Airport is located immediately south of Ellis Avenue and southwest of Case Road, approximately 500 feet southwest from the existing rail corridor. The airport is largely used for skydiving. The PVL corridor lies within the Perris Valley Airport Influence Area, from west of Goetz Road, along SJBL, to just east of Murrieta Road, including the South Perris Station. In this Influence Area, only residential uses "are to be limited to areas not in the actual flight path and to areas where aircraft have gained sufficient altitude so as to no longer pose a relative safety threat" (City of Perris, 2005). Implementation of the PVL is not expected to result in a safety hazard for any people residing or working in the project area. The Perris Valley Airport is currently drafting a land use plan.

1. The Riverside County ALUC has reviewed RCTC's application to construct to ensure zone compatibility. On October 14, 2010 the Riverside County ALUC determined that the South Perris Station to be consistent with airport land use plan subject to the following conditions:
2. Prior to the issuance of building permits, RCTC shall convey an avigation easement to the March Inland Port Airport Authority.
3. Any outdoor lighting installed shall be hooded or shielded to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.
4. The following uses shall be prohibited:
    a. Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.
    b. Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.
    c. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, livestock operations, production of cereal grains, sunflower, and row crops, artificial marshes, wastewater management facilities, composting operations,

trash transfer stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, incinerators, and landfills.)

d. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.

e. Children's schools, hospitals, nursing homes, and highly noise-sensitive outdoor nonresidential uses.

5. Any ground-level or aboveground water retention or detention basin or facilities shall be designed so as to provide for a detention period for the design storm that does not exceed 48 hours (may be less, but not more), and to remain totally dry between rainfalls. Vegetation in and around such facilities that would provide food or cover for bird species that would be incompatible with airport operations shall not be utilized in project landscaping. Landscaping shall utilize plant species that do not produce seeds, fruits, or berries. Trees shall be spaced so as to prevent large expanses of contiguous canopy when mature.
6. Structure height shall not exceed 40 feet, and no structure shall be located less than 3,841 feet from any point on the centerline of the runway at Perris Valley Airport, unless the Federal Aviation Administration has first issued a Determination of No Hazard to Air Navigation for said structure.

The conditions of approval set by the ALUC for the South Perris Station are included in the PVL project Specifications. The PVL corridor within the Perris Valley Airport Influence Area has no said restrictions besides residential development; therefore, impacts will be less than significant.

***Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan***

During construction activities, the proposed project will require temporary re-routing of emergency response routes to avoid street closures. However, prior to construction, local emergency services for the project so that alternative travel routes can be identified prior to the road closure. Routine operation and maintenance of the PVL corridor would not interfere with emergency response or evacuation plans. There would be no impact with mitigation in place (Mitigation measure HHM-3).

***Would the project 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 residences are intermixed with wildlands***

A section of the PVL corridor, east of Mt. Vernon Avenue to the I-215/SR-60 Interchange is shown to be in a wildland area that may contain substantial forest fire risks and hazards. This area of Box Springs Mountain Reserve has been incorporated into a Wildfire Management Plan, and is under State of California responsibility for fire protection.

Evacuation plans caused to be put into effect by a wildland fire may be affected during construction activities because the proposed project will be temporarily closing streets or grade crossings will be temporarily closed or re-routed in this area. Routine operation and maintenance of the PVL corridor would not interfere with daily operations at the grade crossings and streets associated with these crossings. There would be no impact with mitigation in place (Mitigation measure HHM-4).

### *4.7.5 Mitigation Measures*

- HHM-1: ~~Where s~~Soil contamination is suspected at the following locations~~, appropriate sampling is required prior to disposal of excavated soil. Soil characterization is necessary prior to any ground-disturbing activities. Contaminated soil will be properly disposed at an off-site facility. The following sites will be characterized for possible soil contamination before excavation and/or construction activities begin~~:

  - 6400 Fischer Road, Riverside – diesel AST release
  - 13260 Highway 215, Riverside – gasoline UST release
  - 2 South D Street, Perris – gasoline UST release
  - 24 D Street, Perris – gasoline UST release
  - 101 and 102 South D Street, Perris – gasoline UST release and waste oil release
  - 210 West San Jacinto Avenue, Perris – gasoline and diesel UST release

  Prior to construction ~~S~~soil characterization ~~activities including~~shall occur and includes sampling and analysis, and drilling ~~will~~ shall be coordinated with and under the guidance of the Riverside County Department of Environmental Health. RCTC ~~will~~ shall contract with a qualified environmental consultant to determine if the soil has been sampled, characterized and disposed of properly according to state and federal regulations.

- HHM-2: If the Palmyrita Avenue site is selected for the Hunter Park Station, but is not properly remediated prior to acquisition, RCTC ~~will~~ shall require the ~~potentially~~ responsible party to remove and remediate hazardous conditions and materials pursuant to the requirements of the local, state, and federal regulations. If, prior to acquisition, the current property owner does not complete proper remediation, RCTC ~~will~~ shall perform the remediation in accordance with a Health and Safety Plan, and in accordance with the required protocols for the removal and disposal of hazardous materials.

  Because of the potential for soil contamination, sampling and disposal plans ~~will~~ shall be implemented ~~prior to construction~~Pre-Construction according to a site-specific hazardous materials investigation work plan.

- HHM-3: ~~Before~~ Prior to construction ~~activities commence,~~ RCTC ~~will~~ shall ~~develop~~ prepare a traffic management plan. ~~prior to starting construction.~~ The ~~contractor will also~~traffic management plan ~~work~~ shall be prepared in consultation with local jurisdictions to determine ~~minimize impacts to existing emergency response or evacuation routes. At a minimum, the traffic management plan will address:~~ detour~~s~~ routes, ~~; coordination with other construction projects (if applicable);~~ length and timing of any ~~street~~ closures; temporary access routes, signage, ~~length and timing of any grade crossing closures;~~ coordination with police and fire departments regarding changes in emergency access routes. An additional component of the plan shall be coordinating with local emergency response agencies to identify emergency evacuation routes in the event of a wildland fire near PVL facilities. This plan is intended to cover the requirements of Mitigation Measure HHM-4 and TP-6.~~; temporary access routes and signage if any commercial properties are affected; and contact information for RCTC and its contractors.~~

- HHM-4: See Mitigation Measure HHM-3 above.~~Before construction activities commence, RCTC will develop a traffic management plan prior to starting construction. The contractor will also work with local jurisdictions to minimize impacts to existing emergency response or evacuation routes for wildland fires. At a minimum, the traffic management plan will address: detours; coordination with other construction projects (if applicable); length and timing of any street closures; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes and signage if any commercial properties are affected; and would contain contact information for RCTC and the project contractors.~~

### *4.7.6 Mitigation Summary*

The hazards and hazardous materials mitigation measures are related to construction worker safety, local regulations, and appropriate emergency planning. Appropriate soil characterization is important for worker safety as well as knowing the appropriate soil disposal requirements if necessary. The sites identified in the mitigation measures are areas where there is suspected soil contamination. Soil characterization should be completed prior to soil disturbing activities in the areas immediately surrounding the addresses listed.

Appropriate emergency planning is a communication tool for agencies to relay project information to emergency, or first responders. This planning includes appropriate notification of planned road closures, appropriate project personnel to contact in an emergency, and expected maintenance activities to reduce the long term risk of unexpected events causing local access restrictions.

## 4.8 HYDROLOGY/WATER QUALITY

This section analyzes the potential impacts on surface water quality, groundwater, flooding, and stormwater runoff, and assesses their impact in relation to the construction, operation, and maintenance of the proposed PVL project.

Water quality is the physical, chemical, and biological characteristics of water. Changes to water quality can result from flowing through developed areas, soil, or rock material. The effects can be identified in both surface water and/or groundwater depending on local surface topography as well as subsurface soil types.

The information in this section, unless otherwise specified, is based on the *Perris Valley Draft Hydrology Report Volume I* (J.L. Patterson & Associates, Inc., 2009) and the *Perris Valley Draft Hydrology Report Volume II San Jacinto River Analysis* (AECOM, 2009).

### *4.8.1 Environmental Setting*

In the northern sections of the PVL corridor, the general drainage flows from east to west out of the Box Springs Mountains. Springbrook Wash runs through the BNSF and SJBL alignments south of Citrus Street and the proposed Citrus Connection in the city of Riverside. Springbrook Wash eventually leads to the Santa Ana River. Further south, in Box Springs Canyon, the general flow follows the canyon south, parallel to the SJBL alignment. The SJBL alignment runs south through Perris Valley, where drainage flows out of the hills from west to east across the alignment, then southwest toward the San Jacinto River. Municipal Separate Storm Sewer Systems (MS4) are the local municipal stormwater drainage systems that transport this runoff water away.

The San Jacinto River flows out of the San Jacinto Mountains, crosses under the SJBL alignment at the southern end of the Perris Valley and continues to flow down Railroad Canyon, into Canyon Lake, to Lake Elsinore, and eventually to the Santa Ana River. During large storms, runoff from the upper San Jacinto River and Perris Valley flows to Mystic Lake, a natural sump formed by local subsidence. The lake is relatively shallow and has a large surface area. When full, Mystic Lake has been observed to maintain a substantial volume with little or no transport back to the San Jacinto River. During periods of extended rain, the storage capacity of the lake is exceeded resulting in outflow to the San Jacinto River.

The San Jacinto River intersects the SJBL alignment near the southern boundary of the PVL corridor at two bridges; the San Jacinto River Bridge and the San Jacinto River Overflow Channel Bridge.

Flow rates in the project area are significantly influenced by upstream detention provided by Mystic Lake and the wide, flat topography that makes up the Perris Valley. The Perris Valley is extremely flat causing flood waters to move slowly and spread out over a broad area. The expanse of flooding in Perris Valley is further affected by the sudden constriction presented at the entrance to the upper end of Railroad Canyon located southwest of Perris. The restriction of flow and flat topography of the valley causes a ponding situation and flood waters back up for a distance of over seven miles upstream.

### *4.8.2 Regulatory Setting*

Federal Policies and Regulations

*Water Pollution Control Act*

The federal Water Pollution Control Act (also known as the CWA) is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff (33 USC 1251 *et seq*.). These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters (USEPA, 2009).

According to the CWA, the only way pollutants can be discharged into water is if authorized by a NPDES permit (USEPA, 2009). Originally, the NPDES permit focused on reducing pollutants from discharges from industrial process wastewater and municipal sewage treatment plants. In 1987, the CWA was amended to require the USEPA to regulate stormwater discharges through the use of the NPDES stormwater permits. The NPDES permit program is administered by authorized states, including California.

*Federal Emergency Management Agency*

The Federal Emergency Management Agency (FEMA) is an agency of the United States Department of Homeland Security with the primary purpose to coordinate response to disasters that overwhelm the resources of local and state authorities (FEMA, 2009). President Carter's 1979 Executive Order merged various functions of disaster assistance and civil defense (previously handled by multiple agencies) under the direction of a single agency, FEMA. FEMA was created to coordinate the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror.

*National Flood Insurance Program*

Created in 1968, the National Flood Insurance Program (NFIP) is managed by the Federal Insurance and Mitigation Administration and the Mitigation Directorate, which are components of FEMA. NFIP is a federal insurance program under which flood-prone areas are identified and flood insurance is made available to residents of participating communities that agree to adopt and enforce floodplain management ordinances (FEMA, 2009). Currently over 20,100 communities voluntarily adopt and enforce local floodplain management ordinances that provide flood loss reduction building standards for new and existing development. The goal of NFIP is to reduce the loss of life, damage to property and rising disaster relief costs in areas with high flood risks. There are three components of NFIP:

(1) Floodplain Management - Floodplain management is the operation of a community program of corrective and preventative measures for reducing flood damage. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain ordinances. As a component of floodplain management, the NFIP works to enforce no-build zones in known

floodplains and relocate or elevate some at-risk structures so that development within floodplains would not exacerbate flooding in adjacent areas.

(2) Flood Insurance – Federal flood insurance options are made available to residents in communities that choose to adopt and enforce floodplain management ordinances. Flood insurance premium rates depend on what flood zone a resident is located in. Flood zones are geographical areas that FEMA has defined according to varying levels of flood risk, and are shown on Flood Insurance Rate Maps (FIRM).

(3) Flood Hazard Mapping – Flood hazard maps, also known as FIRM, indicate areas with low, moderate, or high risk for flooding, and provide the data needed for floodplain management programs and to actuarially rate new construction for flood insurance. FIRMs specifically illustrate a community's floodplain boundaries, base flood elevations (BFE), and flood zones. Floodplain boundaries are the areas of land that could be impacted by flooding from a nearby body of water. BFE is the computed elevation (or height) to which floodwater is anticipated to rise during a 100-year flood. A 100-year floodplain is not an area subject to floods every 100 years; instead, it is land bordering a river or channel that can expect to be flooded in a storm that has a one-percent chance of occurring each year. 100-year floods are used by the NFIP as the standard for floodplain management and to determine the need for and cost of flood insurance.

There are low, moderate, and high risk flood zone areas. Moderate to low risk areas include zones that are either outside the 100-year floodplain, areas that have a one percent annual chance where the average flood depth is less than one foot, or where the contributing drainage area is less than one square mile. Purchasing flood insurance is not required in these zones. High risk flood zones, labeled as Special Flood Hazard Areas (SFHAs) on FIRM, are areas subject to inundation by a 100-year flood. It is mandatory that flood insurance be purchased within these zones (FEMA, 2009).

*No-Rise Determination*

The NFIP and participating communities, including areas within the PVL project area, require that development within floodplains does not exacerbate flooding in adjacent areas. A floodway and the adjacent land areas must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation. Therefore, the participating communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. Title 44 of the CFR, § 60.3(d)(3), states:

> *"A community shall prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge" (CFR, 2001).*

Prior to issuing any development permits involving activities in a regulatory floodway, the community must obtain a No-Rise Certification stating the proposed development would not impact the pre-project BFEs, regulatory floodway elevations, or regulatory floodway widths (FEMA, 2009). An engineering analysis must be conducted before a permit can be issued. The community's permit file must have a record of the results of this analysis, which can be in the form of a No-Rise Certification.

*General Code of Operating Rules*

The General Code of Operating Rules (GCOR) was developed to document standardized operating practices for railroads. GCOR is currently used by the BNSF railroad, and every Class I railroad west of the Mississippi River, most of the Class II railroads, and numerous shortline railroads (U.S. Department of Transportation, 1999). GCOR is essentially a non-regulatory set of rules and guidelines that are in place to enhance railroad safety.

One guideline (6.21.2) addresses flooding along railroads. This guideline states that if rails have been overtopped by flooding, operations must be suspended until the railroad tracks have been inspected and verified as safe (GCOR, 2005).

<u>State Policies and Regulations</u>

*Porter-Cologne Water Quality Act*

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Act (Porter-Cologne Act) to preserve, enhance and restore the quality of the State's water resources (SWRCB, 2009). The Porter-Cologne Act establishes water quality policies, enforces water quality standards for surface and ground water, and regulates discharges of pollutants SWRCB, 2009). The Porter-Cologne Act establishes the SWRCB and nine RWQCBs as the principal state agencies with the responsibility for controlling water quality in California.

*State Water Resources Control Board/Regional Water Quality Control Boards*

The SWRCB has the ultimate authority over State water rights and water quality policy. Nine RWQCBs are also established to oversee water quality on a day-to-day basis at the local and regional level. The SWRCB and RWQCBs are responsible for ensuring implementation and compliance with the provisions of the CWA and Porter-Cologne Act.

The PVL corridor is located within Region 8, the Santa Ana RWQCB (Santa Ana Regional Water Quality Control Board [SARWQCB], 2009). The Santa Ana Region includes the upper and lower Santa Ana River watersheds, the San Jacinto River watershed, and several other small drainage areas. The Santa Ana Region covers parts of southwestern San Bernardino County, western Riverside County, and northwestern Orange County.

*Water Quality Objectives*

RWQCB are required to develop and periodically update a Water Quality Control Plan, also known as a Basin Plan (SWRCB, 2009). The Basin Plan establishes water quality objectives for the ground and surface waters of the region and includes an implementation plan describing the actions by the Regional Board and others that are necessary to achieve and maintain these water quality objectives.

As defined in the Porter-Cologne Act, water quality objectives are the set limits or levels of chemical constituents allowable in water (SWRCB, 2009). The designation of water quality objectives must satisfy all of the applicable requirements of the Porter-Cologne Act and the CWA.

Through water quality objectives, the RWQCB provides for the reasonable protection of beneficial uses, taking into account existing water quality, environmental and economic considerations.

*Beneficial Uses*

Beneficial uses are defined within the Basin Plan as the uses of water necessary for the survival or well being of man, plants, and wildlife (SARWQCB, 2008). These uses of water serve to promote the tangible and intangible economic, social, and environmental goals of man.

The following beneficial uses, as defined statewide, are designated within the Santa Ana Region and are shown in Table 4.8-1 and Table 4.8-2:

- Municipal and Domestic Supply (MUN) – Includes uses of water for community, military, or individual water supply systems including, but not limited to drinking water supply.
- Agricultural Supply (AGR) – Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
- Industrial Process Supply (PROC) – Includes uses of water for industrial activities that depend primarily on water supply.
- Industrial Service Supply (IND) – Includes beneficial uses of water for industrial activities that do not depend primarily on water quality, including by not limited to mining, cooling water supply, hydraulic conveyance, gravel mining, fire protection, or oil well re-pressurization.
- Groundwater Recharge (GWR) – Includes uses of water for natural and artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of salt water intrusion into freshwater aquifers.
- Water Contact Recreation (REC-1) – Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses may include, but not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, whitewater activities, fishing and use of natural hot springs.
- Non-contact Recreation (REC-2) – Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing and aesthetic enjoyment in conjunction with the above activities.

- Warm Freshwater Habitat (WARM) – Includes the uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife including invertebrates.

- Wildlife Habitat (WILD) – Includes the uses of water that supports wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

- Spawning, Reproduction, and/or Early Development (SPWN) – Includes uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish (e.g., those fish that transition between saltwater and freshwater conditions).

**Table 4.8-1**
**Surface Water Beneficial Uses within the Project Area**

| Basin | Hydrologic Unit | Beneficial Use | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MUN | AGR | GWR | REC-1 | REC-2 | WARM | WILD | SPWN |
| **Upper Santa River Basin** | | | | | | | | | |
| **Santa Ana River** | | | | | | | | | |
| Reach 4 - Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino | 801.27 | * | | | X | X | X | X | X |
| **San Jacinto River Basin** | | | | | | | | | |
| **San Jacinto River** | | | | | | | | | |
| Reach 3 - Canyon Lake to Nuevo Road | 802.11 | * | I | I | I | I | I | I | |
| Notes:<br>I Intermittent Beneficial Use<br>* Excepted from MUN | | | | | | | | | |
| Source: SARWQCB, 2008 | | | | | | | | | |

**Table 4.8-2**
**Groundwater Beneficial Uses within the Project Area**

| Basin | Hydrologic Unit | Beneficial Use | | | |
|---|---|---|---|---|---|
| | | MUN | AGR | IND | PROC |
| **Middle Santa River Basin** | | | | | |
| Riverside - E | 801.27 | X | X | X | X |
| Riverside - F | 801.27 | X | X | X | X |
| **San Jacinto River Basin** | | | | | |
| Perris North | 802.11 | X | X | X | X |
| Perris South | 802.11 | X | X | X | X |
| Source: SARWQCB, 2008 | | | | | |

*Anti-degradation Policy*

SARWQCB water quality objectives conform to USEPA regulations covering anti-degradation (40 CFR 131.12) and State Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California.

The main objective of the anti-degradation policy is "Wherever the existing water quality of water is better than the quality of water established herein as objectives, such existing quality shall be maintained unless otherwise provided by the provisions of the SWRCB Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", including any revisions thereto, or the Federal Anti-degradation Policy, (40 CFR 131.12). Applications for the anti-degradation provisions to the standard process requires supporting documentation and appropriate findings whenever a standard (water quality objective) is made less restrictive to accommodate the discharge of pollutants or other activities of man.

Resolution No. 68-16 establishes a general principle of non-degradation, with flexibility to allow some changes in water quality which is in the best interests of the State. Changes in water quality are allowed only where it is in the public interest and beneficial uses are not unreasonably affected. The terms and conditions of Resolution No. 68-16 serve as the general narrative water quality objective in all state water quality control plans.

*Stormwater Pollution Prevention Plan*

Projects that anticipate disturbing one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (CGP) (SWRCB, 2009). Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

This CGP requires the development and implementation of a site specific SWPPP. The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project.

The SWPPP must list BMPs that the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMP; and a sediment monitoring plan if the site discharges directly to a water body.

It should also be noted that the State is in the process of revising the CGP. It's likely that the new permit will be in place prior to project construction commencing; therefore the project will need to comply with the most current permit requirements.

<u>Local Policies and Regulations</u>

*Riverside County Flood Control and Water Conservation District*

The Riverside County Flood Control and Water Conservation District (RCFCWCD) was created in 1945 to protect people, property, and watersheds from damage or destruction from flood and stormwaters (RCFCWCD, 2009). The RCFCWCD has also been designated by FEMA to administer the NFIP program and issue the No-Rise Certification in the western parts of the County where the PVL project is located. The administrator coordinates, implements, and enforces the local floodplain ordinance by granting or denying development permits in accord with its provisions. Any development or encroachments made to the SFHA must be reviewed by the administrator to determine whether proposed building sites would be reasonably safe from flooding, and to ensure that BFEs are not raised, which could create flooding in other areas. This may include the submittal of studies, calculations, plans and other information required to meet FEMA requirements.

In 2000, the RCFCWCD agreed to the role of "Principal Permittee" for NPDES permits (SARWQCB, 2002). The current NPDES permit applies to the entirety of Riverside County and requires controls to reduce the discharge of pollutants into the water. The ultimate goal of the NPDES permit is to protect water quality by ensuring that the flows in Municipal Separate Storm Sewer System (MS4s) do not contain an exceedance of pollutants (SARWQCB, 2002).

In order to effectively implement this permit, Drainage Area Management Plans (DAMP) were created. Each DAMP outlines the major programs and policies for controlling pollutants and are anticipated to be dynamic documents. Within these documents are identified the BMPs for existing facilities and new development. Examples of some of the BMPs identified include; straw wattles/fiber rolls, silt fence, and street cleaning. Currently, there are five DAMP that cover the project area.

*Riverside County General Plan*

Riverside County General Plan addresses flooding concerns in the County, especially around the Santa Ana River, San Jacinto River, and Whitewater River, and provides regulations and requirements for new development (Riverside County, 2008).

Specifically, policies S.4.1 – S.4.12 provide requirements for new development in high risk flood areas within the County. Included in these policies are that, for construction in 100-year floodplains, projects must mitigate the hazard to the satisfaction of Riverside County responsible agencies. Additionally, construction is prohibited in high risk areas unless the development will not result in any increase in flood levels during the occurrence of a 100-year flood.

*Riverside County Resolution No. 2005-220*

Riverside County approved Resolution No. 2005-220 (RCFCWCD, 2005), setting forth policies and procedures to control developments within the San Jacinto River floodway and requiring permits or applicable approvals from the RCFCWCD, USACE, USFWS, CDFG, and the SARWQCB.

*City of Perris General Plan*

The City of Perris General Plan established policies to reduce losses that result from flooding (2005). This plan enables development of flood control facilities that significantly reduce the amount of property at risk for flooding, and attempts to restrict future development in areas of high flood hazard until the risk is or can be mitigated (City of Perris, 2005).

Policy No. I.B.4 requires new development to incorporate facilities for on-site control of stormwater runoff.

Policy No. I.B.5 requires flood mitigation plans for all new development located in 100-year flood zones.

### *4.8.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Hydrology/Water Quality is defined by:

1. *Would the project violate any water quality standards or waste discharge requirements*
2. *Would the project 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)*
3. *Would the project 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 that would result in substantial erosion or siltation on or off-site*
4. *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*
5. *Would the project 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*
6. *Would the project 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*
7. *Would the project otherwise substantially degrade water quality*
8. *Would the project 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 hazard delineation map*
9. *Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows*
10. *Would the project 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*
11. *Would the project increase the likelihood of inundation of seiche, tsunami, or mudflow*

### *4.8.4 Project Impacts*

***Would the project violate any water quality standards or waste discharge requirements***

Citrus Connection

Construction within the Citrus Connection would include ground preparation, placement of ballast, and laying of concrete ties on the ballast, with welded rail welded rail for approximately 2,000 feet of new track. During installation of this portion of track, gasoline, diesel, brake fluids, paints, and other pollutants would be used by construction personnel in small quantities.

Since the Citrus Connection is a curved section of track, wheel lubricators on the trains would be utilized during operation. Wheel lubricators reduce wheel wear and wheel squeal going around the curve. The wheel lubricators use very small quantities of product to reduce squeal. Because they are used in small quantities, in a small area, the lubrication is not anticipated to be a component of local runoff.

Overall, the operations and maintenance of the Citrus Connection would be the same as for the existing SJBL alignment. Therefore, this portion of the PVL project would not violate water quality standards or waste discharge requirements.

SJBL Alignment

Since the construction, operation, and maintenance of the SJBL alignment would primarily upgrade the existing tracks and culverts. Proposed development for this portion of the PVL project is not expected to change appreciably from existing conditions and therefore not violate water quality standards or waste discharge requirements.

A bypass track would be constructed along certain segments of the SJBL alignment, as shown on Figure 2.4-3. Construction activities would include ground preparation, and placing ballast and concrete ties with welded rail.

The operation and maintenance of this additional bypass would be the same as for the existing SJBL alignment. Therefore, the main alignment of the PVL project would not contribute to a violation of water quality standards or waste discharge requirements.

Stations

Construction at the stations would involve ground preparation and laying a crushed aggregate base that would be capped by pavement. Other activities would include the transport and placement of fill, and construction of structural features (i.e. platforms, canopies, etc.).

The relative small size of the station platforms would not create a surface large enough to create a significant amount of polluted runoff that would affect water quality. Operation and maintenance of the station parking lots could potentially create polluted runoff. Oil and fluid leaks from parked cars would potentially be transported by runoff water as it flows towards the local MS4s. RCTC will install structural BMPs to properly contain any expected pollutants. BMPs could include catch basin inserts and oil/water separators that would stop debris, oil, and other pollutants from entering the MS4s.

With the planned BMPs in place, the construction, operation, and maintenance of the stations would not violate water quality standards or waste discharge requirements.

Layover Facility

Construction at this site would include ground preparation, transporting and laying fill or crushed aggregate, and building structural features. The proposed Layover Facility would include storage buildings, parking areas, tracks for parked trains, equipment, and landscaped vegetation. It is expected that up to four trains would be stored at this facility overnight.

Drips pans would be installed where engines are parked in order to catch any fuel, lubrication, or hydraulic fluid drips from engines stored in the yard. There would be a train inspection pit located under one of the tracks. The pit allows train mechanics to inspect the undercarriage of the train as necessary. The drainage from the drip pans and the inspection pit is directly connected to an oil/water separator for treatment prior to discharge into the local MS4. The oil/water separator would be periodically serviced to remove any accumulated oil and waste.

The proposed parking lot at the Layover Facility would have a similar effect on water quality as the proposed station parking lots.

With the planned BMPs in place, the construction, operation, and maintenance of the Layover Facility would not contribute to a violation of water quality standards or waste discharge requirements. No impacts are anticipated for this issue area.

Bridges

Two bridges will be replaced in-kind as part of the PVL project: the San Jacinto River Bridge (MP 20.70) and the San Jacinto Overflow Channel Bridge (MP 20.80). Replacement of these bridges would include removal of the existing structures and the addition of steel piles and concrete collars at the base, precast concrete caps overlain by precast prestressed concrete slabs, and ballast and tracks on top.

Construction would be conducted from within and adjacent to the channels, and would occur during the summer (dry season) months when the San Jacinto River and San Jacinto River Overflow Channel are dry. Equipment storage, fueling, and construction staging areas would be located to minimize risks of waste discharge and water contamination, and the project specific SWPPP would identify proper BMPs to control anticipated pollutants.

Therefore, the bridge replacement would not violate water quality standards or waste discharge requirements and no impacts are anticipated.

***Would the project 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)***

The proposed PVL project involves upgrading the existing rail corridor, and adding four stations and a Layover Facility. The approximate maximum depth of excavation at the proposed stations and Layover Facility is 14 feet below existing grade. Dewatering is not anticipated because groundwater is greater than 50 feet in project area. No ground water resources would be needed for the construction, maintenance, and operation of the PVL project. Additionally, it should be noted that the paved areas at the stations and Layover Facility would not interfere with groundwater recharge because of the very small size compared to the overall watershed area. Therefore, the PVL project would not substantially deplete groundwater supplies or interfere with existing groundwater resources. No impacts are anticipated for this issue area.

***Would the project 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 that would result in substantial erosion or siltation on or off-site***

Citrus Connection

The current BNSF and SJBL alignments traverse the Springbrook Wash. The proposed Citrus Connection track would be located north of the Wash, on disturbed vacant land.

The approximately 2,000 feet of new track proposed for the Citrus Connection would connect the two existing alignments, the BNSF and SJBL, south of where they currently connect. Although the track will be new in this area, the drainage patterns are not anticipated to substantially change. Current drainage is via sheet flow off the vacant land and into Springbrook Wash. With the installation of the new track, the sheet flow will be slowed by the track but water will be allowed to percolate through the ballast rock prior to reaching Springbrook Wash. Because the new construction is not altering existing drainage patterns, no impacts are anticipated for this issue area.

SJBL Alignment

The existing drainage pattern of the project area currently includes the SJBL alignment. Since the construction, operation, and maintenance of this alignment would primarily upgrade the existing tracks, selected culverts, and bridges, proposed development within this segment of the PVL corridor would not substantially alter the existing drainage pattern of the area. The bypass track would be built adjacent to the existing SJBL tracks with an extension of the existing culverts. This bypass track would not alter the existing drainage pattern of the site. There are no impacts anticipated for this issue area.

Stations

The station locations are all proposed to be constructed on previously disturbed land that does not contain defined drainage patterns. The stations, including the associated parking structures, are designed to direct local drainage into catch basins that connect into the local MS4. Therefore, the stations are not expected to impact this issue area.

Layover Facility

The proposed Layover Facility would be constructed on previously disturbed land that does not contain defined drainage patterns. The Layover Facility is designed to direct local drainage into local catch basins that connect into the MS4. Therefore, this facility is not expected to impact this issue area.

***Would the project 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***

Citrus Connection

The current BNSF and SJBL alignments traverse the Springbrook Wash. However, the proposed Citrus Connection track will not affect the existing drainage pattern.

The approximately 2,000 feet of new track proposed for the Citrus Connection would serve to connect two existing alignments, the BNSF and SJBL south of where they currently connect. Overall, the operations and maintenance of the Citrus Connection would be the same as for the SJBL alignment. Since the proposed Citrus Connection would not be located in an area with a defined drainage pattern, the Citrus Connection would not substantially alter an existing drainage pattern or substantially increase the surface runoff in the site. Because the new construction is not altering existing drainage patterns, no impacts are anticipated for this issue area.

SJBL Alignment

The existing drainage pattern of the project area currently includes the SJBL alignment. Since the construction, operation, and maintenance of this alignment would primarily upgrade the existing tracks and selected culverts, proposed development within this segment of the PVL corridor would not substantially alter the existing drainage pattern of the area or substantially increase the surface runoff in the site.

The bypass track would be built adjacent to the existing SJBL tracks and would be similar to the existing tracks. The selected culvert improvements include extending the existing culverts under the bypass track. This is not expected to change the existing drainage patterns. Therefore, no impacts are anticipated for this issue area.

Stations

The relative small size of the station platforms would not create an impermeable surface large enough to significantly contribute to runoff water in the surrounding area. The station parking lots would increase the amount of impermeable paved surfaces in the area, which would create additional runoff because the paved area does not allow for water infiltration. However, the stations are designed to direct local drainage into catch basins that connect into the local MS4, which would control the surface runoff and avoid flooding on or off-site.

Therefore, no impacts are anticipated for this issue area.

Layover Facility

The proposed Layover Facility would be constructed on previously disturbed land that does not contain defined drainage patterns such as streams or rivers.

The buildings planned for the Layover Facility are anticipated to be raised off the ground approximately six feet. It is not expected that these raised structures would create an impermeable surface large enough to significantly contribute to runoff water in the surrounding area. Parking lots for the Layover Facility would increase the amount of impermeable surfaces in the area because the paved lots do not allow for water infiltration. However, the Layover Facility is designed to direct local drainage into the MS4, which would control the surface runoff and avoid flooding on or off-site.

Therefore, no impacts are anticipated for this issue area.

***Would the project 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***

<u>SJBL Alignment</u>

Along the SJBL alignment are existing drainage structures (culverts) that allow stormwater flow to pass beneath the railroad tracks. As part of the PVL project, the culverts that would be replaced or extended will continue to convey the local stormwater flow beneath the tracks. These rehabilitated culverts will allow the same amount of water to pass through the alignment as the old ones.

Since the construction, operation, and maintenance of the SJBL alignment would upgrade the existing tracks and selected culverts, the increase in impervious area is limited. Therefore, the proposed development within this segment of the PVL corridor would not create additional runoff that would exceed the capacity of existing or planned stormwater drainage systems.

Additionally, the increase of twelve trains per day would cause minor quantities of oil and lubricants to weep onto the track. It is not anticipated that these quantities are great enough to cause an increase in polluted runoff. Therefore, there are no impacts for this issue area.

<u>Stations</u>

The relative small size of the station platforms will not create an impermeable surface large enough to significantly contribute to runoff water in the surrounding area. Operation and maintenance of the station parking lots would increase the amount of impermeable paved surfaces in the area. These surfaces would create additional runoff because the paved area does not allow for water infiltration. However, engineering designs for each station include providing stormwater detention when required. With these design elements in place, it is anticipated that there will be sufficient capacity within the MS4s to support the proposed PVL project.

Oil and fluid leaks from parked cars would potentially be added to runoff water as it flows towards the local MS4s. RCTC will install structural BMPs including catch basin inserts and oil/water separators that would stop debris, oil, and other pollutants from entering the MS4s. With the planned BMPs in place, the construction, operation, and maintenance of the stations would not provide substantial additional sources of polluted runoff to the MS4.

Therefore, no impacts are anticipated for this issue area.

Layover Facility

The buildings planned for the Layover Facility are anticipated to be raised off the ground approximately six feet. It is not expected that these raised structures would create an impermeable surface large enough to significantly contribute to runoff water in the surrounding area. The Layover Facility parking lots would increase the amount of impermeable paved surfaces in the area. This surface would create additional runoff because the paved area does not allow for water infiltration. However, engineering designs for the Layover Facility include sizing the catch basins and local drainage structures to be of sufficient capacity to accept the additional runoff. With these design elements in place, it is anticipated that there will be sufficient capacity within the MS4s to support the Layover Facility.

Oil and fluid leaks from parked cars would potentially be added to runoff water as it flows towards the local MS4s. RCTC would install structural BMPs including catch basin inserts that would stop debris, oil, and other pollutants from entering the MS4s. With the planned BMPs in place, the construction, operation, and maintenance of the Layover Facility would not provide substantial additional sources of polluted runoff to the MS4.

Therefore, no impacts are anticipated for this issue area.

***Would the project otherwise substantially degrade water quality***

Most of the PVL project consists of an existing rail corridor. It is not anticipated that new sources of pollutants would occur as a result of the proposed upgrades.

Proposed new structures for the PVL project are minimal, and drainage and pollutants would be managed with appropriate measures that comply with federal, state, and local regulations. Therefore, the PVL project would not otherwise substantially degrade water quality. No impacts are anticipated for this issue area.

***Would the project 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 hazard delineation map***

The proposed PVL project would enhance transportation infrastructure by extending commuter rail service to additional portions of Riverside County. It does not include the construction of housing. Therefore, no impacts are anticipated for this issue area.

***Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows***

Ten FIRM panels were evaluated to identify flood designations and floodways including and proximate to the PVL corridor. Four of these FIRM panels were located in a 100-year flood hazard area (FEMA, 2008). (Figures 4.8-1 and 4.8-2)

- FIRM Panel 06065C0065G: The area of Springbrook Wash has a 100-year flood Zone A designation. A small portion of the alignment, where the alignment passes over the Wash, between Spring Street and Citrus Street is within this high flood risk area.

- FIRM Panel 06065C0727G: A portion of the SJBL alignment at Blaine Street, within the UCR area, has a 100-year flood Zone A designation. The floodplain boundary ends at the alignment and is identified east along Blaine Street and curves north at Valencia Hill Drive. Zone A has a high potential for flood risk.

- FIRM Panel 06065C0731G: The University Wash located in Islander Park of the UCR area has a 100-year flood Zone AE designation. The floodplain boundary starts near Linden Street and is identified south to Big Springs Road, and is bounded by the alignment along the eastern boundary. Zone AE is a high risk area.

- FIRM Panel 06065C1440G: The area adjacent to the west side of the alignment at Metz Road has a 100-year flood Zone A designation. This flood area is located in Metz Park within the City of Perris. Additionally, this panel includes the San Jacinto River and associated floodway. The floodplain boundary for the San Jacinto River is partially within a 100-year flood area, which includes the railroad bridges (MP 20.70 and 20.80). Both bridges (MP 20.70 and 20.80) are mapped within the 6,600-foot wide floodway. Extending from the floodway is a 12,000-foot-wide floodplain boundary for the 100-year event in Zone AE.

The SJBL alignment, two bridges, the South Perris Station option, and the Layover Facility are portions of the PVL project that are located within a 100-year flood hazard area. Based on the hydraulic analysis presented in the Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis report, it is expected that the bridges, rail alignment, station platform, station parking lot, and Layover Facility could be submerged as much as five feet during the 100-year flood (AECOM, 2009).

<u>SJBL Alignment</u>

Tracks and culverts along the SJBL alignment are already in existence, and the proposed upgrades would not substantially change the existing configuration. Therefore, development of the SJBL alignment within the PVL corridor would not add new structures within a 100-year flood hazard area that would impede or redirect flood flows.

<u>Bridges</u>

The San Jacinto River Bridge (MP 20.70) and the San Jacinto Overflow Channel Bridge MP (20.80) are in the southernmost 100-year flood hazard area within the PVL corridor. These bridges would be replaced as part of the project.

The proposed bridges would have a greater length and thickness (or profile view) than the existing bridges. The San Jacinto River Bridge is currently 140-feet long, and the replacement would be 156 feet in length. The thickness (or profile view) of the proposed bridge would increase from the current 2.67 feet to 4.75 feet, which would reduce the distance between the lowest part of the bridge and the river because of the increase in span.

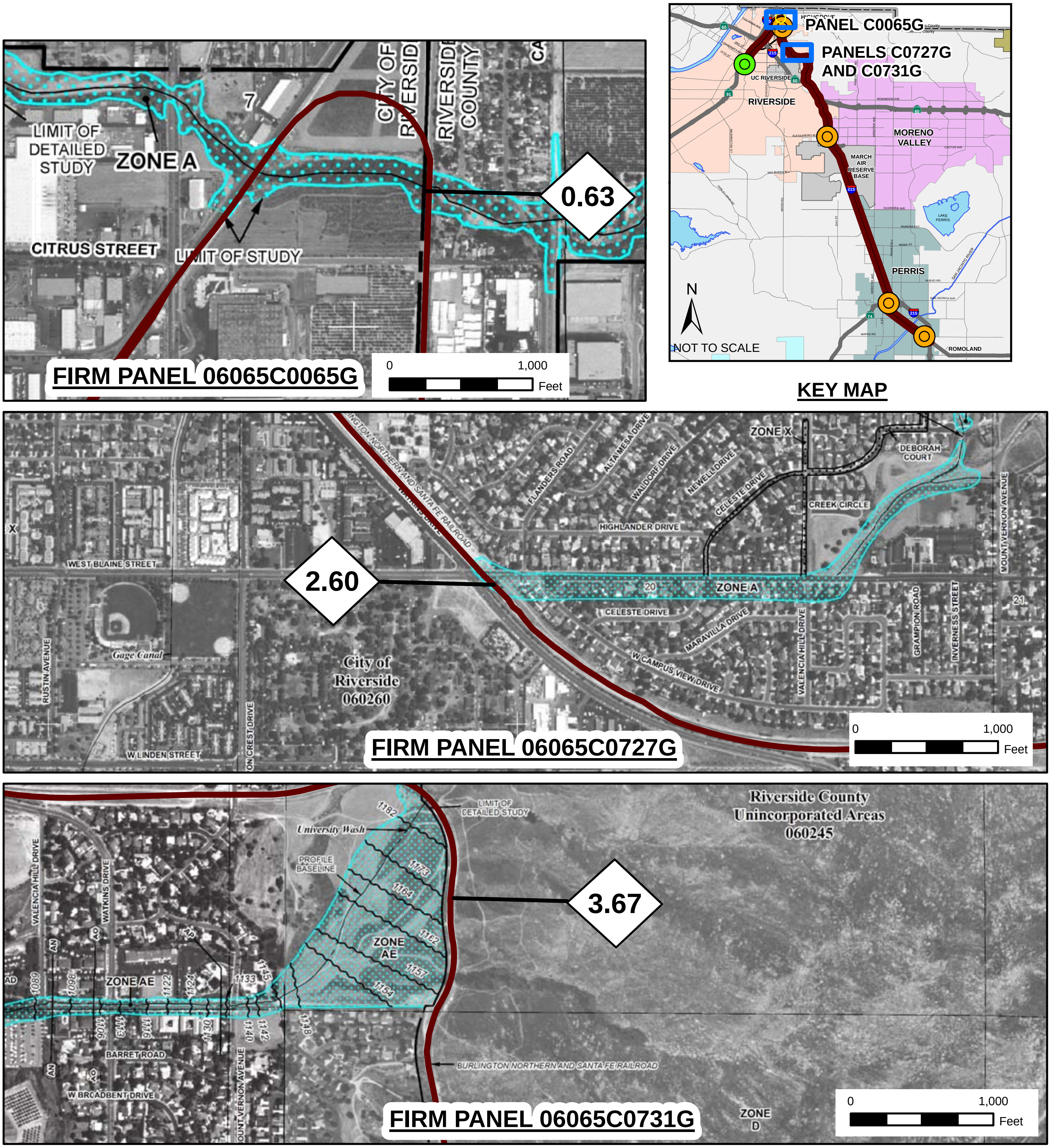
The San Jacinto Overflow Channel Bridge is currently 54 feet long, and the replacement bridge would be 70 feet long. The thickness (or profile view) of the bridge would increase to 3.16 feet which would also reduce the distance between the lowest part of the bridge and the river because of the increase in span.

The San Jacinto River channel would be widened to offset the increased bridge width, which would allow the same amount of water to continue passing under the replacement bridges, and the bridge replacements were designed to ensure that there is no increase in water surface elevation upstream. Additionally, according to the *Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis* (AECOM, 2009), the San Jacinto River Bridge and the San Jacinto Overflow Channel Bridge would not result in an impact related to base flood elevations, regulatory floodway elevations, or floodway widths. Since project design plans for the bridges would be in compliance with the NFIP's No-Rise requirements, it is anticipated that a No-Rise Certification would be obtained for the project through the RCFCWCD. Therefore, the proposed bridges would not impede or redirect flood flows and no impacts are anticipated for this issue area.

South Perris Station and Layover Facility

The South Perris Station option and Layover Facility would be located in the southernmost 100-year flood hazard area within the PVL corridor. The relative small size of the station platform would not create a surface that would significantly impede or redirect flows in a 100-year flood.

The proposed parking lot at the South Perris Station option and the proposed Layover Facility would place structures within a 100-year flood hazard area. However, according to the *Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis* (AECOM, 2009) South Perris Station option and Layover Facility structures would not result in an impact related to base flood elevations, regulatory floodway elevations, and floodway widths. Since project design plans for the South Perris Station option and Layover Facility would be in compliance with the NFIP's No-Rise requirements, it is anticipated that a No-Rise Certification would be obtained for the project through the RCFCWCD. Therefore, proposed structures at the South Perris Station option and Layover Facility would not impede or redirect flood flows within a 100-year flood hazard area, and no impacts are anticipated for this issue area.




## LEGEND

- FLOOD ZONE
- PVL ALIGNMENT
- MILE POST

SOURCE: FEMA FLOOD INSURANCE RATE MAPS
EFFECTIVE DATE: AUGUST 8, 2008

N

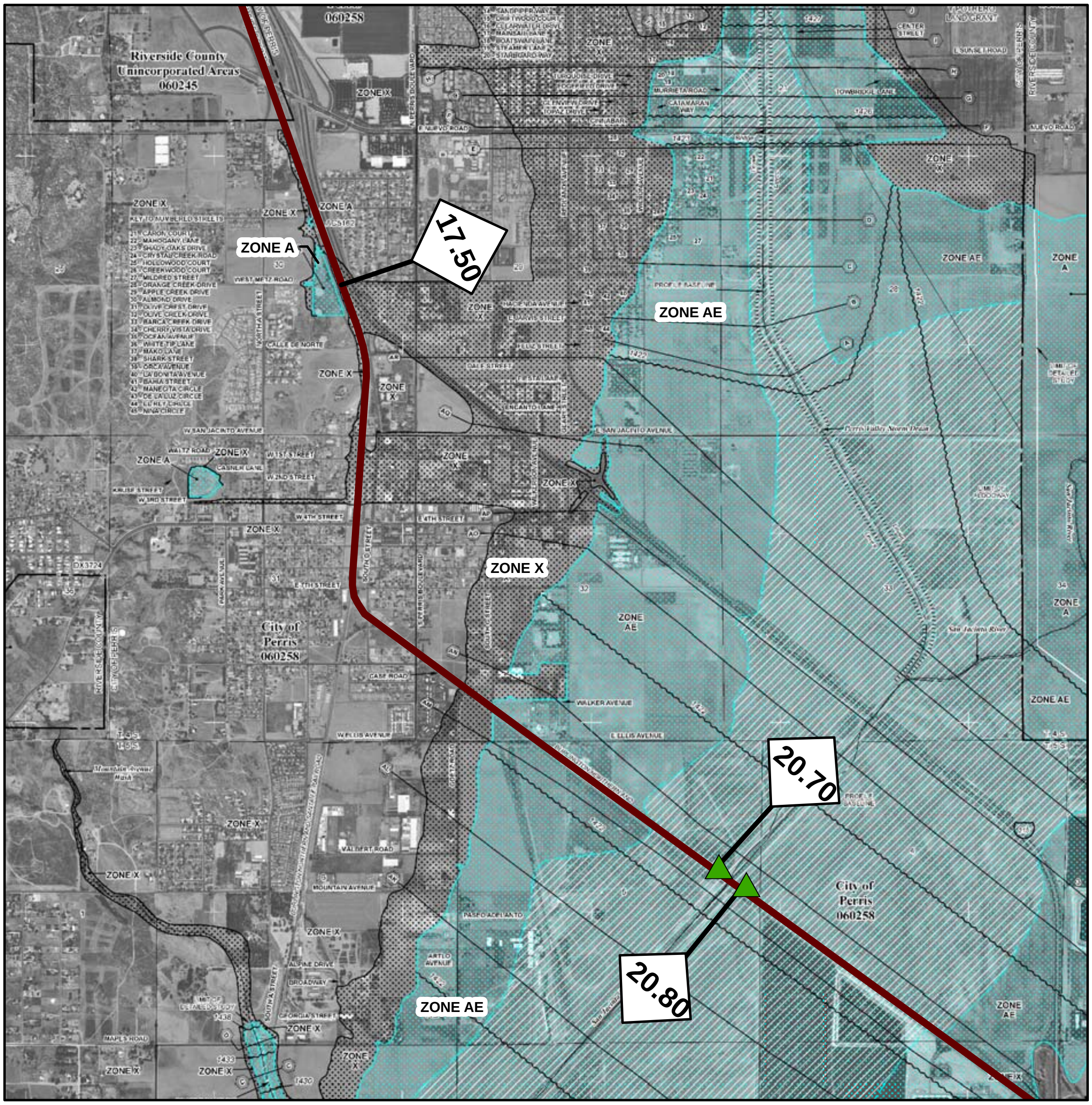
| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/11/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666firmEIR.MXD |

FEMA ZONES FOR FIRM PANELS
C0065G, C0727G, AND C0731G

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.8-1




## LEGEND

FLOOD ZONE

FLOODWAY

PVL ALIGNMENT

MILE POST

BRIDGE

SOURCE: FEMA FLOOD INSURANCE RATE MAPS
EFFECTIVE DATE: AUGUST 8, 2008

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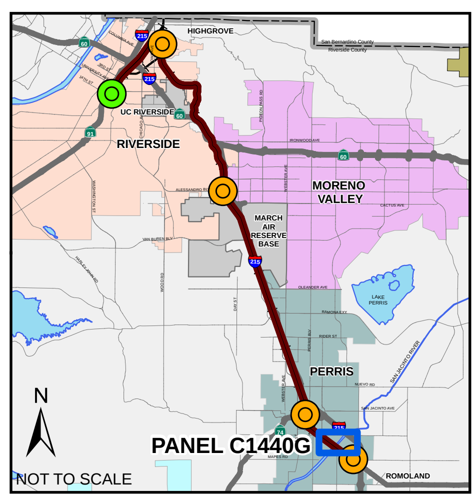
**KEY MAP**




| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | FEMA ZONES FOR FIRM PANEL C1440G | FIGURE |
| DRAWN: | 12/11/09 | | 4.8-2 |
| DRAWN BY: | JP | | |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666firm1EIR.MXD | | | |

KLEINFELDER

***Would the project 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***

During torrential rainfall events or periods of extended rain, the storage capacity of Mystic Lake would be exceeded and overflow into the San Jacinto River. If this occurs, the river could swell and potentially flood the previously designated surrounding areas.

<u>SJBL Alignment</u>

Trains would not run if flooding occurs within the PVL corridor (GCOR, 2005). Therefore, PVL riders would not be exposed to flooding along the SJBL alignment.

Development along the SJBL alignment would involve upgrading existing tracks; no additional structures would be added along the alignment. Therefore, this development would not expose new structures to a significant risk of loss, injury or death involving flooding.

<u>South Perris Station and Layover Facility</u>

The South Perris Station option and Layover Facility would be located in the southernmost flood hazard area within the PVL corridor. Trains would not run if flooding occurs within the PVL corridor (GCOR, 2006) and the employee support building within the Layover Facility would be raised by six feet to remain out of the 100-year floodplain. Therefore, people would not be exposed to flooding at the Layover Facility or proposed South Perris Station.

The raised structures at the Layover Facility could be exposed to significant risk of loss involving flooding. However, according to the *Perris Valley Line Draft Hydrology Report Volume II San Jacinto River Analysis*, Layover Facility structures would not result in an impact related to base flood elevations, regulatory floodway elevations, and floodway widths. Since project design plans for the Layover Facility would be compliance with the NFIP's No-Rise requirements, it is anticipated that a No-Rise Certification would be obtained for the project through the RCFCWCD. Therefore, the proposed Layover Facility would not expose structures to a significant risk of loss, injury or death involving flooding, and no impacts are anticipated for this issue area.

***Would the project increase the likelihood of inundation of seiche, tsunami, or mudflow***

Because the PVL corridor is not located in close proximity to a coast or ocean, implementation of the proposed project would not create or be subject to inundation by seiche, or tsunami. Additionally, the project is on a rail corridor originally developed over 100 years ago. Since current rail operations will continue, and the commuter trains will not increase the current risk, it is not anticipated that the implementation of the PVL project will increase the likelihood of a mudflow. Therefore, no impacts are anticipated for this issue area.

### *4.8.5 Mitigation Measures*

The proposed PVL project will not have a significant impact on hydrology and water quality. No mitigation measures are required.

## 4.9 LAND USE AND PLANNING

This section of the EIR discusses the potential environmental impacts of the project associated with land use and planning. Existing land uses within the proposed PVL project area (including properties to be acquired), as well as the areas adjacent to the project area, are characterized in the context of the County of Riverside General Plan, City of Riverside General Plan, March JPA General Plan, City of Perris General Plan, and the associated City and County Zoning Ordinances, as well as other adopted plans and policies. It should be noted here that the existing rail corridor, as with all rail corridors, is exempt from local land use regulations. However, the station sites and Layover Facility are subject to local use regulations, which require coordination with the local agencies.

FEMA's NFIP was analyzed because of flood zones located within a portion of the PVL near the San Jacinto River. The Habitat Multiple Species Conservation Plan was also reviewed for consistency. However, the majority of analysis focuses on land use compatibility, General Plan consistency, and the implications of the project on existing and surrounding land uses. Information for this section was obtained primarily from public documents, public and agency contacts.

### *4.9.1 Environmental Setting*

Existing conditions within the project corridor include established rail lines that were constructed in the 19th century. RCTC acquired the SJBL in 1993, and has an agreement with the BNSF to continue freight service along the SJBL corridor. The SJBL alignment corridor extends from the city of Riverside/Highgrove Area where it currently connects to the BNSF main line, and continues west of and adjacent to Moreno Valley and MARB, through the Mead Valley area, and culminates in the city of Perris. PVL project components are surrounded by a range of land uses including transportation, industrial, residential, commercial, educational, and open space. Table 4.9-1 presents the current land uses adjacent to the PVL corridor.

*Citrus Connection*

The proposed Citrus Connection, a new segment of rail that would connect the BNSF to the SJBL south of where they currently connect, and lies within the Riverside city limits southwest of the unincorporated Highgrove area. As such, the Citrus Connection comprises the northernmost element of the PVL. Its boundaries include Villa Street to the north, the SJBL to the east, and the BNSF to the west; its southern boundary lies approximately 1,000 feet south of Villa Street.

The site is comprised entirely of vacant land, and is designated and zoned for Business/Office Park in the City of Riverside 2025 General Plan. The Business/Office Park land use designation is primarily intended for light industrial uses, consistent with the General Plan's goals to create an economic/job center. The site is planned for development as a warehouse/distribution center in the absence of the PVL project.

A metal recycling facility operates directly north of the site. A residential neighborhood lining Transit Avenue lies east of the site beyond the segment of the SJBL, while light industry comprises the blocks west of the site beyond the BNSF. Directly south of the site runs the Springbrook Wash, which is designated as City of Riverside Open Space.

**Table 4.9-1**
**Land Uses Adjacent to the PVL**

| General Location | Use | Relevant Planning Document(s) |
|---|---|---|
| Proposed Citrus Connection | Business Park, Open Space, Open Space Connection (Springbrook Wash), Light Industrial, and Medium and High-Density Residential | City of Riverside General Plan (2007), Riverside County General Plan - Highgrove Area Plan (2003) |
| Proposed Palmyrita Station | Business Park | City of Riverside General Plan (2007) |
| Gage Canal/Spruce Street | Business Park, Open Connection, Major Open Space and Parks | City of Riverside General Plan (2007) |
| Box Springs Mountain Reserve | Major Open Space and Parks, Open Space Connections, Rural Mountainous | City of Riverside General Plan (2007), Riverside County Highgrove Area Plan (2003) |
| I-215/SR-60 Interchange | Medium to Very High-Density Residential, Commercial Retail, Conservation | Riverside County Highgrove Area Plan (2003) |
| I-215 between SR-60 and Alessandro Blvd. | Business Park | City of Riverside General Plan (2007) |
| Proposed Moreno Valley/March Field Station | Light Industrial | Reche Canyon/Badlands Area Plan (2003), Meridian Specific Plan (2003) |
| Cactus Avenue to Van Buren Blvd. | Public Facilities, Community Center, Commercial Retail, Commercial Tourist | Reche Canyon/Badlands Area Plan (2003) |
| East of I-215 | MARB Military Operations and Aviation, Public Facilities | March JPA General Plan (2004) |
| Van Buren Blvd. to Nandina Avenue | Public Facilities | Reche Canyon/Badlands Area Plan (2003) |
| Nandina Avenue to Ramona Expressway | Light Industrial | Reche Canyon/Badlands Area Plan (2003), Mead Valley Area Plan (2003) |
| Rider Street to Citrus Avenue | Light Industrial | Reche Canyon/Badlands Area Plan (2003), Mead Valley Area Plan (2003) |
| Harvill Avenue/North A Loop | Commercial Retail, Business Park | Reche Canyon/Badlands Area Plan (2003), Mead Valley Area Plan (2003) |
| Nuevo Road to Downtown Perris | Public Facilities, Residential, Open Space | City of Perris General Plan (2005) |
| Proposed Downtown Perris Station | Public Facilities, Commercial Neighborhood | City of Perris Downtown Specific Plan (1993) |
| 7th Street to the San Jacinto River | Residential, Community Commercial, Light Industrial | City of Perris General Plan (2005), City of Perris Downtown Specific Plan (1993), City of Perris Downtown Draft Specific Plan Amendment (2007) |
| San Jacinto River to Mapes Road | Residential, Open Space, Commercial, Business, Industrial, Schools, Recreation | Green Valley Specific Plan (1990), Riverglen Specific Plan (1992) |
| Proposed South Perris Station and Layover Facility | Light Industrial, Neighborhood Commercial | City of Perris General Plan (2005) |

At this location, the City of Riverside General Plan includes a public recreational trail. A recently constructed driveway with a culvert, crossing Springbrook Wash connects the site to existing warehouses further south.

The unincorporated Highgrove area, which is located just east of Riverside City limits and northeast of the Citrus Connection, encompasses the single-family residential housing of the Highgrove community and the westernmost portion of Box Springs Mountain Reserve. In the existing condition the Highgrove area is partly developed in conformity with the area plan.

*Hunter Park Station options*

From the Citrus Connection site, the SJBL runs through existing industrial development and scattered agricultural residential uses south to the location of the proposed Hunter Park Station. The Hunter Park Station is the only new station to be constructed in the City of Riverside, and it is anticipated to serve primarily the city of Riverside and Highgrove area.

Three options are under consideration for the new Hunter Park Station. The Palmyrita option, north of Columbia Avenue is currently being developed for light industrial use, while the Columbia option, adjacent to and west of the proposed Palmyrita option, currently hosts citrus orchard. The Marlborough option, just north of and adjacent to Marlborough Avenue, is located on cleared, disturbed land about 1,000 feet south of the Columbia and Palmyrita options.

South of Hunter Park Station, the SJBL alignment extends through urbanized areas and open space. Further south, the SJBL runs adjacent to residential neighborhoods, a church, scattered commercial, Highland Park and Highland School, and the 20-acre Islander Park. To the west of the SJBL is UCR, and to the east lies Box Springs Mountain Reserve, and Islander Park.

South of Islander Park, the SJBL runs along the eastern boundary of the city of Riverside. Single-family residential development lies to the west of the SJBL and also to the east, where homes are constructed on the hillsides between the SJBL and Box Springs Mountain Reserve.

The SJBL runs along the eastern edges of areas being developed as business parks in the City of Riverside. The Sycamore Canyon Business Park, which includes approximately 920 acres of commercial and industrial land uses (south of the junction of I-215 and SR-60), is being developed within the larger Sycamore Canyon area. The Sycamore Highlands Business Park is currently being developed to the south, north of Alessandro Boulevard, within the larger Sycamore Highlands area. In this area, Moreno Valley residential and commercial developments are located to the east of the SJBL.

*Moreno Valley/March Field Station*

The Moreno Valley/March Field Station will be located within the boundaries of the former March Air Force Base, which lies just south of the cities of Riverside and Moreno Valley and comprises land on both sides of the SJBL. The proposed station site will be located on an undeveloped 14.8-acre parcel located east of Meridian Parkway and west of the SJBL, about 750 feet south of Alessandro Boulevard.

The MARB is currently under the jurisdiction of the March JPA, which operates under a joint powers agreement between Riverside County and the cities of Riverside, Moreno Valley, and

Perris. The MARB airfield is utilized for military operations and civilian aviation operations, primarily air cargo. Remaining federal property of the MARB (east of I-215) is utilized by the U.S. Air Force Reserve, Army Reserve, Navy Reserve, Marine Corps Reserve, and Air National Guard (MARB, 2009). The March Inland Port is located east of the SJBL at the MARB.

Unincorporated areas of Riverside County comprise the lands adjacent to and west of the SJBL south of the Moreno Valley/March Field Station. These lands are developed with warehouses, light industry, and business park development, similar to development further north. The City of Perris, to the east of the SJBL in this area, is similar to the unincorporated county areas west of the SJBL, with large areas currently undeveloped or being developed for light industry.

The Moreno Valley/March Field Station (and approximately 400-space parking area) is located within the Meridian Specific Plan area of the MARB, which is a planned industrial business park west of I-215 and south of Alessandro Boulevard. The land use planning and designations were approved for the Meridian Specific Plan. The corresponding EIR was certified with the new land uses evaluated.

*Downtown Perris Station*

The Nan Sanders Elementary School, undeveloped parcels, residential development and business parks are located in Perris (near the city boundary) and west of the SJBL. The site for the Downtown Perris Station is located further south in Perris; this station would be part of the Perris Multimodal Facility that is currently under construction between South C Street on the west, San Jacinto Street on the north, and 4th Street (SR-74) on the south. The Perris Multimodal Transit Facility includes improvements on San Jacinto and C Streets, and will close 2nd Street between C and D Streets. It is surrounded by commercial and residential uses.

*South Perris Station and Layover Facility*

The site of the South Perris Station and Layover Facility is also located in Perris. The South Perris Station and Layover Facility would be constructed adjacent to one another on a single site south of the San Jacinto River (which crosses under the SJBL). The site would be north of the intersection of Mapes and Case Roads, and west of the I-215 ROW. The site is largely undeveloped property east of the Perris Valley Airport and north of the EMWD sewage treatment facility. It currently comprises agricultural fields and a portion of Bonnie Drive and Mapes Road. The lands surrounding this site and this portion of the SJBL are rural in character with active agriculture.

*PVL Floodplains*

Based on a review of the above identified FIRM panels, the southern portion of the SJBL is within a regulatory floodway with Special Flood Hazard Area designation; the proposed South Perris Station and Layover Facility would be within the 100-year floodplain boundary.

### *4.9.2 Regulatory Setting*

Federal Policies and Regulations

*Federal Emergency Management Agency*

Flood zones are geographical areas that FEMA has defined according to varying levels of flood risk, and are shown on FIRM. High risk flood zones, labeled as SFHAs on FIRM, are areas subject to inundation by a 100-year flood. The NFIP and participating communities require that development within floodplains does not exacerbate flooding in adjacent areas. A floodway and the adjacent land areas must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation. Therefore, the participating communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. Permit requirements to develop within regulatory floodways are described in detail in Section 4.8 Hydrology and Water Quality.

State Policies and Regulations

There are no state policies and regulations that supersede local policies and regulations for land use, planning, and zoning within the PVL and adjacent parcels of land. However, agencies including CDFG and SARWQCB will be a part of the permitting process and approvals for the San Jacinto River floodway and channelization projects described above.

Local Policies and Regulations

A number of regional and local land use plans pertain to lands surrounding the PVL corridor. Riverside County Planning Department has developed the RCIP, which includes a comprehensive, integrated program balancing the housing, transportation, and economic needs of a large population with the existing environment and available natural resources. As part of the RCIP, the state-mandated Riverside County General Plan provides comprehensive policies and strategies intended to guide long-term development within the County. The General Plan outlines development policies, objectives, and land use designations. It specifies zoning applicable to unincorporated areas of the County and directs the creation and implementation of municipal General Plans and Specific Plans. While RCTC is exempt from local land use policies under state law, aspects of local plans, policies, and zoning ordinances are reviewed in this analysis for informational purposes (Kleinfelder, 2009).

The PVL is identified in RTP and RTIP, and approved by the Metropolitan Planning Organization and SCAG. The RTIP (adopted 2008) is a listing of all funded transportation projects proposed over a six-year period (Fiscal Years 2008/09 – 2013/14) for the SCAG region.

*Riverside County General Plan 2030/2035*

The land use element of the General Plan designates the general distribution and intensity of all uses of the land in the county. This includes residential, commercial, industrial, public facilities, and open space uses. According to Riverside County Transportation Land Management Agency (TLMA) the General Plan provides development standards related to each land use category, and general policy level direction for an array of land use-related issues such as hillside development and community design (TLMA, 2003).

The County of Riverside has written the Draft General Plan Update for the first 5-year General Plan review cycle. The 2008 update assesses the General Plan's progress and issues related to its implementation (Riverside County, 2008).

*Highgrove 2020 Area Plan*

This area plan generally refers to the community of Highgrove within Riverside County, located west and east of I-215. The areas south of the Highgrove community, including the University City neighborhood and portions of the Box Springs Mountains, are also included in this specific area plan.

*City of Riverside General Plan 2025*

The Riverside 2025 General Plan includes twelve elements that are intended to satisfy State law requirements for California as well as the vision of the City into the year 2025. The Project Planning Area consists of the corporate boundaries of the city of Riverside and the City's Sphere of Influence as approved by the LAFCO as part of its 2006 Municipal Service Review. The Land Use and Urban Design Element defines both the built and natural environments and introduces new mixed-use land use models that will allow Riverside to support more intense development near transit nodes (City of Riverside, 2007).

*Hunter Business Park Specific Plan*

The Hunter Business Park Specific Plan describes a Planned Industrial Park consisting of approximately 1,300 acres of Industrial and related uses, northeast of downtown Riverside. It addresses planning goals that are relevant to property owners, future tenants, developers and the City of Riverside, defines the development framework for the Specific Plan area, and establishes the design guidelines, development criteria and implementation measures necessary to implement the Hunter Business Park Specific Plan (City of Riverside, 2002).

*Sycamore Canyon Business Park Specific Plan (Formerly Box Springs Industrial Park Specific Plan)*

The Specific Plan for Sycamore Canyon Business Park was written in conjunction with the City of Riverside's General Plan. The Specific Plan describes a planned industrial park consisting of approximately 920 acres of industrial and commercial uses within a 1,400-acre project area. Approximately 480 acres of the Sycamore Canyon Wilderness Park is located within the Plan area (City of Riverside, 1993). The Specific Plan's southeastern area is located within the PVL corridor.

*Sycamore Highlands Specific Plan*

Sycamore Highlands is comprised of approximately 420 acres of land located immediately west of State Highway 60 and I-215, near Box Springs. The southerly approximately 350 acres of the Plan Area is part of the Sycamore Canyon Business Park Specific Plan, discussed above. The Sycamore Highlands Plan was written in a manner consistent with the Sycamore Canyon Specific Plan's Goals and Objectives and has been amended over the years to be consistent with the City of Riverside 2025 General Plan (City of Riverside, 2007).

*March JPA General Plan*

The March JPA General Plan is a comprehensive plan designed to outline and delineate use and development of the area known formerly as MARB. The land use designations of the March JPA General Plan Land Use Plan are divided into four general classifications, with a total of 13 distinct land use designations. The Plan Area is to comprise approximately 24 million square ft. (551 acres) of commercial, office, and industrial development (March JPA, 2003).

The Moreno Valley/March Field Station option site falls within proximity to the MARB airfield. To minimize high-risk land uses, the Plan Area contains overlay districts including a Clear Zone, APZ I, and APZ II. Together, these form the Airport Influenced Area I. Within Airport Influenced Area I, high-risk land uses are prohibited and are defined as having a high concentration of people, having critical facility (such as a telephone exchange), or having explosive or flammable materials.

*Meridian Specific Plan*

Within the March JPA jurisdiction, this master-planned employment park contains 1,290-acres located southwest of I-215 and Alessandro Boulevard. Meridian, once known as the March Business Center, is planned as part of the jobs/housing solution within Riverside County with a 15-year build out. The initial development will occur in the northern portion of the development with the final phase planned for the area south of Van Buren Boulevard (March JPA, 2003). Within this specific plan there is a designated rail station. The property for this station site will be donated to RCTC for use as a Metrolink station.

*Mead Valley 2020 Area Plan*

The County of Riverside Mead Valley 2020 Area Plan extends south of the Meridian planning area (e.g., south of MARB) (TLMA, 2003). The Mead Valley Area Plan discusses the land uses and physical development within the unincorporated area west of the City of Perris. Existing land uses consist of the Riverside National Cemetery, a wastewater treatment plant, agricultural, some industrial, and paved public roads Messenia Lane, and Frontage Road. Areas adjacent to and east of the SJBL are designated High Industrial, Community Center, and Business Park.

*City of Perris General Plan 2030*

The City of Perris General Plan divides the city into ten (10) planning areas as a starting point for the 30-year strategy for organizing and cooperatively accommodating development and land use in the city of Perris. The boundaries of some planning areas mirror natural or manmade physical divisions including the I-215 and the San Jacinto River (City of Perris, 2005). A portion of the PVL Corridor is located within the area set forth by the City of Perris General Plan as well as the following Specific Plan Areas.

*Perris Downtown Specific Plan*

The Perris Downtown Specific Plan Study Area is located within the boundaries of the city of Perris and Riverside County. The Plan covers an area from north to the I-215, east to Redlands Avenue, south to Ellis Avenue, and west to A Street. The purpose of the Specific Plan is to provide a base for the revitalization efforts being carried out by the Perris Redevelopment Agency and the citizens of Perris. The PVL Corridor is located within the Perris Downtown Specific Plan Study Area, between D Street and Ellis Avenue.

The Perris Downtown Draft Specific Plan Amendment (Village Walk District) functions as a guide towards the development of the Specific Plan Area in Neighborhood III of the Perris Downtown Specific Plan. The Village Walk District includes the PVL Corridor, between Perris Boulevard and Ramona Drive and extends north, near 7th Street (City of Perris, 2007).

*Green Valley Specific Plan*

The Green Valley Specific Plan outlines a planned community on 1,270 acres south and west of the SJBL. The property consists of open space and agricultural land next to the Perris Valley Airport and wastewater treatment plant. Planned land uses within the Green Valley community include a mix of residential, open space, community facilities, commercial, business parks, industrial, and transportation land use (City of Perris, 1990).

*Riverglen Specific Plan*

The Riverglen Specific Plan describes a master planned community on about 330 acres located north of the SJBL. The Riverglen planning area contains open space and agricultural land north of the Green Valley planning area. The planned Riverglen community would contain residential units along with some commercial, schools, and open space land uses (City of Perris, 1992).

*Riverside County Flood Control and Water Conservation District*

The RCFCWCD was created in 1945 to protect people, property, and watersheds from damage or destruction from flood and stormwaters. The RCFCWCD is designated by FEMA to administer the NFIP program in the western parts of the County where the PVL project is located. The administrator coordinates, implements, and enforces the local floodplain ordinance by granting or denying development permits in accord with its provisions. Any development or encroachments made to the SFHA must be reviewed by the administrator to determine whether proposed building sites would be reasonably safe from flooding and BFEs are not raised which would negatively impact adjacent areas. This may include the submittal of studies, calculations, plans and other information required to meet FEMA requirements.

*Resolution Number 2005-220*

The County approved Resolution No. 2005-220 (2005), setting forth policies and procedures to control developments within the San Jacinto River floodway and requiring permits or applicable approvals from the RCFCWCD, USACE, USFWS, CDFG, and the SARWQCB.

*Western Riverside County Multiple Species Habitat Conservation Plan*

The MSHCP is a comprehensive, multi-jurisdictional HCP focusing on conservation of species and their associated habitats in western Riverside County. The MSCHP is a large, multi-jurisdictional habitat-planning effort in with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region (see Section 3.4 Biological Resources for further discussion).

### *4.9.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Land Use and Planning is defined by:

1. *Does the project physically divide an established community*

2. *Does the project 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*

3. *Does the project conflict with any applicable habitat conservation plan or natural community conservation plan*

### *4.9.4 Project Impacts*

***Does the project physically divide an established community***

The SJBL was constructed in the 1880s, and many of the communities now located within the vicinity of the railroad were established as a result of the railway facilities (MFA, 2003). The Citrus Connection would be constructed in an area that is bordered to the south and west by industrial and transportation facilities and to the north and east by residential and commercial uses. The proposed project would operate entirely within an existing rail corridor and its adjacent parcels will be in an area where the railroad facilities have long been part of the local community setting. Therefore, implementation of the PVL commuter rail service would not restrict the movement of people or physically divide an established community and there would be no impacts.

***Does the project 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***

The proposed PVL corridor is located in western Riverside County, and extends through or adjacent to several municipalities and/or land managing agencies with jurisdiction over the project. These include: City of Riverside, City of Moreno Valley, MARB, City of Perris, and Riverside County.

The land designations surrounding the existing railway corridor accommodate a variety of uses. Table 4.9-1 provides an overview of land uses within and adjacent to the project area, including the proposed station locations, beginning at the Citrus Connection and terminating at the proposed South Perris Station and Layover Facility. Roadway facilities or other geographic features intersecting the railway corridor are used as markers to delineate changes in land use.

The PVL, which would follow the existing SJBL alignment, would be compatible with existing and planned land uses and is consistent with County, City and Specific Plan policies. The evaluation of potential environmental consequences associated with land use reveals consistency with existing and planned land uses along the PVL alignment, including land to be developed as stations and the Layover Facility. As noted, the proposed project is exempt from local land use controls, and so demonstration of compliance with local land use plans and policies is not required. As outlined below, county and city land use plans anticipate and support the PVL:

- The Riverside County General Plan promotes alternative transportation options within western Riverside County as a means for encouraging concentrated housing and employment centers, in order to reduce traffic congestion. Rail transit is envisioned as a travel option that can contribute to higher quality living environments by reducing auto dependency, concentrating compatible land uses, and relieving pressure to develop open space, and directing compatible land use activities to established urban centers. The PVL would be consistent with the alternative transportation goals outlined in this document.
- The City of Riverside General Plan aims to encourage mass transit to reduce roadway congestion, air pollution, and non-point source water pollution. Land use planning was structured to support this principle by directing new growth along transportation corridors. The City of Riverside General Plan includes discussion of the PVL as the 22-mile extension of the SCRRA/Metrolink 91 line. The Land Use and Urban Design Element of the General Plan focuses on incorporating “smart growth” principles into planning and development decisions, and focusing development in already urbanized parts of the City rather than spreading growth to the urban fringes.
- The Hunter Business Park Specific Plan states that existing lead tracks and spurs serve established industrial plants, and it is the intent of the Specific Plan to accommodate rail usage where feasible in the designated Land Use Districts. The rail lines have historically supported facilities at the Hunter Business Park, and are maintained within the Specific Plan. The proposed station sites are within the Hunter Business Park, which is 1,300-acre planning area that contains existing industrial/warehouse facilities, scattered agricultural parcels, and a public park (Hunter Park). According to the City of Riverside General Plan, the Hunter Business Park is planned for redevelopment and business/office buildings in order to serve as a relatively more active employment center, while the Hunter Business Park Specific Plan (City of Riverside, 2002) describes the location of the rail lines within this area as excellent opportunities to serve future industrial-transportation-distribution facilities.
- The City of Moreno Valley General Plan’s Circulation Element states that public transit in the city of Moreno Valley consists primarily of bus service. It is anticipated that Moreno Valley would have access to commuter rail service; specifically, a commuter rail station for the southwest quadrant of Alessandro at I-215 to serve Moreno Valley residents (City of Moreno Valley, 2006). The PVL would also be consistent with the City of Moreno Valley General Plan’s Community Development Element, which encompasses the Land Use Plan of the City of Moreno Valley General Plan. The City of Moreno Valley General Plan places Residential/Office and Commercial land uses within land located nearest to the PVL corridor. The properties are also identified as redevelopment areas, presumably to encourage economic growth.
- The proposed commuter service to serve the March Planning Area would be consistent with the March JPA General Plan, and the March JPA would work with transit providers to ensure that transit programming is oriented to the Meridian area, which is outlined as an economic center. The Meridian Master Plan places a future transit center near the PVL, and similarly, the March Specific Plan places a 15-acre transportation center to accommodate commuter rail service along the PVL corridor. The proposed station would be a permitted

use. The March JPA General Plan identifies the PVL in its Transportation Element, and acknowledges the need for a multimodal facility to serve its planning area. It promotes the creation of adequate regional railway facilities, including the use of SCRRA/Metrolink service along the SJBL.

- The PVL would be consistent with the Mead Valley Area Plan (2003). The Mead Valley Area Plan identifies the SJBL as a viable regional transportation option for residents, employees, and visitors to the area.
- Commuter rail service along the existing SJBL is consistent with the Land Use Element of the City of Perris General Plan, which recognizes the need for future transportation and infrastructure improvements. The specific plans for Green Valley, Riverglen, Perris Downtown and the Village Walk District have incorporated the SJBL by assigning compatible land uses adjacent to the rail corridor, including the future development of commuter rail station planned for the old Perris Depot area. The Downtown Specific Plan describes a pedestrian-friendly Downtown Promenade District of mixed uses, within walking distance of a train station. The Circulation Element specifically identifies the extension of SCRRA/Metrolink service along the SJBL. The use of the existing railway would be consistent with existing and planned land uses, and the implementation of commuter rail service through downtown Perris would be consistent with specific plan policies to enhance and preserve natural and man-made features, and to promote alternative transportation to reduce regional traffic congestion.

Because the project would be compatible with existing and planned land uses and is consistent with federal, state, county, city and Specific Plan policies and regulations concerning land use and zoning ordinances, there will be no impacts.

***Does the project conflict with any applicable habitat conservation plan or natural community conservation plan***

Two habitat conservation, or natural community conservation, plans apply to the PVL project, and include the MSHCP (2003) and the SKR HCP (1996) (See section 3.4 Biological Resources for further discussion).

The purpose of the MSHCP and SKR HCP is to maintain the biological and ecological diversity in an urbanizing region through the assembly of key reserves for the protection of covered species. Although the SKR HCP was established in 1996 prior to the MSHCP, relevant terms of the SKR HCP were incorporated into the MSHCP to ensure the greatest conservation for the largest number of covered species.

Because the MSHCP was developed in conjunction with the Riverside County General Plan and the Community and Environmental Transportation Acceptability Process (CETAP), the cores, habitat blocks, and linkages that have been set aside for assembly as conservation areas were developed in consideration of existing and future land uses, in particular, the region's transportation requirements. The PVL project is subject to the compliance requirements of the SKR HCP and MSHCP, in particular the Urban/Wildlands Interface Guidelines outlined in the MSHCP, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA and RCHCA, implementation of the PVL along the existing SJBL alignment would not conflict with any of the conservation or habitat goals established by the

SKR HCP or the MSHCP, impair the value of wildlife habitat, or cause an ecological intrusion into the existing and proposed conservation areas.

*Western Riverside County Multiple Species Habitat Conservation Plan*

The MSHCP is a means for consolidating and preserving core areas with suitable vegetation and soils to support species, while at the same time preventing fragmented habitat. The MSHCP covers 146 plant and wildlife species, and is administered by the RCA. One of the primary objectives of the MSCHP is to assemble a total of 500,000 acres for management as the MSHCP Conservation Area. The MSHCP identifies a number of existing and proposed features – including cores, habitat blocks, and linkages – which form the basis of the plan's Conservation Area (refer to Section 3.2.3 of the MSHCP). Section 4.4 Biological Resources under the Environmental Setting summarizes the MSHCP Conservation Area features that are located within one-half mile of the PVL project corridor (see Table 4.4-1).

*Stephens' Kangaroo Rat Habitat Conservation Plan*

The SKR HCP is administered by the RCHCA, and encompasses approximately 533,954 acres, which include open space, developed, and agricultural land uses. The SKR HCP established seven permanent core area reserves for SKR, as summarized in Table 4.9-2. Located west of I-215 and the PVL and on both sides of Alessandro Boulevard, the Sycamore Canyon-March Air Force Base Core Reserve covers a total of 2,502 acres across the two core reserve components.

*Moreno Valley/March Field Station*

Two noncontiguous wildlife reserves are in the vicinity of the proposed Moreno Valley/March Field Station. The SKR Sycamore Canyon – March Air Force Base Core Reserve (which coincides with Sycamore Canyon Park and the MSHCP Existing Core D) is located north and south of Alessandro Boulevard and west of the PVL corridor outside of the corridor and west of the Moreno Valley/March Field Station.

The purpose of the MSHCP and SKR HCP is to maintain the biological and ecological diversity in an urbanizing region through the assembly of protected reserves for covered species. These planning efforts have been coordinated with municipal and transportation entities, and in consideration of existing and future land uses. The PVL project is subject to the compliance requirements of the SKR HCP and MSHCP, in particular the Urban/Wildlands Interface Guidelines outlined in the MSHCP, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA and RCHCA, construction and operation of the proposed Moreno Valley/March Field Station option would not impair the value of wildlife habitat or cause an ecological intrusion into the nearby reserve areas.

*South Perris Station and Layover Facility*

MSHCP Proposed Constrained Linkage 19 encompasses the San Jacinto River area, which is located approximately 500 feet west of the proposed South Perris Station. As previously described, the PVL project is subject to the compliance requirements of the MSHCP, in particular its Urban/Wildlands Interface Guidelines, which provide guidance on addressing the indirect effects on wildlife species when projects are located in proximity to reserve areas. Through compliance with the Guidelines and coordination with RCA, construction and operation of the proposed South Perris Station would not impair the value of wildlife habitat or cause an ecological intrusion of MSHCP Proposed Constrained Linkage 19.

### *4.9.5 Mitigation Measures*

Implementation of the PVL project would not result in any impacts with regard to land use and planning. Therefore, no mitigation is required.

## 4.10 NOISE AND VIBRATION

This section of the EIR discusses the potential environmental impacts of the PVL project associated with noise and vibration. This analysis is based on the Noise and Vibration Technical Report (STV Incorporated, 2011) to this EIR as presented in Technical Report C.

CEQA Guidelines require a project to evaluate noise and vibration impacts based upon local policies and regulations. A project will have a significant impact if the noise or vibration that would occur as a result of the project will be greater than the allowable limits defined by federal, state or local policies and regulations.

Depending on the type of project, there are several assessment methods that can be used to predict potential noise or vibration impact levels. The assessment method appropriate for the PVL rail project was developed by the FTA and is described in their guidance manual, *Transit Noise and Vibration Impact Assessment* (FTA, 2006). This guidance manual provides explicit procedures for producing accurate impact assessments for federally-funded mass transit projects. It contains the standard and accepted methodologies for analyzing transit-related noise and vibration impacts throughout the country. It also contains techniques and procedures for development of mitigation of predicted impacts. Therefore, though this EIR is produced for compliance with CEQA, the measurement and prediction methods included in the FTA Guidance Manual were utilized for the PVL project analysis, as they are the most broadly applicable, and are conservative in analysis approach.

### *4.10.1 Environmental Setting*

Noise

*Background*

Noise, otherwise known as unwanted sound, is what humans hear when exposed to small pressure fluctuations in the air (FTA, 2006). Noise is generated by a source, and the magnitude of the noise depends on the type of source and its operating characteristics. In the case of the PVL project, the commuter rail train would be the primary source of noise. Noises associated with commuter rail are primarily generated from the following system elements:

- Diesel train engines, for which the generated noise is largely a function of the rate of acceleration and speed.
- Cooling fans.
- Wheel-rail interaction, a function of the condition of wheels and the rail type (e.g., welded or jointed), rail car suspension and the condition and curvature of the rails.
- Structures, such as trestles, that may amplify sound.
- Horns and crossing gate bells, at and approaching grade crossings.

When excessive noise interrupts activities, such as sleeping, conversing, and watching TV, it can create an ongoing annoyance in communities, especially residential areas. In order to quantify and measure this noise annoyance in the environment, beginning in the 1970s, the USEPA undertook a number of research and synthesis studies relating to community noise of all types. As a result of this research, the USEPA developed descriptors, noise impact criteria, and methods of noise assessment, described below.

Noise is measured using several descriptors:

- Decibel (dB) - The logarithmic unit used to measure sound.

- A-weighted Sound Level (dBA) –The basic noise unit that measures sound audible to humans. Noises contain sound energy at different frequencies whose range depends on the individual noise source. Human hearing does not register the sound levels of all noise frequencies equally, which reduces the impression of the magnitude of high and low pitched sounds. The dBA units are sound levels measured through a process that filters noise levels to predominantly include sounds that are audible to humans. This process reduces the strength of very low and very high pitched sounds, such as low-frequency seismic disturbances and dog whistles, to more accurately measure sounds that affect humans. Normally occurring sounds lie in the range of 40 to 120 dBA. A sample of the dBA of common transit-related and other noise sources is shown on Figure 4.10-1.

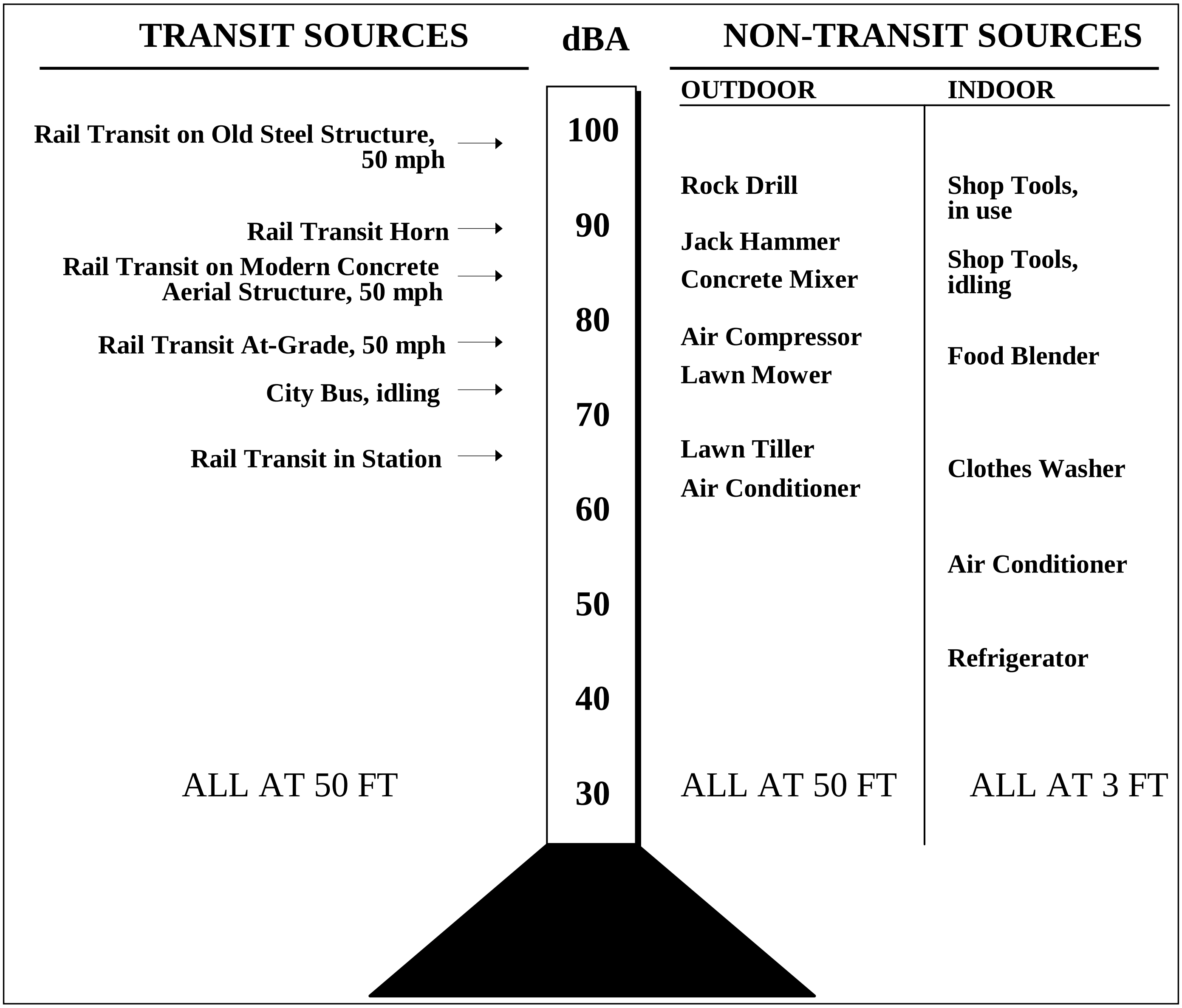
- Equivalent Sound Level ($L_{eq}$) – $L_{eq}$ represents a single value of sound level that quantifies the amount of noise in a specific environment for a particular period of time.

- Hourly Equivalent Sound Level ($L_{eq}$ ($_h$)) - A value that accounts for all levels of sound that occur in a particular location for one hour. For example, as a train approaches, passes by, and recedes into the distance, the dBA will rise, reach a maximum level, and then fade. The $L_{eq}$ ($_h$) for this event would be a value that measures the cumulative impact of each level of sound that resulted from the train's passing, in addition to any other sounds that occurred during one hour. It is particularly useful when measuring the cumulative noise impact for communities.

- Day-Night Sound Level ($L_{dn}$) - A value that accounts for all levels of sound that occur in a particular location for 24 hours. This cumulative value also includes a ten dB penalty imposed on any noise that occurs between 10 PM and 7 AM. $L_{dn}$ is used to measure the cumulative noise impact at residential areas primarily because it takes into account the increased sensitivity to noise at night, which is when most people are sleeping. Typical ranges for community noise in various settings are shown in Table 4.10-1.

**Table 4.10-1**
**Typical Range of $L_{dn}$ in Populated Areas**

| Area | $L_{dn}$, dBA |
|---|---|
| Downtown City | 75–85 |
| "Very Noisy" Urban Residential Areas | 65-75 |
| "Quiet" Urban Residential Areas | 60-65 |
| Suburban Residential Areas | 55-60 |
| Small Town Residential Areas | 45-55 |
| Note: $L_{dn}$= cumulative noise exposure | |
| Source: *Transit Noise and Vibration Impact Assessment* (FTA, 2006) | |




SOURCE:

TRANSIT NOISE AND VIBRATION
IMPACT ASSESSMENT, FTA, MAY 2006

| | | | |
|---|---|---|---|
| PROJECT NO. | 92666 | COMMON INDOOR AND OUTDOOR NOISE LEVELS | FIGURE |
| DRAWN: | 10/16/09 | | |
| DRAWN BY: | JP | | 4.10-1 |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME: 92666dia2EIR.MXD | | | |

A few general relationships may be helpful in understanding the dB scale:

- An increase of one dBA cannot be perceived by the human ear.
- A three dBA increase is normally the smallest change in sound levels that is perceptible to the human ear.
- A ten dBA increase in noise level corresponds to tenfold increase in noise energy, but a listener would only judge a ten dBA increase as being twice as loud.
- A 20 dBA increase would result in a dramatic change in how a listener would perceive the sound.

*FTA Noise Impact Criteria*

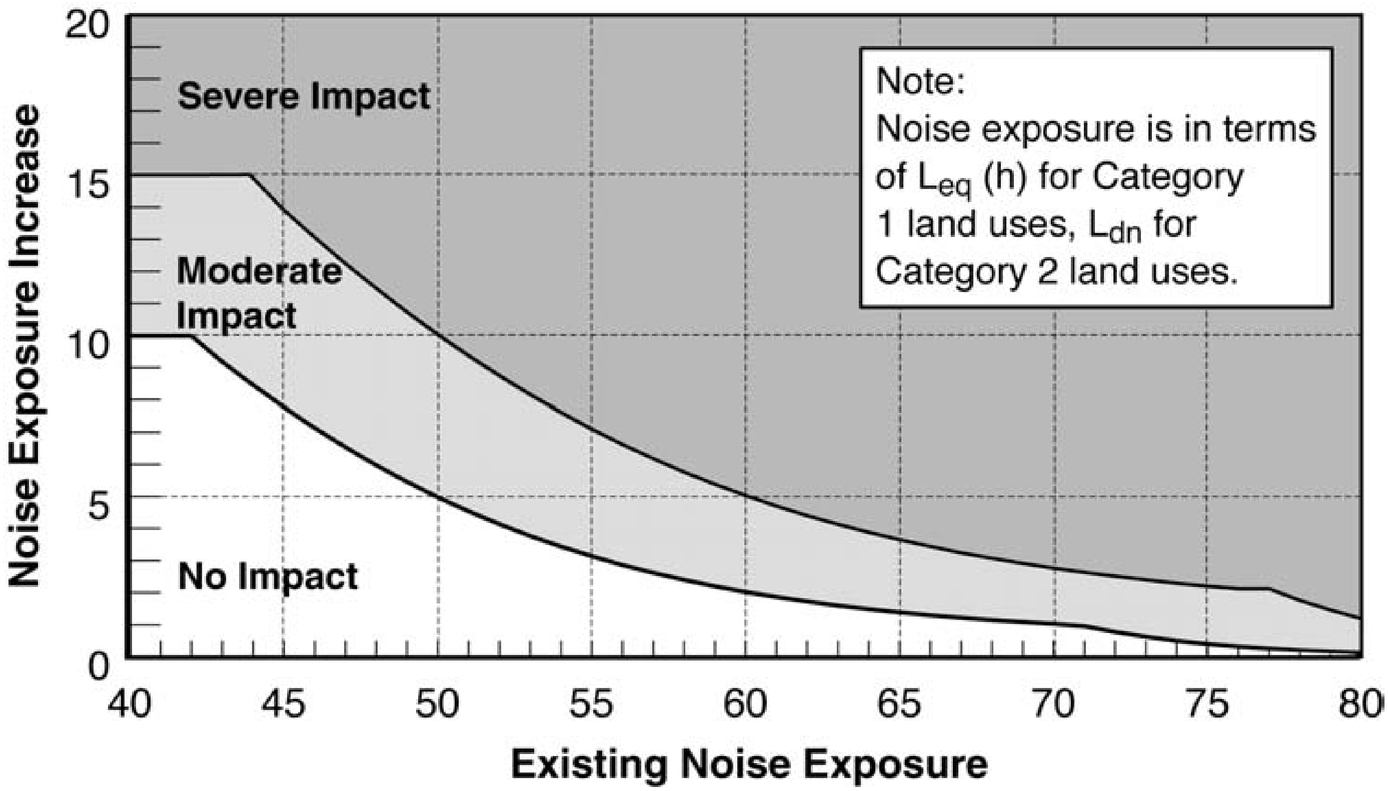
The FTA has established noise criteria to assess potential impacts of transit projects, as shown on Figure 4.10-2. These criteria were developed based on the research done by the USEPA that identified environments particularly sensitive to annoying noises. These environments are known as “noise sensitive land uses” or “sensitive receptors”. The FTA noise criteria group noise sensitive land uses into the following three categories:

- Category 1: Buildings or a park where quiet is an essential element of their intended purpose.
- Category 2: Residences and buildings where people normally sleep. This includes residences, hospitals, and hotels where nighttime sensitivity is assumed to be of utmost importance.
- Category 3: Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material.

For Categories 1 and 3, the $L_{eq}$ noise descriptor is used, while Category 2 properties are assessed utilizing the $L_{dn}$ descriptor. In most cases, these three categories are the only land uses that would be negatively impacted by high noise levels since industrial or commercial areas are generally compatible with high noise levels.

Noise impacts to these three categories as a result of a proposed project are assessed by comparing the existing and future project-related outdoor noise levels as illustrated in the graph provided on Figure 4.10-2. These potential noise impacts fall into three types: “No Impact,” “Moderate Impact,” and “Severe Impact” which correlate with CEQA impact terminology (i.e. no impact, less than significant impact and potentially significant impact).

- No Impact - The project, on average, will result in an insignificant increase in the number of instances where people are “highly annoyed” by new noise.
- Moderate Impact - The change in cumulative noise is noticeable to most people, but may not be sufficient to cause strong, adverse community reactions.
- Severe Impact - A significant percentage of people would be highly annoyed by the noise, perhaps resulting in vigorous community reaction.




SOURCE:

FTA MANUAL FOR TRANSIT NOISE AND VIBRATION
IMPACT ASSESSMENT, FTA, MAY 2006

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| PROJECT NO. | 92666 |
| DRAWN: | 12/21/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666dia3EIR.MXD |

ALLOWABLE TRANSIT
NOISE INCREASES

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.10-2

As the existing level of ambient noise increases, the allowable level of transit noise also increases; however the total amount by which that community's noise can increase without an impact is reduced. As shown in Table 4.10-2, as existing and allowable combined total noise levels increase, the allowable change in noise level decreases.

In addition to FTA criteria, CEQA has defined threshold limits which are related to the 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 (such as the FTA). General plans and local noise ordinances exist for municipalities along the project alignment. These statutes define maximum noise limits for community activities and local development projects. However, these ordinances are typically related to construction noise and nuisance noise levels. For the definition of CEQA impact thresholds as they relate to the proposed project, the FTA impact criteria described above were used. Additional discussion of general plans and local ordinances is included below under the regulations section.

**Table 4.10-2**
**Allowable Transit Noise Level Increases ($L_{dn}$ and $L_{eq}$ in dBA)**

| Existing Noise Levels | Allowable Project Noise Level | Allowable Combined Total Noise Level | Allowable Noise Level Increase |
|---|---|---|---|
| 45 | 51 | 52 | 7 |
| 50 | 53 | 55 | 5 |
| 55 | 55 | 58 | 3 |
| 60 | 57 | 62 | 2 |
| 65 | 60 | 66 | 1 |
| 70 | 64 | 71 | 1 |
| 75 | 65 | 75 | 0 |
| Source: *Transit Noise and Vibration Impact Assessment* (FTA, 2006) | | | |

*Noise Environmental Setting*

Noise sensitive land use areas within the proposed PVL project area were identified by screening GIS data for buildings with residential or institutional uses nearby the PVL corridor. Then, field observations were also made to identify and confirm noise sensitive land use locations within the corridor and the larger study area.

The proposed PVL project area would include portions of the existing BNSF alignment, between the Downtown Riverside Station and the Highgrove area, as well as the SJBL alignment between the areas of Highgrove and Perris. These two active railways would be connected by the proposed new Citrus Connection.

The noise environmental conditions for each segment are described below.

- BNSF segment - The noise environment in the Riverside to Highgrove BNSF Main Line segment is dominated by an extremely heavy volume of rail activity; between 60 and 80 trains travel along it during a typical 24-hour period. The majority of these trains (about 80 percent) are freight. These trains generally operate with three to four diesel locomotives and about 50 to 100 freight cars. Typical speeds are approximately 30 mph. The remaining rail traffic consists of mostly SCRRA/Metrolink, and a few Amtrak trains. The SCRRA/Metrolink trains have a single diesel locomotive and about three passenger cars and travel at average speeds of approximately 50 mph. The Amtrak trains have two to three diesel locomotives and about 15 cars, traveling at about 50 mph. Train traffic occurs during both day and night hours. In addition to rail activity, vehicles traveling on I-215 and SR-60 make a significant contribution to the noise environment, as do vehicles on local streets.

- SJBL segment - The SJBL alignment from Highgrove to Perris currently has about two freight trains traveling on it daily. These trains typically consist of three diesel locomotives and about 25 freight cars and travel at maximum speeds of 20 mph. In those portions of the rail segment that have grade crossings (where the majority of the corridor's noise sensitive receptors are located), horn noise is a significant contributor to the existing noise environment. Noise from automobile traffic becomes significant along the corridor from Moreno Valley to Perris, where the I-215 freeway parallels the SJBL, and grade crossings are limited. However, this portion of the SJBL alignment contains very few sensitive noise receptors.

As a result of the train activity, the existing alignment contains grade crossings areas where warning bells would be required for passing trains. At most crossings, these devices are represented by electro-mechanical railroad warning gongs. At a point ten feet from the gong and in increments of 20 degrees, the sound level should not be more than 105 dBA and not less than 85 dBA. The gongs typically operate between 30 to 60 seconds per normal through train movement. Whenever a train is physically occupying the space where the railroad and roadway intersect, the gongs will be active.

The current CPUC requirements for audible warning devices at grade crossings dictate that bells or other audible warning devices shall be included in all automatic warning device assemblies and shall be operated in conjunction with the flashing light signals. (AREMA, 2007)

*Noise Measurement Programs*

To assist in the assessment of potential impacts, existing noise level measurements were conducted at several selected sensitive receptors along the corridor. The measurement sites were selected on the basis of several factors, the most important of which was the site's potential sensitivity to changes in noise levels. Measurements were taken in 2002 and 2005, and again in 2008/2009 to update and enhance the data.

For all existing noise level measurements, each site was either representative of a unique noise environment, or of nearby similarly situated receptors. Along the BNSF alignment, the primary land uses are industrial and commercial; however, noise monitoring was conducted at several residential properties near the alignment. As the Citrus Connection and the existing SJBL alignment pass through predominately residential neighborhoods, most of the sensitive receptors monitored along these segments are residential in nature. Several non-residential land uses also exist along these segments and were included in the monitoring program as well. These sites include schools, churches and senior centers, also deemed sensitive receptors (Riverside County, 2007; 2008). Both long-term (24-hour) and short-term (20 minutes to 1 hour) measurements were conducted.

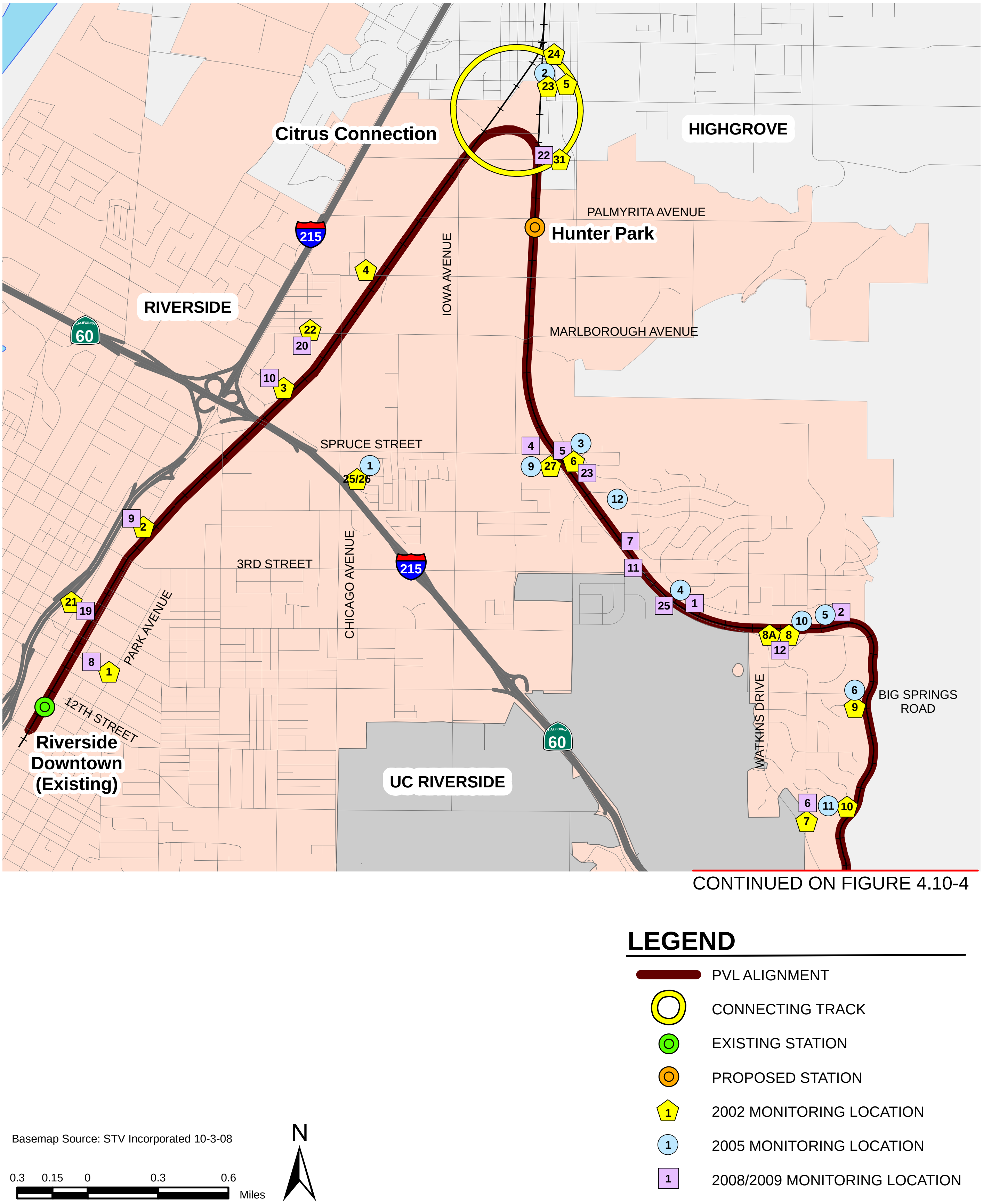
*Summary of the 2002 Measurement Program*

For the 2002 measurement program, 31 noise sensitive sites were monitored along the project corridor. A tabulation of these monitored locations is provided in Table 4.10-3 and monitoring locations are mapped on Figure 4.10-3 and Figure 4.10-4. In general, existing $L_{dn}$ noise levels at sensitive receptors along the BNSF alignment were high and in the "downtown city" noise range, while existing $L_{dn}$ noise levels at residential areas of Riverside and Perris adjacent to the SJBL alignment are in the "'very noisy' urban residential areas" range, as shown in Table 4.10-1.

**Table 4.10-3**
**Summary of Noise Measurements (2002)**

| Site No. | Land Use | Description | Dist. from Tracks (ft) | Existing Noise Level ($L_{dn}$) |
|---|---|---|---|---|
| 1 | SF | 3015 9th St | 450 | 74 |
| 2 | SF | 3112 1st St | 180 | 79 |
| 3 | SF | 1901 Thornton Ave | 80 | 82 |
| 4 | SF | 1148 Ardmore St | 340 | 76 |
| 5 | SF | Transit & Villa Streets | 330, 20 [1] | 78 |
| 6 | SF | 890 Kentwood Dr | 55 | 70 |
| 7 | MF | 10 Watkins Dr | 125 | 68 |
| 8 | SF | 121 Nisbet Way | 80 | 68 |
| 8A | SF | 277 Nisbet Way | 50 | 70 |
| 9 | SF | 396 E Big Springs Road | 125 | 54 |
| 10 | SF | 298 E Manfield St | 110 | 56 |
| 11 | SF | 20511 Claremont | 560 | 61 |
| 12 | SF | 7005 Old Frontage Rd | 500 | 60 |
| 13 | SF | California & Wade Streets | 240 | 68 |
| 14 | School | Nan Sanders Elementary | 140 | 60* |
| 15 | SF | 234 Bowen St | 230 | 59 |
| 16 | SF | 30 C St | 210 | 66 |
| 17 | SF | 10th St & Perris Blvd | 75 | 69 |
| 18 | SF | 124 8th St | 250 | 64 |
| 19 | Hotel | 27272 SR-74 | 130 | 75 |
| 20 | SF | 25688 Sherman Rd | 330 | 54 |
| 21 | Commercial | Old Spaghetti Factory | 250 | 72* |
| 22 | SF | Marlborough Avenue (between Catania Dr & PVL) | 320 | 76 |
| 23 | SF | Villa St ( between Transit Ave & PVL) | 330,125 [1] | 76 |
| 24 | SF | Transit Ave (near Fountain St) | 200,30 [1] | 79 |
| 25/26 | SF | Trailer park (274 Sir Belvidere Dr) | 50 | 72 |
| 27 | Church | St George's Episcopal Church (Spruce St & Watkins Dr) | 180 | 67* |
| 27A | MF | Box Spring & Morton | 125 | 57 |
| 28 | Cemetery | Riverside National | 100 | 61* |
| 29 | Senior Citizens Center | San Jacinto & D St | 95 | 70* |
| 30 | SF | C St & 7th St | 60 | 71 |
| 31 | SF | 1021 Citrus Street | 60 | 70 |

Notes:
* = Noise levels presented as $L_{eq}$
SF = Single family residence and MF = Multi-family residence
(1) = BNSF and SJBL alignments
Source: STV Incorporated (2002)




CONTINUED ON FIGURE 4.10-4

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| PROJECT NO. | 92666 | NOISE AND VIBRATION MONITORING LOCATIONS | FIGURE 4.10-3 |
| DRAWN: | 12/11/09 | | |
| DRAWN BY: | JP | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
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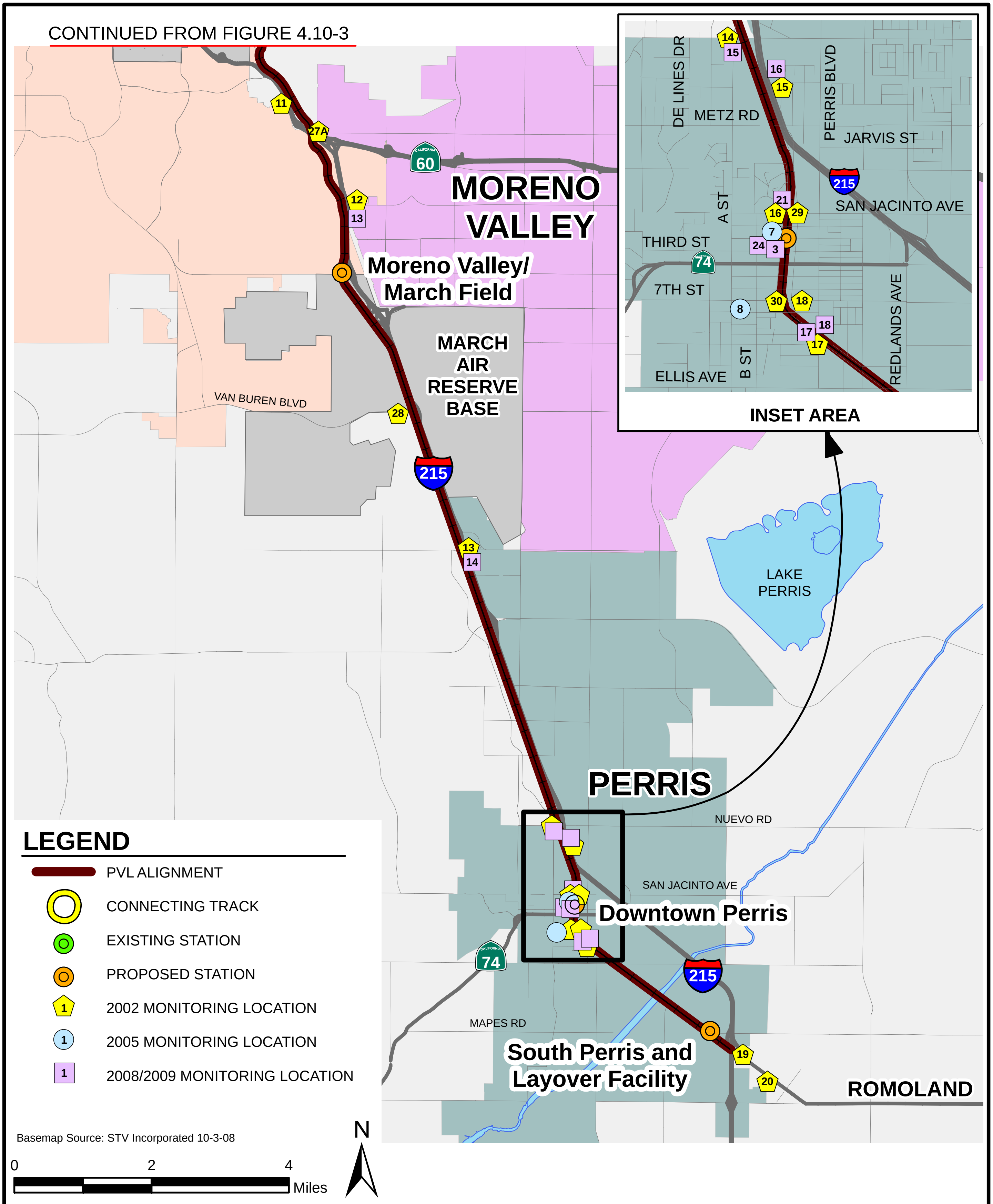


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NOISE AND VIBRATION MONITORING LOCATIONS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE
4.10-4

*Summary of the 2005 Measurement Program*

In 2005, several additional noise measurement locations were identified, including locations suggested by public comment on the Draft EA (see *Perris Valley Line Noise and Vibration Technical Report* prepared by ATS Consulting [2006]). In all, the 2005 measurement program included additional monitoring at 12 noise sensitive sites along the SJBL alignment. A tabulation of these monitored locations is provided in Table 4.10-4 and monitoring locations are mapped on Figure 4.10-3 and Figure 4.10-4. The monitoring at locations along the SJBL alignment indicates that existing $L_{dn}$ noise levels at residential locations of Riverside and Perris are generally in the "'very noisy' urban residential areas" range, as shown in Table 4.10-1. Additional monitoring at non-residential locations indicated $L_{eq}$ values ranging from 49 to 61 dBA.

**Table 4.10-4**
**Summary of Noise Measurements (2005)**

| Site No. | Description | Measure Type(1) | Dist. from Tracks (ft.) | $L_{dn}$, dBA | | No. of Trains(3) |
|---|---|---|---|---|---|---|
| | | | | With Trains | Without Trains(2) | |
| 1 | 103 Sir Dames Dr, Riverside | LT | 35 | 63 | 62 | 3 |
| 2 | 441 Transit Avenue, Highgrove | LT | 35 | 67 | 67 | 3 |
| 3 | 2294 Kentwood/Spruce, Riverside | LT | 100 | 67 | 59 | 8 |
| 4 | 518 W. Campus View, Riverside | LT | 83 | 66 | 57 | 8 |
| 5 | 232 E. Campus View, Riverside | LT | 62 | 65 | 49 | 2 |
| 6 | 396 E. Big Springs Rd., Riverside | LT | 90 | 62 | 54 | 2 |
| 7 | 228 C Street, Perris | LT | 240 | 67 | 67 | 2 |
| 8 | 81W. 8th Street, Perris | LT | 300 | -- | 59 | 0 |
| 9 | Church at Spruce & Watkins, Riverside | ST | 150 | -- | 61 | 0 |
| 10 | Church at Mt. Vernon Crossing, Riverside | ST | 50 | -- | 49 | 1 |
| 11 | Hyatt School/E. Manfield Rd., Riverside | ST | 50 | -- | 50 | 1 |
| 12 | Highland Park off Kentwood, Riverside | ST | 50 | -- | 56 | 0 |

Notes:
(1) LT = long term (24 hours or more), ST = short term (30 minutes to one hour).
(2) For measurements that included one or more train events, this column shows what the $L_{dn}$ would have been without the train noise. No trains passed during the short term noise measurements.
(3) Total number of trains passing measurement position during measurements.

Source: ATS Consulting (2006)

*2008/2009 Measurement Program*

The 2008/2009 noise measurement program included measurements of noise sensitive locations previously monitored in 2002 and 2005, in addition to measurements at several new locations. Schools along the SJBL alignment were specifically re-monitored and other residential and institutional uses were added to the monitoring program. In general, the results of the 2008/2009 monitoring program were consistent with the existing noise environment during the monitoring programs for 2002 and 2005. There were however, several sites within the area of UCR which tended to exhibit lower noise levels for the 2008/2009 measurement program. The overall results of the measurements are summarized in Table 4.10-5 and monitoring locations mapped on Figure 4.10-3 and Figure 4.10-4.

**Table 4.10-5**
**Noise Monitoring Locations for Detailed Noise Assessment 2008/2009**

| Site No. | Description | Measure Type(1) | Dist. from Tracks (ft.) | Ldn, dBA |
|---|---|---|---|---|
| 1 | 518 West Campus View Dr | LT | 117 | 59 |
| 2 | 232 East Campus View Dr | LT | 65 | 56 |
| 3 | 228 C Street | LT | 244 | 70 |
| 4 | St. George's Episcopal Church @ Spruce & Watkins Drive | ST1 | 190 | 57* |
| 5 | Crest Community Baptist Church | ST1 | 163 | 52* |
| 6 | Hyatt Elementary School (4466 Mount Vernon Ave) | ST1 | 370 | 60* [2] |
| 7 | Highland Elementary School | ST1 | 88 | 54* [2] |
| 8 | 3015 9th Street | ST2 | 450 | 69 |
| 9 | 3112 1st Street | LT | 210 | 75 |
| 10 | 1901 Thornton Ave | LT | 90 | 76 |
| 11 | 2970 Watkins Dr | LT | 124 | 66 |
| 12 | 137 Nisbet Way | LT | 180 | 62 |
| 13 | 7005 Old Frontage Rd | ST2 | 564 | 62 |
| 14 | California & Wade Streets | ST2 | 258 | 70 |
| 15 | Nan Sanders School (1461 N. A Street) | ST1 | 123 | 64* [2] |
| 16 | 234 W. Bowen St | ST2 | 235 | 59 |
| 17 | 116 State Street | ST2 | 80 | 72 |
| 18 | New Homes on 9th Street in Perris | ST2 | 300 | 66 [3] |
| 19 | Old Spaghetti Factory | ST1 | 280 | 65* |
| 20 | 1824 Marlboro Ave | ST2 | 260 | 63 |

**Table 4.10-5 (cont'd)**
**Noise Monitoring Locations for Detailed Noise Assessment 2008/2009**

| Site No. | Description | Measure Type(1) | Dist. from Tracks (ft.) | Ldn, dBA |
|---|---|---|---|---|
| 21 | Senior Citizens Center ( 146 W. San Jacinto Ave) | ST1 | 96 | 59* |
| 22 | 1027 Citrus St | LT | 62 | 73 |
| 23 | 842 Kentwood Drive | LT | 80 | 63 [2, 3] |
| 24 | St. James Catholic Church/School | ST1 | 370 | 64* [2, 3] |
| 25 | UCR Day/Childcare ( 3338 Watkins Dr) | ST1 | 175 | 54* [2] |

Notes:
* Represents an $L_{eq}$ value
(1) LT = long term (24 hours or more), ST1 = short term (30 minutes to one hour), ST2 = short term (measurement adjusted to reflect LT $L_{dn}$).
(2) Noise monitoring conducted in 2009.
(3) New monitoring site.
Source: STV Incorporated, (2008/2009)

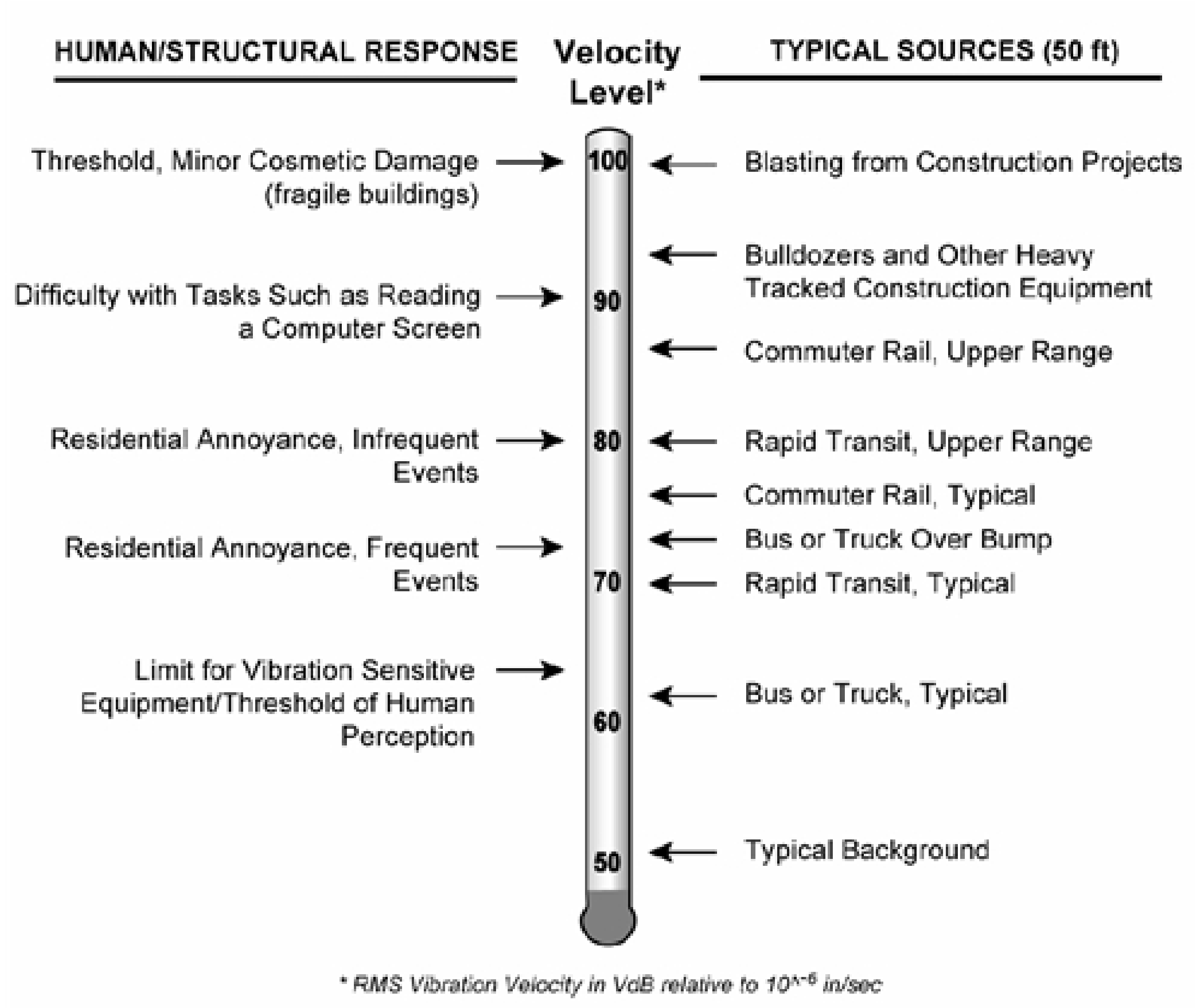
## Vibration

*Background*

Vibration is a type of movement that rapidly fluctuates back and forth, potentially causing "feelable" and audible sensations for humans. Ground-borne vibration (GBV) is usually caused by trains and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment. With trains, GBV is a result of the interaction of wheels and rails, which can cause windows, pictures on walls, or items on shelves to rattle. A rumbling sound can also accompany GBV, known as ground-borne noise (GBN) or noise that radiates from the motion of building surfaces.

Although the effects of GBV usually go unnoticed outdoors, it can be a significant annoyance to people inside buildings. Though GBV is almost never of sufficient magnitude to cause even minor cosmetic damage to buildings, the primary consideration is whether GBV would be intrusive to building occupants or interfere with interior activities or machinery.

For the purposes of vibration impact assessment, GBV is measured by the descriptor "vibration decibels", abbreviated in this document as VdB. The vibration decibel level in residential areas is usually 50 VdB or lower, though humans usually begin to perceive vibration effects once the vibration level reaches 65 VdB (FTA, 2006). Beyond 80 VdB, vibration levels are often considered unacceptable by humans. GBN is measured in dBA. Figure 4.10-5 shows examples of typical vibration levels, sources, and human responses.




SOURCE:

FTA MANUAL FOR TRANSIT NOISE AND VIBRATION
IMPACT ASSESSMENT, FTA, MAY 2006

| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/21/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666dia1EIR.MXD |

TYPICAL VIBRATION LEVELS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.10-5

*FTA Vibration Impact Criteria*

As with noise impact criteria, the FTA vibration impact criteria are based on the three land use categories, although the categories are somewhat different. One important difference is that outdoor spaces are not included in Category 3 for vibration. This is because human annoyance from GBV requires the interaction of the ground vibration with a building structure. Consequently, the criteria apply to indoor spaces only, and there are no vibration impact thresholds for outdoor spaces such as parks.

Although there has been relatively little research into human and building response to GBV, there is substantial experience with vibration from rail systems. In general, this collective experience indicates that:

- The threshold for human perception is approximately 65 VdB. Vibration levels in the range of 70 to 75 VdB are often noticeable but acceptable. Beyond 80 VdB, vibration levels are often considered unacceptable.

- Human response to vibration is more closely related to the maximum vibration level than to the number of vibration causing events. The FTA guidelines do however have different standards for “frequent” vs. “infrequent” events.

- For human annoyance, there is a relationship between the number of daily events and the degree of annoyance caused by GBV. FTA guidance includes an eight VdB difference in the impact threshold between projects that would result in more than 70 events per day and those that would involve fewer than 30 events per day. The higher noise threshold for “infrequent events” is applicable to the PVL project.

Vibration impact criteria assume that there is a relationship between the number of daily events and the degree of annoyance caused by GBV and GBN (when there are fewer vibration events each day, it takes higher vibration levels to evoke the same community response). This assumption is accounted for in the vibration impact criteria by setting different allowable VdB and dBA levels for proposed projects with varying numbers of vibration events - “Frequent Events” are defined as more than 70 events per day, “Occasional Events” range between 30 and 70 events per day, and “Infrequent Events” are fewer than 30 events per day.

The FTA vibration impact criteria are shown in Table 4.10-6. The VdB and dBA levels shown are the vibration limits allowed for each category.

**Table 4.10-6**
**Ground-Borne Vibration and Ground-Borne Noise Impact Criteria for General Assessment**

| Land Use Category | GBV Impact Levels (VdB re: 1 micro-inch/sec) | | | GBN Impact Levels (dB re: 20 micro Pascals/ sec) | | |
|---|---|---|---|---|---|---|
| | Frequent Events(1) | Occasional Events(2) | Infrequent Events(3) | Frequent Events(1) | Occasional Events(2) | Infrequent Events(3) |
| Category 1: Buildings where vibration would interfere with interior operations | 65 VdB | 65 VdB | 65 VdB | N/A(4) | N/A(4) | N/A(4) |
| Category 2: Residences and buildings where people normally sleep | 72 VdB | 75 VdB | 80 VdB | 35 dBA | 38 dBA | 43 dBA |
| Category 3: Institutional land uses with primary daytime use | 75 VdB | 78 VdB | 83 VdB | 40 dBA | 43 dBA | 48 dBA |

Notes:
(1) "Frequent Events" is defined as more than 70 vibration events per day.
(2) "Occasional Events" is defined as between 30 and 70 vibration events per day.
(3) "Infrequent Events" is defined as less than 30 vibration events per day.
(4) N/A means "not applicable". Vibration-sensitive equipment is not sensitive to ground-borne noise.

Source: *Transit Noise and Vibration Impact Assessment* (FTA, 2006)

These FTA vibration criteria do not specifically account for existing sources of vibration. The existing environment may currently cause a significant number of perceptible GBV or GBN events, regardless of the components of a proposed project. Because of this, the FTA has established several separate criteria for existing vibration sources and the methods for addressing each, described below:

- For infrequently-used rail corridor (corridors with fewer than five trains per day), use the general vibration criteria (see Table 4.10-6 above).
- For, moderately-used rail corridor (corridors with five to twelve trains per day), if existing vibration exceeds the general vibration criteria and if estimated vibration levels are at least 5 VdB less than existing vibration, there would be no impact from the proposed project. For other situations, use the general vibration criteria (Table 4.10-6).
- For heavily-used rail corridor (corridors with more than twelve trains per day), if existing vibration exceeds the general vibration criteria and if the proposed project would double the number of vibration events, the project would cause additional impact. If estimated vibration levels for the proposed project would be 3 VdB or less than existing vibration, there would be no impact.

*Vibration Environmental Setting*

he proposed PVL project would be located within an existing transit corridor that currently causes GBV and GBN. The vibration environmental conditions for each segment are described below:

- The BNSF alignment is a heavily used rail corridor with 80 to 100 trains traveling along it during a typical 24-hour period. Vibration along the BNSF alignment is dominated by the existing train activity. Heavy-duty vehicle traffic also contributes to "feelable" vibration in the area.

- The SJBL alignment is an infrequently used rail corridor with about two freight trains per day. Vibration along the SJBL is dominated by the existing train activity. In addition, heavy-duty vehicle traffic along I-215 and other local roads contribute to "feelable" vibration in the area.

*Vibration Measurement Program*

To assess the potential vibration impacts as a result of the PVL project, vibration measurements were conducted at 12 selected sensitive receptors in 2005. A tabulation of these monitored locations is provided in Table 4.10-7 and monitoring locations are mapped on Figure 4.10-3 and Figure 4.10-4.

**Table 4.10-7**
**Summary of Vibration Measurements (2005)**

| Site No. | Description | Measure Type(1) | Dist. from Tracks (ft.) | Avg. Train Vib., VdB(2) | No. of Trains (3) |
|---|---|---|---|---|---|
| 1 | 103 Sir Dames Dr, Riverside | LT | 50 | 82 | 3 |
| 2 | 441 Transit Avenue, Highgrove | LT | 50 | 72 | 3 |
| 3 | 2294 Kentwood/Spruce, Riverside | LT | 50 | 73 | 8 |
| 4 | 518 W. Campus View, Riverside | LT | 50 | 72 | 8 |
| 5 | 232 E. Campus View, Riverside | LT | 50 | 70 | 2 |
| 6 | 396 E. Big Springs Rd., Riverside | LT | 50 | 58 | 2 |
| 7 | 228 C Street, Perris | LT | 50 | -- | 2 |
| 8 | 81W. 8th Street, Perris | LT | 50 | -- | 0 |
| 9 | Church at Spruce & Watkins, Riverside | ST | 50 | -- | 0 |
| 10 | Church at Mt. Vernon Crossing, Riverside | ST | 50 | 78 | 1 |
| 11 | Hyatt School/E. Manfield Rd., Riverside | ST | 50 | 68 | 1 |
| 12 | Highland Park off Kentwood, Riverside | ST | 50 | -- | 0 |

Notes:
(1) LT = long term (24 hours or more), ST = short term (30 minutes to one hour).
(2) Average train vibration level when locomotives passed measurement position.
(3) Total number of trains passing measurement position during measurements.

Source: ATS Consulting (2005)

There has been no major development within the PVL project area since 2005, and therefore no significant increase in traffic, and the volume and type of freight service on the BNSF and SJBL alignments has remained relatively constant. Since the dominant source for ambient vibration levels was and still is the existing freight service on these alignments, the 2005 data is representative of 2009 ambient noise levels.

The 12 measurement sites were selected on the basis of several factors, the most important of which was the site's potential sensitivity to changes in vibration levels. Each site was either representative of a unique vibration environment, or of nearby, similarly situated receptors. Along the BNSF alignment, the primary land uses are industrial and commercial; however, vibration monitoring was conducted at two pockets of residential properties near the alignment. As the Citrus Connection and the existing SJBL alignment pass through predominately residential neighborhoods, most of the sensitive receptors monitored along these segments are residential in nature. Several non-residential land uses also exist along these segments and were included in the monitoring program; these sites include schools, churches and senior centers. Pass-by vibration measurements were taken during existing freight operations.

Noise and Vibration Analysis Methodology

Following is an outline of the approach used to identify potential noise and vibration impacts from the proposed PVL. The approach follows the Detailed Assessment guidelines outlined in the FTA Guidance Manual. The steps taken were:

1. Identify representative noise and vibration sensitive receptors.

Sensitive land uses along the corridor were identified for monitoring and assessment, by first referencing recent aerial photography. Sensitive receptors, such as residential and non-residential buildings including schools, churches and senior centers were then grouped together based on their location relative to the tracks, grade crossings, and other geographic and PVL operational factors that might affect noise levels. Within each grouping, a representative receptor was included in the noise model. Sites closest to the alignment were first selected. If no impacts were predicted at these locations then impacts at locations further from the alignment would be unlikely. If impacts were predicted for Category 2 properties, the next closest row of properties would be assessed for impact. When impacts were predicted at Category 3 sites, no further assessment was required since the next closest receptors were located too far away from the noise source and their lines of sight to the alignment would be blocked by intervening buildings. These two factors eliminated any potential impact at Category 3 locations located further from the alignment.

2. Determine existing noise and vibration levels.

This was done and reported above.

3. Develop noise and vibration prediction models.

*Noise*

For FTA noise predictions, the major noise components related to the operation of the PVL project are represented in the prediction model. They include horn noise and locomotive engine noise. Also included in the model were noise from rail cars and bells at grade crossings. Noise from wheel squeal (near the tight radius curve at the proposed "Citrus Connection") was assessed separately since the operation of the PVL train corridor would include as part of the design plans, wayside applicators which would ~~eliminate~~ significantly reduce noise from wheel squeal for all tight radius curves.

For horn noise, the key modeling factor is that trains are required by law to blow their horns from 15 to 25 seconds or ¼ mile before a grade crossing. The effect of horn noise increases at properties closest to grade crossings. Locomotive and rail car noise are primarily dependent upon the speed of travel along the tracks. Crossing bells are required to be sounded before any train passes by a grade crossing for at least 30 seconds. The prediction of wheel squeal is dependent upon the length of the curve and the rate of speed that the train is traveling along the curve. The "Citrus Connection" curve is the only proposed new curve for the PVL project and, it also represents the longest tight radius curve along the entire PVL corridor.

Reference levels for all of the above described noise components (e.g. horn, locomotive, rail car, crossing bells and wheel squeal) were obtained from the FTA Guidance Manual tables. Their combined impact at nearby sensitive properties was then calculated. For potential noise from PVL stations, parking lots and the Layover Facility, the FTA Guidance Manual noise screening table was utilized. Because night-time noise is more annoying to humans than day-time noise (e.g, a train horn heard at 3 AM is more annoying than a train horn heard at 1 PM), the FTA prediction formulas applied to the PVL project include an adjustment in the actual noise level to simulate the increased annoyance of night-time activities. Utilizing these adjustments penalty, the noise from project-related night-time activity is effectively increased to account for the increased annoyance level of residents.

Existing freight operations along the PVL corridor were also considered in the analysis. However, their relevance to the assessment is only in terms of their effect on the existing 24-hour monitoring levels shown in the noise monitoring Tables 4.10-3, 4.10-4 and 4.10-5, above. Essentially, existing freight operations increases a community's existing 24-hour Ldn level. As described above in the impact criteria section, this increase in noise level results in a lessening in the amount of noise that a future rail project would be allowed to contribute to a community without resulting in an impact.

*Vibration*

The FTA impact criteria for GBV are based on the amount of vibration generated within buildings. This means that accurate predictions of GBV require accounting for: (a) the forces generated by the interaction of the wheels and rails (b) the effects that the localized soil conditions have on vibration propagation, and (c) how building structures respond to ground vibration.

To develop predictions of GBV for the PVL, the FTA's Guidance Manual generalized base vibration curve was applied. The base curve is referenced to typical locomotive vibration characteristics and the distance from the vibration source to the affected receiver. Applying key adjustment elements to the curve such as speed and building response results in the final vibration prediction level.

Based on the results, the appropriate vibration criteria are then applied to determine potential impact. The FTA vibration criteria are based on the frequency of operation (less than 30 events per day based on the forecasted number of SCRRA/Metrolink trains) along the PVL corridor. For the PVL corridor, this would mean that the forecasted number of SCRRA/Metrolink trains would be in the "Infrequent Events" category, as described in the FTA Guidance Manual. Because the impact criteria already takes into account the frequency or number of train trips, only one single train event is required for the assessment.

According to Chapter 8 of the FTA Guidance Manual, the number of existing daily freight train events along the SJBL is too few to warrant inclusion in the analysis. When existing rail corridors have less than five freight train trips per day, the existing environment would not include a significant number of perceptible GBV events. As a result, the FTA vibration assessment for the PVL project would only be related to future Metrolink trains traveling along the SJBL.

4. Estimate future noise and vibration levels at the representative receivers:

Using the noise and vibration models described above, future train-generated noise and vibration levels were estimated and compared against the applicable FTA impact thresholds to identify potential noise and vibration impacts.

5. Identify noise and vibration mitigation, if required.

For the proposed PVL project, noise mitigation would be accomplished by two methods, including the construction of noise barriers and the use of building sound insulation. Noise barriers are very effective in eliminating severe and moderate impacts to affected properties; the technique is recognized by FTA as effective, and is used by state agencies and commissions such as RCTC and Caltrans. The length of the barrier is important to its effectiveness so that noise generated beyond the ends of the barrier do not compromise the effectiveness of the barrier at noise-sensitive locations. A solid, impervious wall that is sufficiently high to block the direct view of the noise source will typically reduce community noise levels, at locations within about 200 feet of the track, by five to 15 dBA. At locations where noise barriers are not feasible and/or cannot totally eliminate potential impacts, building sound insulation is recommended for individual residences. Building sound insulation typically involves caulking and sealing gaps in the building envelope, wall insulation and installation of acoustical windows and solid-core doors. Depending on the quality of the original building façade, especially windows and doors, sound insulation treatments can improve the noise reductions from transit noise by 5 to 20 dBA.

With respect to vibration impacts, according to the FTA Guidance Manual, the application of mitigation measures such as the use of ballast mats or resiliently supported ties would significantly reduce the level of predicted vibration. One of these mitigation measures would be applied to the track alignment and would extend along areas where impacts were predicted. When assessing vibration mitigation it is important to consider both the degree of impact and the cost as any mitigation should be both reasonable and feasible.

*4.10.2 Regulations*

Federal Policies and Regulations

*Noise Control Act of 1972 and Quiet Communities Act of 1978*

The Noise Control Act of 1972 (42 USC) and the Quiet Communities Act of 1978 (42 USC 4913) were established by the USEPA to set performance standards for noise emissions from major sources, including transit sources. Though these acts are still in effect, the enforcement of the stated noise emission standards shifted to state and local governments in 1981.

*Federal Railroad Administration*

The Federal Railroad Administration (FRA) adopted the USEPA railroad noise standards as its noise regulations (49 CFR 11, part 210) for the purpose of enforcement. The standards provide specific noise limits for stationary and moving locomotives, moving railroad cars, and associated railroad operations in terms of A-weighted sound level at a specified measurement location.

Federal Transit Administration

The FTA provides capital assistance for a wide range of mass transit projects from new rail rapid transit systems to bus maintenance facilities and vehicle purchases. FTA's environmental impact regulation is codified in Title 23, Code of Federal Regulations, Part 771.In addition, as noted in this analysis, FTA has developed and codified the prevailing noise and vibration assessment procedures, which are used herein.

State Policies and Regulations

*California Noise Control Act of 1973*

The California Health and Safety Code established the California Noise Control Act of 1973 (§46000 et seq.) to "establish and maintain a program on noise control." This act mirrors the federal Noise Control Act of 1972 and also defers the enforcement of noise emission standards to local county and city agencies.

*California Government Code Section 65302 (f)*

California Government Code Section 65302 (f) states that general plans must include a noise element section which identifies and appraises noise problems in the community, and which recognizes the guidelines established by the Office of Noise Control. The adopted noise element should serve as a guideline for compliance with the state's noise standards.

*California Public Utilities Commission Requirements*

The current CPUC requirements for audible warning devices at grade crossings dictate that bells or other audible warning devices shall be included in all automatic warning device assemblies and shall be operated in conjunction with the flashing light signals. (AREMA, 2007)

Local Policies and Regulations

The PVL project would be subject to local policies and regulations relative to construction noise and local nuisance noise levels. These statutes define maximum noise limits for existing community activities and future land development projects; however, as they do not contain explicit noise criteria governing future rail operations, they do not pertain to the assessment of these future operations. As a result, for the PVL project, local policies and regulations are applied to potential on-site project construction activities.

*Riverside County General Plan*

The Riverside County General Plan Noise Element provides several policies pertaining to the location of new potentially noise-sensitive uses and sets forth planning criteria to maximize the compatibility of uses adjacent to rail corridors and stations. The Noise Element, addresses excessive noise exposure, and provides community planning for the regulation of noise (Riverside County, 2008). This element includes policies, standards, criteria, programs, diagrams, a reference to action items, and maps related to protecting public health and welfare from noise. Policy No. 10.4 recommends noise mitigation features where rail operations impact existing adjacent residential or other noise-sensitive uses.

The Riverside County General Plan defines "noise sensitive land uses" as a series of land uses that have been deemed sensitive by the State of California. These land uses require a serene environment as part of the overall facility or residential experience and include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas.

*Riverside County Ordinance No. 847*

Riverside County Ordinance No. 847 establishes countywide standards for regulating noise (Riverside County, 2007). For example, in residential land uses, the maximum dB level allowed from 7 AM to 10 PM is 55, while the maximum dB level allowed from 10 PM to 7 AM is 45. With a few exceptions, no person shall create any sound that causes the exterior sound level on any other occupied property to exceed the stated sound level standards. For construction-related activities that exceed these standards, an application for a construction-related exception must be made to the Director of Building and Safety accompanied by the appropriate filing fee.

In this ordinance, "sensitive receptors" are defined as land uses that are identified as sensitive to noise in the Noise Element of the Riverside County General Plan.

*Riverside County Code, Title 15.04.020 (F)*

According to the Riverside County Municipal Code, Title 15.04.020 (F), whenever a construction site is within one-quarter mile of an occupied residence or residences, no construction activities may be undertaken between the hours of 6 PM and 6 AM during the months of June through September and between the hours of 6 PM and 7 AM during the months of October through May. Exceptions are allowed only with the written consent of the building official.

Operational noise levels are regulated by the Riverside County Department of Industrial Hygiene to limit the level of noise from industrial and other stationary source operations. Worst-case scenario levels for stationary noise sources projected to the property line of an occupied residential property are to remain below 45 dBA during nighttime hours (10 PM to 7 AM), and are not to exceed 65 dBA during daytime hours (7 AM to 10 PM). Sensitive receptors, such as rest homes, schools, hospitals, mental care facilities, places of worship, and libraries, are described in the Riverside County General Plan. Noise generating uses that result in noise levels greater than 65 dBA are discouraged near these areas of increased sensitivity.

*City of Riverside General Plan*

The Noise Element in the City of Riverside General Plan includes policies and plans that protect existing and planned land uses from significant noise impacts and ways to minimize noise impacts. Policies N - 4.1 through N - 4.5 specifically address ground transportation-related noise impacts and noise reduction features that should be considered, including earthen berms and landscaped walls.

The Noise Element also refers to the City of Riverside Municipal Code, Title 7 for regulations regarding construction noise.

*City of Riverside Municipal Code, Title 7*

The City of Riverside Municipal Code, Title 7 sets forth standards and regulations that control unnecessary, excessive, and/or annoying noise in the City (City of Riverside, 2007). It is enforced by the Code Enforcement Division of the Community Development Department and the Riverside Police Department. Based on Table 4.10-8, unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than thirty minutes in any hour; or

2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than fifteen minutes in any hour; or

3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or

4. The exterior noise standard of the applicable land use category, plus fifteen decibels, for the cumulative period of more than one minute in any hour; or

5. The exterior noise standard of the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

**Table 4.10-8**
**City of Riverside – Exterior Noise Standards**

| Land Use Category | Time Period | Noise Level |
|---|---|---|
| Residential | Night (10 PM to 7 AM)<br>Day (7 AM to 10 PM) | 45 dBA<br>55 dBA |
| Office/Commercial | Any time | 65 dBA |
| Industrial | Any time | 70 dBA |
| Community Support | Any time | 60 dBA |
| Public Recreation Facility | Any time | 65 dBA |
| Non-urban | Any time | 70 dBA |

Section 7.35.010 specifically addresses construction-related activities. Construction work that exceeds the allowable noise standards (in Table 4.10-8) may not occur between the hours of 7 PM and 7 AM on weekdays, between 5 PM and 8 AM on Saturday, or at any time on Sunday or federal holidays.

*City of Moreno Valley Municipal Code*

According to the Moreno Valley Municipal Code, section 11.80.020, no person shall maintain, create, operate or cause to be operated on private property any source of sound in such a manner as to create any non-impulsive sound which exceeds the limits set forth for the source land use category (for daytime 60dB residential and 65dB commercial, for nighttime 55dB residential and 60dB commercial) when measured at a distance of 200 feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. Any source of sound in violation of this subsection shall be deemed prima facie to be a noise disturbance.

According to the Moreno Valley Municipal Code, section 11.80.030, no person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of 8 PM and 7 AM the following day such that the sound there from creates a noise disturbance, except for emergency work by public service utilities or for other work approved by the city manager or designee. This section shall not apply to the use of power tools. With respect to construction, any construction within the city shall only be as follows: Monday through Friday (except for holidays which occur on weekdays), 6 AM to 8 PM; weekends and holidays (as observed by the city and described in Chapter 2.55 of this code), 7 AM to 8 PM, unless written approval is obtained from the city building official or city engineer (Ord. 759 § 5.5, 2007; Ord. 484 § 3.2 (part), 1995).

*City of Perris General Plan*

The City of Perris General Plan does not discuss specific noise requirements for railroads, but it does provide goals, policies, and implementation measures that address future land use compatibility with noise from rail traffic (City of Perris, 2006). Implementation Measure III.A.1 of Policy III.A states that the City of Perris will work with BNSF and RCTC to upgrade aging rail with new continuous welded rail and to install noise reduction features in residential areas.

*City of Perris Municipal Code, Chapter 7.34*

Chapter 7.34 of the City of Perris Municipal Code declares that excessive noise levels are detrimental to the health and safety of individuals and are therefore prohibited by the provisions of Ordinance 1082 codified in this chapter (City of Perris, 2000). The maximum noise level allowed during the hours of 10 PM and 7 AM is 60 dBA, and 80 dBA is allowed between 7 AM and 10 PM.

Construction noise is restricted to 80 dBA at residential property lines, and construction is restricted to the hours of 7 AM to 7 PM. Construction is prohibited on Sundays and holidays except for Columbus Day and Washington's Birthday.

*Quiet Zones*

Although not recommended here as mitigation, as it is not a mitigation that RCTC has the authority to put in place, an additional option to reduce noise includes quiet zones. Since the adoption of the FRA 2005 Train Horn & Quiet Zone Final Rule, public authorities have had the option to maintain and/or establish quiet zones provided certain supplemental or alternative safety measures are in place and the crossing accident rate meets FRA standards. RCTC has previously donated $26,000 to the City of Riverside to study the potential for "quiet zones" at grade crossings in the city. The current Metrolink guidelines for local agencies that wish to establish quiet zones include early coordination with Metrolink followed by diagnostic meetings with the principal stakeholders. In this case the stakeholders would include Metrolink, RCTC, the City of Riverside, the City of Perris, BNSF and the CPUC.

*4.10.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Noise and Vibration is defined by:

1. *Would the project cause 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*

2. *Would the project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels*

3. *Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity about levels existing without the project*

4. *Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project*

5. *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*

6. *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*

Discussion is provided following.

*4.10.4 Project Impacts*

***Would the project cause 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***

With regard to the PVL project rail operations, criteria applicable to the assessment of potential project-related noise impacts as defined by CEQA would be governed by the FTA impact criteria described above. Based on these criteria, Tables 4.10-9, 4.10-10, and 4.10-11 show the results from ~~the~~ Noise and Vibration Technical Report C. The projected noise impacts are summarized below. Tables 4.10-9, 4.10-10 and 4.10-11 characterize the type of impact using the FTA criteria, and identify the proposed mitigation and the number of decibels that the mitigation would reduce noise by.

Trains

By 2012, commuter train operations would consist of twelve total train movements per day with the proposed project. These operations would include four trains leaving South Perris for Riverside (to connect to LA Union Station) in the AM, two trains from South Perris to Riverside in the PM, one train from Riverside to South Perris in the AM, and five trains from Riverside to South Perris in the PM.

Trains are assumed to operate with one diesel locomotive and six to eight passenger cars on rail. The PVL would use welded rail throughout, reducing train-rail noise. Free flow train speeds along the study corridor would range from 25 to approximately 60 mph. FRA and CPUC rules currently require that all trains approaching roadway-rail grade crossings blow their horns for one-quarter of a mile prior to reaching the grade crossing. In addition, as trains pass grade crossings, warning devices are sounded.

Under the FTA methodology, noise impacts are projected at several Category 2 land uses (residences and buildings where people normally sleep) located along the SJBL in Riverside, north of the UCR campus. The majority of the predicted impacts would be a result of the train horns being sounded by trains scheduled to pass through areas with sensitive land uses prior to 7 AM, the demarcation between nighttime and daytime in the calculation of Ldn. Noise from grade crossing warning devices would only affect homes nearby the intersection and would be minimal in comparison to the sounding of train horns. Noise impacts are projected at a total of 83 residential locations all of which would be located in the UCR area. Impacts at 18 of the total 83 residential locations would be characterized as severe. The FTA severe impact designation is analogous to the CEQA potentially significant impact. Table 4.10-9 and 4.10-10 present the findings of the noise analysis and its characterization for Category 2 land uses, along the length of the SJBL.

Noise impacts are also predicted for three Category 3 buildings. In the UCR area of Riverside, these impact locations would include the school gymnasium of the Highland Elementary School, St George's Episcopal Church, and Crest Community Baptist Church. None of these impacts would be severe. No impacts on Category 3 buildings were predicted in Perris. Table 4.10-11 presents the land use Category 3 noise impact predictions.

**Table 4.10-9**
**Detailed Noise Impact Assessment Category 2 Land Uses for Riverside**

| Description[1] | Dist. To Track CL, ft | Land Use | No. Dwelling Units | Track Side[2] | Horn | Exist Ldn, dBA | Speed, mph | | Predicted Ldn, dBA | Impact Threshold | | Impacts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | No. Dwelling Units | | |
| | | | | | | | IB | OB | | Impact | Severe | Type[3] | Impact | Severe | Mitigation[4]/ Barrier Reduction |
| **RIVERSIDE** | | | | | | | | | | | | | | | |
| 1st Street | 210 | SF | 4 | OB | IB | 75 | 45 | 45 | 59.9 | 65.0 | 73.2 | None | | | |
| Thornton Avenue | 90 | SF | 17 | OB | OB | 76 | 45 | 45 | 58.6 | 65.0 | 74.0 | None | | | |
| Transit Avenue | 141 | SF | 12 | IB | OB | 67 | 30 | 30 | 63.2 | 62.2 | 67.5 | Moderate | | | |
| Citrus Street 1 | 62 | SF | 1 | IB | OB | 73 | 30 | 30 | 66.7 | 65.0 | 71.7 | None | 1 | | SI |
| Citrus Street 2 | 102 | SF | 2 | IB | OB | 73 | 30 | 30 | 60.9 | 65.0 | 71.7 | None | | | |
| Kentwood 1 | 170 | SF | 3 | IB | OB | 67 | 60 | 60 | 54.8 | 62.2 | 67.5 | None | | | |
| Kentwood 2 | 186 | SF | 2 | IB | OB | 67 | 60 | 60 | 54.9 | 62.2 | 67.5 | None | | | |
| Kentwood 3 | 80 | SF | 7 | IB | IB | 63 | 60 | 60 | 63.7 | 59.6 | 65.0 | Moderate | 14 | | NB / 7dB |
| Kentwood 4 | 80 | SF | 6 | IB | IB | 63 | 60 | 60 | 62.1 | 59.6 | 65.0 | Moderate | 6 | | NB / 4dB |
| Kentwood 5 | 80 | SF | 1 | IB | Both | 63 | 60 | 60 | 65.1 | 59.6 | 65.0 | Severe | | 1 | SI |
| Kentwood 6 | 150 | SF | 1 | IB | OB | 67 | 60 | 60 | 62.0 | 62.2 | 67.5 | None | | | |
| Kentwood 7 | 186 | SF | 2 | IB | OB | 67 | 60 | 60 | 59.3 | 62.2 | 67.5 | None | | | |
| Kentwood 8 | 160 | SF | 1 | IB | Both | 67 | 60 | 60 | 62.2 | 62.2 | 67.5 | Moderate | 1 | | SI |
| Watkins 1 | 124 | MF | 3 | OB | IB | 66 | 60 | 60 | 60.8 | 61.5 | 66.8 | None | | | |
| Watkins 2 | 140 | MF | 6 | OB | IB | 66 | 60 | 60 | 59.7 | 61.5 | 66.8 | None | | | |
| Watkins 3 | 140 | MF | 7 | OB | NO | 66 | 60 | 60 | 53.9 | 61.5 | 66.8 | None | | | |
| Watkins 4 | 140 | MF | 10 | OB | OB | 66 | 60 | 60 | 55.3 | 61.5 | 66.8 | None | | | |
| Watkins 5 | 124 | MF | 9 | OB | OB | 66 | 60 | 60 | 56.0 | 61.5 | 66.8 | None | | | |
| Watkins 6 | 124 | MF | 6 | OB | IB | 66 | 60 | 60 | 60.2 | 61.5 | 66.8 | None | | | |
| Highlander 1 | 127 | SF | 8 | IB | OB | 59 | 30 | 30 | 57.4 | 57.2 | 62.9 | Moderate | 8 | | NB / 3dB |
| Highlander 2 | 127 | SF | 1 | IB | Both | 59 | 30 | 30 | 63.2 | 57.2 | 62.9 | Severe | | 1 | SI |

**Table 4.10-9 (cont'd)**
**Detailed Noise Impact Assessment Category 2 Land Uses for Riverside**

| Description[1] | Dist. To Track CL, ft | Land Use | No. Dwelling Units | Track Side[2] | Horn | Exist Ldn, dBA | Speed, mph | | Predicted Ldn, dBA | Impact Threshold | | Impacts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | No. Dwelling Units | | | |
| | | | | | | | IB | OB | | Impact | Severe | Type[3] | Impact | Severe | Mitigation[4]/ Barrier Reduction |
| Highlander 3 | 152 | SF | 1 | IB | Both | 59 | 30 | 30 | 56.7 | 57.2 | 62.9 | None | 1 | | |
| W. Campus View 1 | 127 | SF | 6 | IB | IB | 59 | 30 | 30 | 61.9 | 57.2 | 62.9 | Moderate | 6 | | NB / 5dB |
| W. Campus View 2 | 117 | SF | 7 | IB | NO | 59 | 30 | 30 | 55.4 | 57.2 | 62.9 | None | | | |
| W. Campus View 3 | 125 | SF | 9 | IB | OB | 62 | 30 | 30 | 61.4 | 58.9 | 64.5 | Moderate | 9 | | NB / 6dB |
| W. Campus View 4 | 104 | SF | 8 | IB | OB | 59 | 30 | 30 | 60.3 | 57.2 | 62.9 | Moderate | 8 | | NB /5dB |
| W. Campus View 5 | 104 | SF | 6 | IB | NO | 59 | 30 | 30 | 55.9 | 57.2 | 62.9 | None | | | |
| Nisbet Street 1 | 137 | SF | 6 | OB | OB | 62 | 30 | 30 | 60.9 | 58.9 | 64.5 | Moderate | 6 | | NB / 3dB |
| Nisbet Street 2 | 137 | SF | 5 | OB | OB | 62 | 30 | 30 | 60.8 | 58.9 | 64.5 | Moderate | 5 | | NB / 3dB |
| Mt. Vernon 1 | 110 | SF | 1 | OB | OB | 62 | 30 | 30 | 65.0 | 58.9 | 64.5 | Severe | | 1 | SI |
| Shady Grove | 356 | SF | 11 | IB | OB | 62 | 30 | 30 | 56.8 | 58.9 | 64.5 | None | | | |
| E. Campus View 1 | 80 | SF | 4 | IB | IB | 56 | 25 | 25 | 65.3 | 55.7 | 61.6 | Severe | | 4 | NB / 11dB |
| E. Campus View 2 | 65 | SF | 4 | IB | IB | 62 | 25 | 25 | 67.9 | 58.9 | 64.5 | Severe | | 4 | NB[5] / 10dB |
| E. Campus View 3 | 65 | SF | 4 | IB | IB | 56 | 25 | 25 | 66.8 | 55.7 | 61.6 | Severe | | 7 | NB[6] / 13dB |
| Big Springs | 120 | SF | 4 | OB | No | 62 | 30 | 30 | 57.3 | 58.9 | 64.5 | None | | | |
| Quail and Swain | 140 | SF | 5 | OB | No | 62 | 30 | 30 | 56.7 | 58.9 | 64.5 | None | | | |
| Masters Avenue | 170 | SF | 4 | OB | No | 62 | 30 | 30 | 55.8 | 58.9 | 64.5 | None | | | |
| E. Manfield Street | 130 | SF | 3 | OB | No | 62 | 30 | 30 | 57.0 | 58.9 | 64.5 | None | | | |
| Total, SJBL, Riverside | | | | | | | | | | | | | 65 | 18 | |

Notes:
(1) See Appendix A of the Noise and Vibration Technical Report to this EIR for graphics showing each receptor cluster on aerial photographs.
(2) IB = inbound side of track, OB = outbound side of tracks.
(3) Represents FTA impact criteria, with respect to CEQA criteria; "impact" = "less than significant", "severe" = "potentially significant impact"
(4) NB= Noise Barrier, SI = Sound Insulation
(5) Home would require mitigation at this location (see Mitigation Measure NV-2).
(6) Includes three moderately impacted second row buildings.

Source: STV Incorporated (2009)

**Table 4.10-10**
**Detailed Noise Impact Assessment Category 2 Land Uses for Perris**

| Description(1) | Dist. To Track CL, ft | Land Use | No. Dwelling Units | Track Side(2) | Horn | Exist Ldn, dBA | Speed, mph | | Predicted Ldn, dBA | Impact Threshold | | Impacts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | No. Dwelling Units | | |
| | | | | | | | IB | OB | | Impact | Severe | Type(3) | Impact | Severe | Mitigation(4)/ Barrier Reduction |
| **PERRIS** | | | | | | | | | | | | | | | |
| C Street | 220 | SF | 19 | OB | Both | 70 | 46 | 46 | 61.8 | 64.4 | 69.5 | None | | | |
| 10th Street | 120 | SF | 1 | OB | Both | 72 | 30 | 30 | 61.2 | 65.0 | 70.9 | None | | | |
| State Street | 80 | SF | 1 | OB | Both | 72 | 30 | 30 | 63.3 | 65.0 | 70.9 | None | | | |
| 9th Street | 208 | SF | 3 | IB | Both | 66 | 30 | 30 | 53.7 | 61.5 | 66.8 | None | | | |
| Case Road | 130 | MF | 12 | OB | IB | 72 | 30 | 30 | 61.7 | 65.0 | 70.9 | None | | | |
| Total, SJBL, Perris | | | | | | | | | | | | | 0 | 0 | |

Notes:
(1) See Appendix A of the Noise and Vibration Technical Report to this EIR for graphics showing each receptor cluster on aerial photographs.
(2) IB = inbound side of track, OB = outbound side of tracks.
(3) Represents FTA impact criteria, with respect to CEQA criteria; “impact” = “less than significant”, “severe” = “potentially significant impact”
(4) NB= Noise Barrier, SI = Sound Insulation

Source: STV Incorporated (2009)

**Table 4.10-11**
**Detailed Noise Impact Assessment Category 3 Land Uses**

| Description | Dist. To Track CL, ft | Track Side[(1)] | Horn | Exist Leq,[(2)] dBA | Speed, mph | | Predict Leq, | Impact Threshold | | Impact | Mitigation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | IB | OB | dBA | Impact | Severe | Type[3] | Type[(4)]/Barrier Reduction |
| St George's Episcopal Church | 190 | OB | IB | 57 | 60 | 60 | 61.4 | 61.2 | 67.0 | Moderate | SI |
| UCR Day Care | 175 | OB | IB | 54 | 30 | 30 | 57.1 | 59.9 | 65.8 | None | |
| Highland Elementary | 88 | IB | IB | 52 | ~~30~~60 | ~~30~~60 | 60.5 | 59.9 | 65.8 | Moderate | NB / 3dB |
| Crest Community Baptist Church | 163 | IB | OB | 52 | 30 | 30 | 63.3 | 59.1 | 65.1 | Moderate | NB / 6dB |
| Mt Vernon Day Care | 180 | OB | IB | 52 | 25 | 25 | 58.7 | 59.1 | 65.1 | None | |
| Hyatt Elementary School | 370 | OB | No | 60 | 35 | 35 | 58.1 | 62.8 | 68.4 | None | |
| Nan sanders Elementary School | 123 | OB | No | 64 | 60 | 60 | 55.6 | 65.2 | 70.6 | None | |
| Senior Citizens Center | 96 | IB | OB | 59 | 44 | 44 | 60.2 | 62.2 | 67.9 | None | |
| St. James School | 370 | OB | Both | 64 | 46 | 46 | 56.2 | 65.2 | 70.6 | None | |

Notes:
(1) See the Noise and Vibration Technical Report to this EIR for graphics showing each receptor cluster on aerial photographs.
(2) IB = inbound side of track, OB = outbound side of tracks.
(3) Represents FTA impact criteria, with respect to CEQA criteria; "impact" = "less than significant", "severe" = "potentially significant impact"
(4) NB= Noise Barrier, SI = Sound Insulation

Source: STV Incorporated (2009)

Stations and Parking Lots

Noise due to the operation of a train station is primarily associated with automobile traffic entering and exiting the station drop-off and parking areas. The noise analysis considered the parking lots at each of the four proposed opening year stations. The proposed station parking lots would range from approximately 440 to 880 cars. However, all noise sensitive receptors are located beyond the FTA screening distances (as shown in Appendix C of ~~the PVL~~ Noise and Vibration Technical Report C~~document~~) for all proposed stations and parking lots. This is significant since screening distances are conservatively based on the lowest FTA threshold of impact as indicated in Chapter 4 of the FTA Guidance Manual. As a result, sensitive receptors located beyond this distance would not experience noise disturbance from station or parking lot operations (see section 4.2 of the FTA Guidance Manual). Noise from station emergency generators would also not result in any impact from stations as they are not considered to be a normal operating component of the project and would only be used in the event of an emergency (e.g., a power outage).

Layover Facility

Trains in the vicinity of the Layover Facility in South Perris would be traveling at low rates of speed and therefore are not expected to be significant sources of noise. In addition, the proposed Layover Facility (for overnight storage and light, routine maintenance of the trains) is located substantially further away from noise sensitive resources than 1,000 feet, the FTA noise screening distance for noise sensitive land uses with respect to noise from a Layover Facility. As a result, noise impacts related to the Layover Facility are not expected.

Summary of Results

Utilizing FTA noise impact criteria, the results of the noise study indicate that both moderate and severe noise impacts would occur at several locations along the proposed PVL corridor. For the 2012 operational year, moderate impacts were predicted at 83 separate Category 2 locations along the alignment. Of these 83 impact locations, 18 were predicted to be severe. The predicted noise impacts were located in the UCR area. Noise predictions at Category 3 locations revealed moderate impacts at three locations which included St. George's Episcopal Church, Crest Community Baptist Church, and Highland Elementary School.

As a result of the noise prediction analysis, an assessment of measures that would mitigate the predicted noise impacts was conducted. The identified mitigation measures (noise barriers, sound insulation) which would eliminate all predicted noise impacts at noise sensitive properties are also shown in Tables 4.10-9, 4.10-10 and 4.10-11 above (Mitigation Measures NV-1 and NV-2).

***Would the project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels***

The proposed PVL project would be located within an existing rail corridor that currently generates GBV and GBN. The vibration environmental conditions for each segment are described below:

- The BNSF alignment is a heavily used rail corridor with 80 to 100 trains traveling along it during a typical 24-hour period. Vibration along the BNSF alignment is dominated by the existing train activity. Heavy-duty vehicle traffic also contributes to "feelable" vibration in the area.

- The SJBL alignment is an infrequently used rail corridor with about two freight trains per day. Vibration along the SJBL is dominated by the existing train activity. In addition, heavy-duty vehicle traffic along I-215 and other local roads contribute to "feelable" vibration in the area.

Subsequently, the BNSF corridor (from the existing Riverside Rail Station to Citrus Street) would be considered a heavily used rail corridor (i.e. more than 12 trains per day, as defined in the FTA guidance) whose existing vibration levels would exceed the FTA impact criteria. Therefore, based on the expected volume for the proposed PVL, future vibration impacts would not be expected to occur at vibration sensitive locations in the area of the BNSF corridor. With respect to the existing SJBL corridor, freight train volume is expected to remain constant in the future at approximately two freight trips per day. Therefore, the SJBL corridor would be considered an infrequently used rail corridor (i.e. fewer than five trains per day, as defined in the FTA guidance). As a result, based on the FTA Guidance Manual the use of the FTA general vibration curve would be an appropriate method of assessment.

Details of the vibration predictions are presented in Table 4.10-12 and Table 4.10-13 for residential land uses in Riverside and Perris, respectively. Table 4.10-14 presents the vibration predictions for institutional land uses (schools and churches) for the entire SJBL alignment. All vibration levels have been predicted using the procedures outlined above.

**Table 4.10-12**
**Predicted Levels of Ground-Borne Vibration, Category 2 (Residential) Land Uses for Riverside**

| Description | Dist (Ft) | Land Use | No. Dwell Units | Track Side1 | Speed | | Impact Threshold | Predicted Vibration | Impact | No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | IB | OB | VdB | VdB | Y/N? | |
| Citrus Street | 62 | SF | 3 | IB | 30 | 30 | 80 | 78 | N | |
| Kentwood 1 | 170 | SF | 5 | IB | 35 | 35 | 80 | 69 | N | |
| Kentwood 2 | 140 | SF | 4 | IB | 60 | 60 | 80 | 76 | N | |
| Kentwood 3 | 80 | SF | 14 | IB | 60 | 60 | 80 | 81 | Y | 14 |
| Watkins 2 | 140 | MF | 6 | OB | 60 | 60 | 80 | 76 | N | |
| Watkins 4 | 140 | MF | 7 | OB | 60 | 60 | 80 | 76 | N | |
| Watkins 3 | 140 | MF | 10 | OB | 60 | 60 | 80 | 76 | N | |
| Watkins 1 | 124 | MF | 9 | OB | 60 | 60 | 80 | 78 | N | |
| Watkins 5 | 124 | MF | 4 | OB | 60 | 60 | 80 | 78 | N | |
| Highlander | 127 | SF | 10 | IB | 30 | 30 | 80 | 72 | N | |
| W. Campus View 1 | 127 | SF | 13 | IB | 30 | 30 | 80 | 72 | N | |
| W. Campus View 2 | 117 | SF | 13 | IB | 30 | 30 | 80 | 73 | N | |
| W. Campus View 3 | 125 | SF | 9 | IB | 30 | 30 | 80 | 72 | N | |
| W. Campus View 4 | 104 | SF | 5 | IB | 30 | 30 | 80 | 74 | N | |
| Nisbet Way | 137 | SF | 11 | OB | 30 | 30 | 80 | 71 | N | |
| Mt. Vernon 1 | 110 | SF | 1 | OB | 30 | 30 | 80 | 73 | N | |
| Mt. Vernon 2 | 180 | SF | 1 | OB | 30 | 30 | 80 | 68 | N | |
| E. Campus View 1 | 80 | SF | 3 | IB | 25 | 25 | 80 | 73 | N | |
| E. Campus View 2 | 65 | SF | 9 | IB | 25 | 25 | 80 | 75 | N | |
| Big Springs | 120 | SF | 4 | OB | 30 | 30 | 80 | 73 | N | |
| Quail and Swain | 140 | SF | 5 | OB | 30 | 30 | 80 | 70 | N | |
| Masters Avenue | 170 | SF | 4 | OB | 30 | 30 | 80 | 68 | N | |
| E. Manfield Street | 130 | SF | 3 | OB | 30 | 30 | 80 | 72 | N | |
| **Total, SJBL, Riverside** | | | | | | | | | | **14** |
| Source: STV Incorporated (2009) | | | | | | | | | | |

**Table 4.10-13**
**Predicted Levels of Ground-Borne Vibration, Category 2 (Residential) Land Uses for Perris**

| Description | Dist (Ft) | Land Use | No. Dwell Units | Track Side1 | Speed | | Impact Threshold | Predicted Vibration | Impact | No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | IB | OB | VdB | VdB | Y/N | |
| C Street | 244 | SF | 19 | OB | 46 | 46 | 80 | 67 | N | |
| 10th Street | 120 | SF | 1 | OB | 30 | 30 | 80 | 73 | N | |
| State Street | 80 | SF | 1 | OB | 30 | 30 | 80 | 75 | N | |
| 9th Street | 300 | SF | 5 | IB | 30 | 30 | 80 | 62 | N | |
| Case Road | 130 | MF | 12 | OB | 30 | 30 | 80 | 72 | N | |
| **Total, SJBL, Perris** | | | | | | | | | | **0** |
| Source: STV Incorporated (2009) | | | | | | | | | | |

**Table 4.10-14**
**Predicted Levels of Ground-Borne Vibration, Category 3 (Institutional) Land Uses**

| Description | Dist (Ft) | Land Use | Track Side1 | Speed | | Impact Threshold | Predicted Vibration | Impact | No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | IB | OB | VdB | VdB | Y/N | |
| St George's Episcopal Church | 190 | Church | OB | 60 | 60 | 83 | 74 | N | |
| UCR Day Care | 175 | Day Care | OB | 30 | 30 | 83 | 69 | N | |
| Highland Elementary | 88 | School | IB | 60 | 60 | 83 | 81 | N | |
| Crest Community Baptist Church | 163 | Church | IB | 30 | 30 | 83 | 69 | N | |
| Hyatt Elementary School | 370 | School | OB | 35 | 35 | 83 | 63 | N | |
| Senior Citizens Center | 72 | Community Center | IB | 44 | 44 | 83 | 81 | N | |
| St. James School | 370 | School | OB | ~~60~~46 | ~~60~~46 | 83 | 68 | N | |
| **Total, SJBL, Perris** | | | | | | | | | **0** |
| Source: STV Incorporated (2009) | | | | | | | | | |

Summary of Results

*Rail Operations*

Utilizing FTA vibration criteria, the results of the PVL vibration study indicate that future SCRRA/Metrolink rail vibration levels generated under the 2012 operational year would be generally in ranges below the FTA vibration impact thresholds. However, vibration impacts would occur along one residential section of the PVL corridor. Affected homes are located in the UCR area just south of Spruce Street and north of the Highland Elementary School along the eastern side of the proposed PVL alignment. A total of 14 homes extending approximately 1,200 feet along the proposed alignment would be affected. The distances between the PVL alignment and existing homes in this section range from 80 to 90 feet.

Train operations from the proposed PVL project will result in vibration impacts in the UCR area of Riverside. Mitigation measures to reduce vibration include the installation of ballast mats or resiliently supported ties (under-tie pads). The proposed mitigation measures allows for the selection of either one or of these two methods to reduce vibration to below a significant impact (Mitigation Measures NV-3 and NV-4).

Stations, Parking Lots and the Layover Facility

Trains in the vicinity of stations and the Layover Facility would be traveling at low rates of speed and therefore are not expected to result in any vibration impacts at nearby sensitive receptors. In addition, automobile parking areas would be utilized by rubber-tired vehicles. Rubber-tired vehicles do not generate vibration impacts because of the nature of tire-pavement interaction with respect to vibration impacts. No impacts are expected from these areas.

***Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity about levels existing without the project***

As shown in the noise impact tables, Table 4.10-9 and Table 4.10-11, in areas near downtown Riverside, there would be no noise impacts as the dominant existing noise level source at sensitive areas near the PVL would be from the existing rail activity along the BNSF alignment. However, in the UCR campus area along the existing SJBL alignment, there are several sensitive properties at which both moderate and severe noise impacts are predicted to occur. These impacts were therefore subsequently addressed with the application of mitigation measures.

In addition to noise from train horns, locomotives and crossing bells, wheel squeal on tight radius curves (<10 times the SCRRA/Metrolink locomotive wheel base or 900 feet) can contribute to community noise levels. Table 4.10-15 lists all short radius curves along the proposed PVL alignment. As wheel squeal noise can be significant, wayside applicators will be installed as part of project implementation in all areas of the corridor with short radius curves. Wayside applicators apply a friction control material to the top of the rail and the gage face to reduce the metal to metal friction that causes wheel squeal. According to the Transit Cooperative Research Program – "Wheel/Rail Noise Control Manual" (Transportation Research Board, 1997) a report which was sponsored by the FTA, the use of a petroleum lubricant would reduce squeal while the use of a water lubricant would eliminate squeal. These steps taken to reduce wheel squeal from the commuter rail operations would also reduce the existing wheel squeal from BNSF freight trains, which do and would continue to operate along the SJBL.

**Table 4.10-15**
**Summary of Wheel Squeal Locations**

| Curve Number | Description | Residential Area |
|---|---|---|
| P-1A | The Citrus Connection | Yes |
| P-3B | Near East Campus Drive | Yes |
| P-3D | Box Springs Area | Yes |
| P-4A | Box Springs Area | Yes |
| P-4C | Box Springs Area | Yes |
| P-4D | Box Springs Area | Yes |
| P-4E | Box Springs Area | Yes |
| P-4F | Box Springs Area | Yes |
| P-4G | Near Watkins Drive and Poarch Road | No |
| P-6C | Near Intersection of I-60 and I-215 | No |
| P-18A | Perris | Yes |
| Based on PVL 30% Engineering Drawings | | |

The only location at which the construction of new PVL rail would result in a short radius curve would be the "Citrus Connection" (P-1A). The Citrus Connection curve is also the longest curve along the entire extent of the PVL alignment. This length along with the required slower train speeds along the curve would increase the wheel squeal noise exposure time. Therefore, as requested by the FTA, an analysis of wheel squeal noise was conducted at this location. The analysis of the noise contribution from wheel squeal was conservatively performed for nearby sensitive residences. A reference SEL of 136 dBA used in the wheel squeal prediction equation was obtained from the FTA Guidance Manual Table 6-7. The resulting analysis indicated that the wheel squeal noise component would result in impacts to residences in the area of Transit

Avenue. Predicted project noise levels would surpass the FTA noise impact criteria by 1 dB. However, as mentioned above, it is important to note that as part of the PVL project, RCTC will include wayside applicators on all short radius curves. These measures would therefore successfully reduce the significance of wheel squeal noise on all segments of the PVL alignment, including the "Citrus Connection" area. As a result, with the wheel squeal noise component successfully reduced, no noise impacts would result at residences along Transit Avenue.

***Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project***

The construction noise assessment ~~Site-related~~indicates that construction activities would not result in any significant noise impacts at any nearby noise-sensitive receptors. The conclusions of the construction noise assessment are based on the use of the FTA construction noise criteria and they apply to both day- and night-time construction activities. While no significant impacts would be predicted to occur, construction activities may result in ~~occasional and sporadic~~temporary, short-term increases in noise levels, not unlike ~~in noise-sensitive areas adjoining the project alignment. Many of these site-related construction activities needed to implement the proposed project are~~those typical of ~~those that occur for~~common street and utility projects. However, given the linear configuration of the construction corridor, only small area segments would likely experience construction noise at any given time. Once grade crossing improvements along with the excavation and grading of the track base are completed, specialized track equipment would move continuously along the alignment constructing the new track. The export of soils from the project site may result in increased noise levels along roadways in the immediate project area. However, because the amount of exported soils from each location along the PVL alignment is finite, the site vehicular access would change frequently as construction moves along the alignment. Therefore, any resulting noise increase would be temporary since no single roadway segment would be affected for more than a few weeks. According to the FTA Manual, this would not constitute a long period of time for a construction-related activity and, thus, would not result in any impact. With respect to noise from the construction of the stations, only the proposed Downtown Perris Station would be located nearby noise sensitive receptors; however, station construction would only last approximately two months. ~~Some night-time work may also have to occur, such as track realignment. This would require prior approval by the locality in which the night-time activity is to take place. With respect to noise from the construction of the stations, only the proposed Downtown Perris Station would be located nearby noise sensitive receptors; however, station construction would only last approximately two months.~~ Any potential ~~impacts~~increase in noise levels would be temporary in nature and would generally only occur between about 6 AM and 7 PM, Monday through Friday. The exact hours when project construction would be allowed are restricted to the hours described in the local construction noise policies above for the individual localities. For all construction activities, standard construction noise control measures would be required to reduce the likelihood of any temporary noise increases.

As mentioned above, some night-time work may also have to occur, such as track realignment. Because local ordinances typically allow only day-time construction, this would require prior approval by the locality in which the night-time activity is to take place.

Although the overall length of construction for the entire PVL project would be approximately 18 months, disturbances at individual receptor locations would not last for more than several months. As mentioned above, ~~A~~any potential construction noise impacts on schools and churches would be less than significant since project construction noise levels would not surpass the FTA construction noise criteria levels; however, both sporadic and temporary increases in construction noise above local construction noise ordinances levels may occur. Any temporary increases would be based on potential occurrences of atypical events given the inconsistent and transitory nature of some construction activities and equipment usage. Consequently, the contractor would be required to use standard construction noise control measures such as temporary construction noise barriers, low noise emission equipment, and the use of acoustic enclosures for particularly noisy equipment to reduce the likelihood of any increases in construction noise above the local noise ordinance maximum levels. The longest sustained construction period near ~~these~~ sensitive receptors would likely result from station construction and, as mentioned above, would last approximately two months. However, because of the relative small scale of a typical rail station, the use of heavy construction equipment would only occur during a short segment of that two month period. According to the PVL Construction Staging Plan, some night-time construction is scheduled to occur specifically for new track layout. Because local codes allow construction only during day-time hours, any project-related night-time construction activity would require the project to obtain from the municipality written consent for an exemption, or variance to these codes.

For mobile construction activities, the delivery of construction materials, such as the rail, rail ties, ballast, and specialized track equipment, would be accomplished using the existing rail rather than being delivered by truck. Also, staging yards would be located strategically so as to limit the travel time for construction crews. These processes would serve to limit the exposure radius of traffic-related construction noise in sensitive areas.

The construction activity that would create the most noise and vibration is pile driving associated with the San Jacinto River bridge replacement~~s~~ which is ~~near~~ adjacent to the proposed ~~South Perris~~ Layover Facility~~, around the San Jacinto River~~. However, as there are no noise sensitive receptors located within approximately one mile of ~~locations nearby~~ the proposed Layover Facility and the pile driving sites, construction-related noise impacts would not occur. In addition, pile driving would be temporary in nature, and any site specific pile driving would likely be completed in under a week.

Other locations along the alignment would also be potentially impacted by construction noise. To determine whether construction of the proposed PVL project would result in any noise impacts to sensitive receptors at these locations, an FTA general assessment procedure for construction noise was conducted for a representative residential location at 228 C Street in Perris. This location was chosen because it would be representative of a property which would be affected by typical track laying construction represented by activities such as culvert modifications and embankment work as well as track and road crossings construction. In addition, due to the proposed Perris Station, it would also be affected by construction noise from station and parking elements, which include earthwork, utility work and landscaping among others.

As a result, based on construction noise projections shown in ~~the~~ Noise and Vibration Technical Report C, the combined noise level for two of the noisiest pieces of construction equipment would result in a construction noise level of 79 dBA at the property line of the residential home. This would be below the FTA construction noise criteria described in Chapter 12 of the FTA Guidance Manual. It would also be below the 80 dB noise level set by Section 7.34.060 of the

Perris General Plan. Therefore, although the total project construction period is estimated to last approximately 18 months, because the FTA construction noise criteria level for both day and night-time construction would not be surpassed, noise impacts due to construction ~~noise~~ activities are not expected and would be less than significant.

***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***

One public airport exists within close proximity to the project study area. The MARB airfield within the March JPA area is primarily used by the military and commercial cargo flights. The MARB airfields are located less than two miles from noise sensitive receptors along the PVL corridor. However, as shown in Tables 4.10-9, 4.10-10 and 4.10-11, no project-related noise impacts were predicted to occur at this nearby location. Therefore, it is not anticipated that people would be exposed to significant noise impacts.

***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***

One private airport, the Perris Airport, exists within close proximity to the project study area. The Perris Airport is located across the street from the South Perris Station and Layover Facility. However, as shown in Tables 4.10-9, 4.10-10 and 4.10-11 no project related noise impacts were predicted to occur.

*4.10.5 Mitigation Measures*

Noise

As shown in Table 4.10-16, the locations where noise impacts are predicted to occur, and at which mitigation would be needed to reduce noise levels, have been determined through utilization of the FTA Detailed Assessment methodology. Mitigation imposed below will reduce noise levels to a less than significant level:

- **NV-1**: As shown on Figure 4.10-6, noise barriers ~~will~~ shall be ~~provided~~ constructed at the following locations (based on 30% Design Drawings):
    - NB 1: 10' high and 530' long between 264+00 and 269+30
    - NB 2: 13' high and 570' long between Sta. 269+30 and Sta. 275+00
    - NB 3: 9' high and 680' long between Sta. 283+00 and Sta. 289+40
    - NB 4: 12' high and 600' long between Sta. 289+40 and Sta. 295+40
    - NB 5: 8' high and 530' long between Sta. 297+70 and Sta. 303+00
    - NB 6: 8' high and 800' long between Sta. 303+00 and Sta. 311+00
    - NB 7: 10' high and ~~700~~800' long between Sta. 322+00 and Sta. 330+00
    - NB 8: 11' high and 320' long between Sta. 331+00 and Sta. 334+20
    - NB 9: 13' high and 950' long between Sta. 323+40 and Sta. 332+40

- NB 10: 13' high and 250' long between Sta. 332+80 and Sta. 334+80
- NB 11: 9' high and 310' long between Sta. 336+00 and Sta. 339+10
- NB 12: 9' high and 310' long between Sta. 339+10 and Sta. 342+20
- NB 13: 13' high and 380' long between Sta. 342+20 and Sta. 346+00

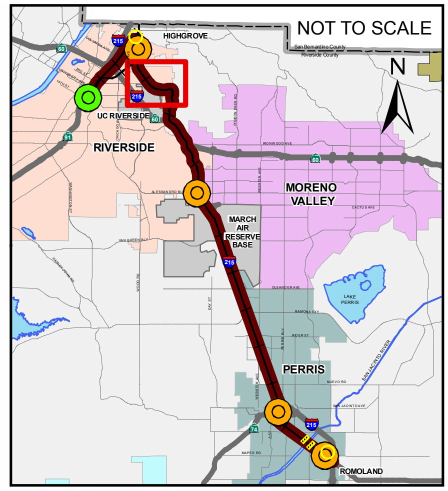
- **NV-2:** Based on the topography and engineering constraints at seven residential locations and St. George's Episcopal Church (eight properties total), the use of noise barriers would not provide adequate noise reduction. Improving the sound insulation of these properties by replacing windows facing the tracks with new sound-rated windows, as well as caulking and sealing gaps in the building envelope, eliminating operable windows and installing specially designed solid-core doors, would reduce noise to below the FTA impact criteria, and to less than significant levels. Sound insulation for eight properties ~~will~~ shall be provided at the following locations:
  - Northeast corner of the grade crossing at West Blaine Street (619 West Blaine Street)
  - Northeast corner of the grade crossing at Mount Vernon Avenue (116 East Campus View Drive)
  - Southwest corner of the grade crossing at Mount Vernon Avenue (first home on Mount Vernon Avenue)
  - Northeast corner of the grade crossing at Citrus Street (1027 Citrus Street)
  - Northeast corner of the grade crossing at Spruce Street (first two homes on Kentwood Drive)
  - Southeast corner of the grade crossing at Spruce Street (first home on Glenhill Drive)
  - St. George's Episcopal Church

**Table 4.10-16**
**Proposed Noise Barrier Locations**

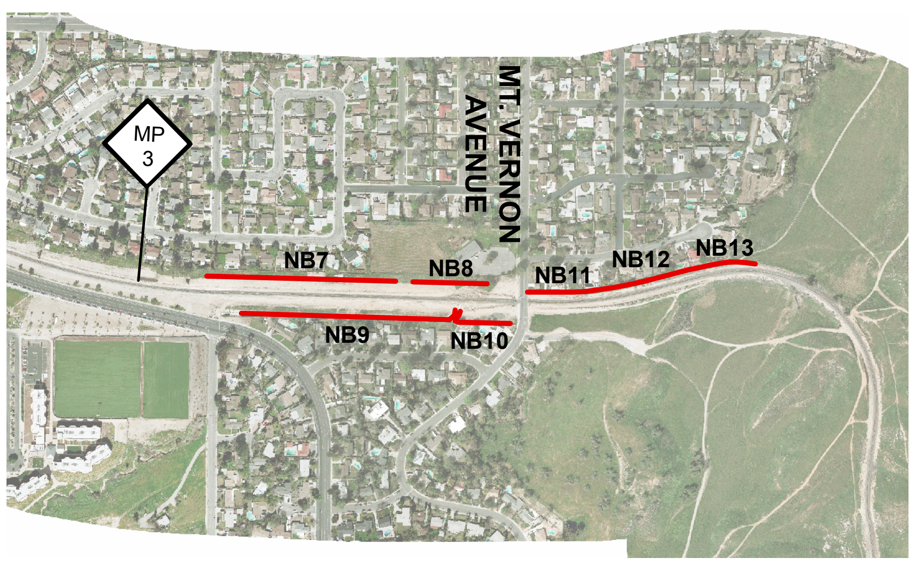
| Location | | Max Thresh. Exceed, dB(1) | Civil Stations* | | Length, ft | Height, ft(2) | Comment |
|---|---|---|---|---|---|---|---|
| | | | Start | End | | | |
| NB 1. | Watkins Drive (south of Spruce Street, east side of alignment) | 4 | 264+00 | 269+30 | 530 | 10 | |
| NB 2. | Watkins Drive (south of Spruce Street, east side of alignment) | 3 | 269+30 | 275+00 | 570 | 13 | |
| NB 3. | Highland Elementary (north of W. Blaine Street, east side of alignment) | <1 | 283+00 | 289+40 | 680 | 9 | Includes 40' of barrier segment perpendicular to track. |
| NB 4. | W. Blaine Street (north of Blaine Street, east side of alignment) | <1 | 289+40 | 295+40 | 600 | 12 | |
| NB 5. | W. Blaine Street (south of Blaine Street, east side of alignment) | 5 | 297+70 | 303+00 | 530 | 8 | |
| NB 6. | W. Blaine Street (south of Blaine Street, east side of alignment) | 3 | 303+00 | 311+00 | 800 | 8 | |
| NB 7. | Mt. Vernon Avenue (west of Mt. Vernon Avenue, north side of alignment) | 3 | 322+00 | 330+00 | ~~700~~800 | 10 | |
| NB 8. | Crest Community Baptist Church @ Mt. Vernon Avenue | 4 | 331+00 | 334+20 | 320 | 11 | |
| NB 9. | Nisbet Way (west of Mt. Vernon Avenue, south of alignment) | 2 | 323+40 | 332+40 | 950 | 13 | Includes 50' of barrier segment perpendicular to track. |
| NB 10. | Nisbet Way (west of Mt. Vernon Avenue, south of alignment) | 2 | 332+80 | 334+80 | 250 | 13 | Includes 50' of barrier segment perpendicular to track. |
| NB 11. | East Campus View (East of Mt. Vernon Avenue, north of alignment) | 9 | 336+00 | 339+10 | 310 | 9 | For residences at elevations above the rail elevation, the noise barrier will be located ~~at top of slope~~along the ROW. |
| NB 12. | East Campus View (East of Mt. Vernon Avenue, north of alignment) | 11 | 339+10 | 342+20 | 310 | 9 | For residences at elevations above the rail elevation, the noise barrier will be located ~~at top of slope~~along the ROW. |
| NB 13. | East Campus View (East of Mt. Vernon Avenue, north of alignment) | 10 | 342+20 | 346+00 | 380 | 13 | For residences at elevations above the rail elevation, the noise barrier will be located ~~at top of slope~~along the ROW. |

Notes: (1) Maximum amount that the predicted levels exceed the applicable noise impact threshold.
(2) Noise barrier heights are relative to top of ROW boundary elevation. Noise barriers for mitigation may be modified to account for specific field conditions and PVL final design features.
* Stationing is based upon the 30% engineering drawings; final stationing will be determined during final design and linked to final design drawing.

Source: STV Incorporated, 2010


**KEY MAP FOR INSET AREAS**




## LEGEND

NB1 — APPROXIMATE NOISE BARRIER LOCATION (FOR GRAPHICAL PURPOSES ONLY)

MILE POST

N

0 1,000 2,000 Feet

KLEINFELDER
Bright People. Right Solutions.

| | | | | |
|---|---|---|---|---|
| PROJECT NO. | 92666 | NOISE BARRIER LOCATIONS | | FIGURE |
| DRAWN: | 6/11/10 | | | |
| DRAWN BY: | JP | | | 4.10-6 |
| CHECKED BY: | RM | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | | |
| FILE NAME:<br>92666noise3.MXD | | | | |

*Vibration*

Train operations from the proposed PVL project will result in vibration impacts in the UCR area of Riverside from civil stations 263+00 to 275+00 (affecting a total of 14 homes extending approximately 1,200 feet along the eastern side of the proposed PVL alignment just south of Spruce Street and north of Hyatt Elementary School). Mitigation measures to reduce vibration to below a significant impact are listed below.~~:~~ ~~(~~It should be noted that either one of the two methods would be effective at mitigating the impacts to below a level of significance.

**NV-3:** *Ballast Mats*: A ballast mat consists of a rubber (such as shredded rubber tires), cork or other type of resilient elastomer pad that is placed under the normal ballast, ties, and rail. The ballast mat ~~generally must~~shall be placed on a concrete or asphalt layer to be most effective. ~~They will not be as effective if placed directly on the soil or the sub-ballast.~~ Ballast mats can provide 5 to 12 dB attenuation at frequencies above 25 to 30Hz.

**NV-4:** *Resiliently Supported Ties (Under-Tie Pads):* This treatment consists of resilient rubber pads placed underneath concrete ties. A resiliently supported tie system consists of concrete ties supported by rubber pads. The rails are fastened directly to the concrete ties using standard rail clips.

*Implementation by RCTC of either one of the above described vibration mitigation measures (NV-3 or NV-4) between Sta. 263+00 and 275+00 will eliminate the 2 VdB impact predicted in the UCR area of Riverside (affecting a total of 14 homes extending approximately 1,200 feet along the eastern side of the proposed PVL alignment just south of Spruce Street and north of Hyatt Elementary School).

*4.10.6 Mitigation Summary*

Noise barrier heights were calculated based on the predicted sound level in the area, local terrain and the amount by which the FTA impact thresholds were exceeded. The barriers were designed so as to reduce the level of noise such that where an affected property would be exposed, there will be no significant noise impact predicted with the inclusion of the barrier. Where noise barriers would not be completely effective at reducing noise levels to less than significant levels, additional building sound insulation was evaluated and recommended at eight individual properties so that interior noise levels at those eight properties would also be reduced to less than significant.

Implementation of either vibration mitigation measure described above would eliminate the 2 VdB impact predicted in the UCR area of Riverside.

## 4.11 TRANSPORTATION AND TRAFFIC

This section of the EIR presents the findings of the *Traffic Technical Report* (STV Incorporated, ~~2009~~2011) to this EIR as presented in Technical Report D and an assessment of the potential impacts related to traffic within the PVL corridor.

### *4.11.1 Environmental Setting*

The proposed PVL corridor is approximately 24 miles long, and traverses through the cities of Riverside to south of Perris in Riverside County.

The project corridor contains a variety of land uses and related street/intersection layouts. In the more developed areas of the corridor, such as the City of Riverside, traffic signals control intersection movements while in the less developed areas of the corridor stop signs control traffic movements. Additionally, it should be noted that many of the current grade crossings do not have crossing arms to block access when a train is passing. Traffic study intersections were identified for each of the four proposed stations that would be in service in 2012 that considered the primary streets serving the general area, the potential access points to the stations, and key intersections likely to be affected by the assignment of project-generated trips.

A total of 29 intersections were selected for analysis for the four proposed stations, and are identified by station area location.

Hunter Park Station: the three proposed station location options along Palmyrita, Columbia and Marlborough Avenues as shown on Figure 4.11-1.

- Iowa Avenue at Center Street
- Iowa Avenue at Palmyrita Avenue
- Northgate Street at Palmyrita Avenue
- Iowa Avenue at Columbia Avenue
- Northgate Street at Columbia Avenue
- Northgate Street at Marlborough Avenue
- Iowa Avenue at Marlborough Avenue
- Rustin Avenue at Marlborough Avenue

Moreno Valley/March Field Station as shown on Figure 4.11-2

- Alessandro Boulevard at Mission Grove Parkway
- Alessandro Avenue at Old 215
- Cactus Avenue at Old 215
- Cactus Avenue at southbound I-215 ramps

Downtown Perris Station as shown on Figure 4.11-3

- Nuevo Road at Perris Boulevard
- San Jacinto Avenue at Redlands Avenue
- San Jacinto Avenue at Perris Boulevard
- San Jacinto Avenue at C Street
- San Jacinto Avenue at D Street
- SR-74 at Navajo Road
- SR-74 at C Street
- SR-74 at D Street
- SR-74 at Perris Boulevard
- 6th Street at C Street
- 6th Street at D Street
- 7th Street at C Street
- 7th Street at D Street
- 7th Street at Perris Boulevard

South Perris Station as shown on Figure 4.11-4

- Bonnie Drive at southbound I-215 ramps
- SR-74 at northbound I-215 off-ramp
- SR-74 at Sherman Road


| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/11/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
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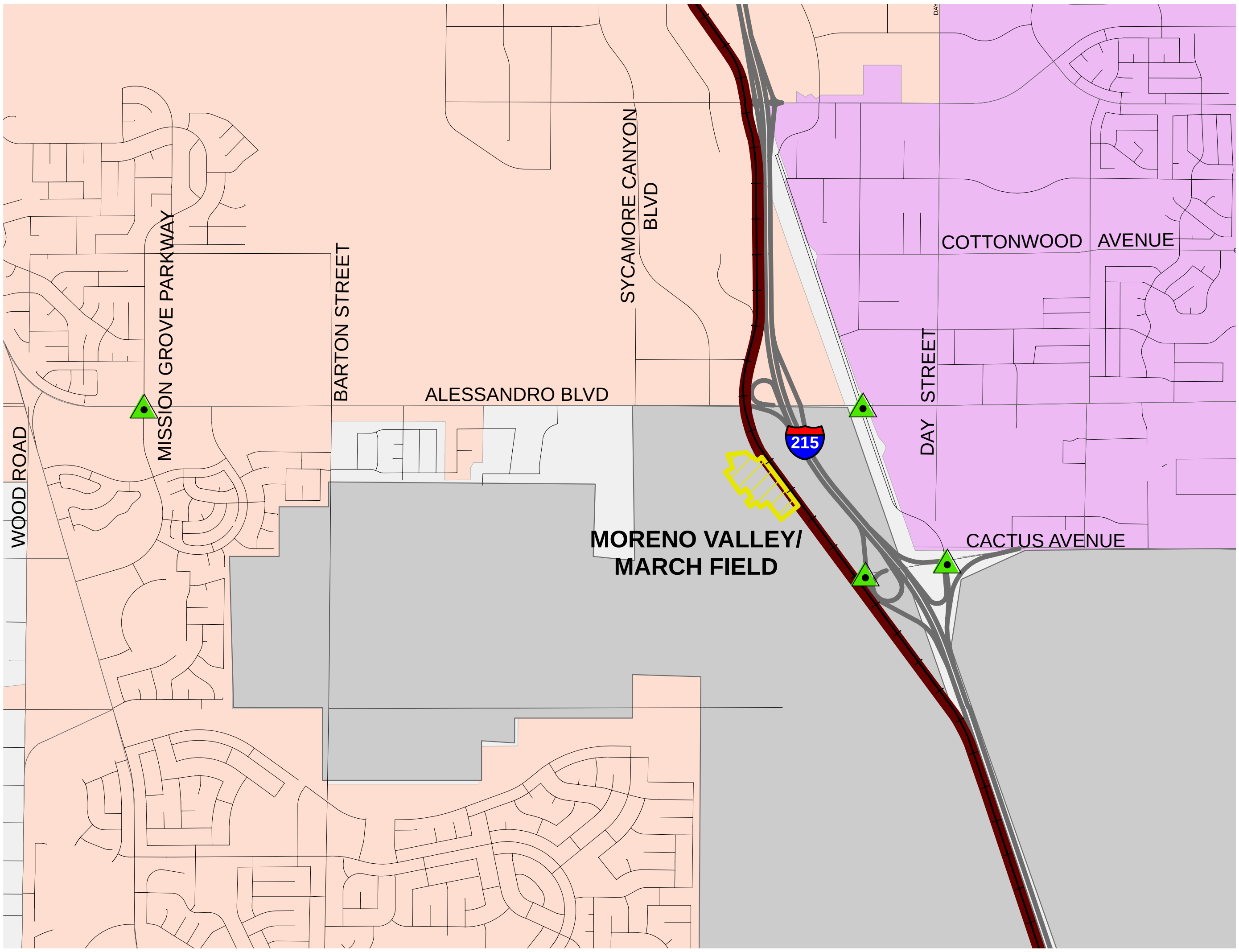
HUNTER PARK STATION OPTIONS
TRAFFIC STUDY LOCATIONS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.11-1




## LEGEND

PVL ALIGNMENT

SITE BOUNDARY

TRAFFIC STUDY LOCATION

N

0 3,000 Feet

| | |
|---|---|
| PROJECT NO. | 92666 |
| DRAWN: | 12/11/09 |
| DRAWN BY: | JP |
| CHECKED BY: | RM |
| FILE NAME: | 92666traf1EIR.MXD |

MORENO VALLEY/
MARCH FIELD STATION
TRAFFIC STUDY LOCATIONS

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.11-2


| | | | |
|---|---|---|---|
| PROJECT NO. 92666 | | DOWNTOWN PERRIS STATION<br>TRAFFIC STUDY LOCATIONS | FIGURE<br>4.11-3 |
| DRAWN: 1/30/10 | | | |
| DRAWN BY: JP | | | |
| CHECKED BY: RM | | ENVIRONMENTAL IMPACT REPORT<br>RIVERSIDE COUNTY TRANSPORTATION COMMISSION<br>PERRIS VALLEY LINE<br>RIVERSIDE, CALIFORNIA | |
| FILE NAME:<br>92666traf2EIR.MXD | | | |


| | | |
|---|---|---|
| PROJECT NO. | 92666 | |
| DRAWN: | 12/11/09 | |
| DRAWN BY: | JP | |
| CHECKED BY: | RM | |
| FILE NAME: | 92666traf3EIR.MXD | |

**SOUTH PERRIS STATION TRAFFIC STUDY LOCATIONS**

ENVIRONMENTAL IMPACT REPORT
RIVERSIDE COUNTY TRANSPORTATION COMMISSION
PERRIS VALLEY LINE
RIVERSIDE, CALIFORNIA

FIGURE

4.11-4

The key travel routes in the vicinity of each station are described below:

Hunter Park Station options

- *Iowa Avenue* is a six-lane, north-south arterial that carries traffic between the Hunter Industrial Park neighborhood to the north and the Canyon Crest neighborhood to the south in Riverside. RTA Route (Rte) 25 runs along Iowa Avenue within the study area.
- *Center Street* is a four-lane undivided arterial oriented in the east-west direction within the study area, and ends just west of its intersection with I-215.
- *Palmyrita Avenue* between Iowa and Prospect Avenues is a two-lane undivided roadway extending in the east-west direction, and it is lined with office buildings and warehouses within the study area.
- *Columbia Avenue* is a four-lane arterial that carries traffic in the east-west direction between Hunter Industrial Park and the northside areas in Riverside.
- *Marlborough Avenue* is an east-west collector road that becomes an arterial between Chicago and Rustin Avenues in Riverside. East of Iowa Avenue, a bike lane is provided on both sides of the street.

Moreno Valley/March Field Station

- *Alessandro Boulevard* is a six-lane, divided arterial roadway extending in the east-west direction within the study area, and is served by the Rte 20 bus.
- *Cactus Avenue* between Meridian Parkway and Old 215 is an undivided east-west arterial within the limits of the city of Moreno Valley providing access to north and southbound I-215. It provides four lanes east of Old 215, and narrows to two lanes at its intersection with southbound I-215 ramps.

Downtown Perris Station

- *Perris Boulevard* is a north-south, primary arterial that extends from downtown Perris to Moreno Valley. The Rte 19, 22, 27, 30, and 74 buses travel along Perris Boulevard in downtown Perris.
- *San Jacinto Avenue* is a two-lane, secondary arterial oriented in the east-west direction.
- SR-74 (now known as 4th Street in downtown Perris) provides regional access to downtown Perris, and is a four-lane facility oriented in the east-west direction in this area. The Rte 19, 22, 27, 30, 74, and 208 buses travel along a section of SR-74 to serve downtown Perris. SR-74 extends into the South Perris Station study area.
- *D Street* is a two-lane, north-south collector road that extends from 11th Street to I-215 in downtown Perris. It is served by the Rte 30 bus. On-street parking is available on the east and west sides of D Street between 1st and 7th Streets.
- *C Street* is a north-south, local road that extends from 11th Street to San Jacinto Avenue in downtown Perris.

South Perris Station

- *Sherman Road* is a two-lane, undivided roadway that extends in the north-south direction. It is mostly lined with empty lots and some residential land uses in the study area.
- *Bonnie Drive* is a short, two-lane roadway segment that connects Case Road with southbound I-215 on- and off-ramps and SR-74.

Traffic Volumes

Intersection counts, including manual turning movement and vehicle classification, were conducted at the study intersections during the weekday AM and PM periods. Additionally, 24 hour automatic traffic recorder machine counts were collected at the following locations concurrent with turning movement counts:

- Iowa Avenue south of Spring Street
- Iowa Avenue south of Marlborough Avenue
- Columbia Avenue east of Iowa Avenue
- Alessandro Boulevard east of Mission Grove Parkway
- Cactus Avenue west of Old 215
- Perris Boulevard south of Bowen Road
- SR-74 east of D Street
- Case Road east of Perris Boulevard
- SR-74 east of Trumble Road

The manual and automatic traffic recorder count data were reviewed to ensure that traffic volumes for a representative day (during clear weather and while schools are in session) are reflected in the traffic analyses. From the data collected, the weekday AM and PM peak traffic hours throughout the entire PVL study area typically occur during the 7:15 to 8:15 AM and 4:30 to 5:30 PM periods, respectively. However, peak PVL ridership periods within the study area are from 5 to 7 AM and 5 to 7 PM based on ridership projections (before and after the existing AM and PM peak travel times for area traffic, respectively, with a little overlap in the PM peak). This is due to the travel times of PVL passengers to/from stations depending on their desired arrival/departure times in Los Angeles, with taking approximately one hour 15 minutes to two hours and 20 minutes of train travel time into account. For analysis purposes, the 6-7 AM and 5-6 PM analysis hours were selected since the combination of project-generated traffic and background volumes would be highest. Following is a brief description of traffic volumes on the roadways serving the station areas during these time periods.

Iowa Avenue carries the highest traffic volumes in the Hunter Park Station option areas, with approximately 330 to 1,490 vehicles per hour (vph) per direction during the 6-7 AM and 5-6 PM analysis hours. The remaining roadways in the vicinity of Hunter Park Station process up to 280 vph per direction during the AM analysis hour and 615 vph per direction during the PM analysis hour.

The analysis-hour volumes are between 450 and 2,200 vph along eastbound Alessandro Boulevard and between 810 and 1,815 vph along westbound Alessandro Boulevard (higher near Mission Grove Parkway) within the study area for the Moreno Valley/March Field Station option. Westbound Cactus Avenue volumes are between 1,360 and 1,875 vph, and eastbound Cactus Avenue volumes are between 485 to 720 vph at Old 215, and decrease to 500-715 vph and 90-280 vph respectively at southbound I-215 ramps as a result of entering/exiting vehicles to/from I-215 in between these two intersections.

The traffic volumes within the Downtown Perris Station area are highest along SR-74, ranging from 430 to 1,200 vph eastbound and from 350 to 1,375 vph westbound. Bi-directional traffic volumes along the remaining roadways in the area are less than 420 vph during the analysis hours, with the exception of Nuevo Road, which carries up to 1,170 vph eastbound; and D Street and Perris Boulevard, both of which carry up to 830 vph southbound during the PM analysis hour. SR-74 also carries the highest traffic volumes in the vicinity of South Perris Station. The volumes in this area are higher compared to Downtown Perris, and vary between 600 and 1,095 vph in the eastbound direction and between 820 and 1,145 vph in the westbound direction.

Existing Conditions

In accordance with the accepted analysis practices of Riverside County and the cities of Riverside and Perris, the *Highway Capacity Manual 2000* procedures were used to determine the capacities and levels of service for each of the intersections comprising the traffic study area. For a signalized intersection, levels of service are determined for the intersection and its individual lane groups and are defined in terms of the average control delays experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the intersection or lane group is saturated. For an unsignalized intersection, levels of service are determined for minor movements only and are defined as the total elapsed time between a vehicle stopping at the end of the queue and departing from the stop line.

The delay levels for signalized and unsignalized intersections for various levels of service are detailed below (see Table 4.11-1).

**Table 4.11-1**
**Level of Service Descriptions**

| LOS | Definition | Signalized Intersection Delay (seconds/vehicle) | Unsignalized Intersection Average Stop Delay (seconds) |
|---|---|---|---|
| A | Describes operations with very low delay. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. | <10 | <10 |
| B | Describes operations with moderately low delay and stable flow. Drivers begin to feel somewhat restricted within platoons of vehicles. | >10 and <20 | >10 and <15 |
| C | Describes operations with average delays. The range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. | >20 and <35 | >15 and <25 |
| D | Describes a crowded operation, with below average delays. Speed and freedom to maneuver are severely restricted. | >35 and <55 | >25 and <35 |
| E | Represents operating conditions at or near the level capacity. All speeds are reduced to a low but relatively uniform value. | >55 and <80 | >35 and <50 |
| F | Forced or breakdown flow. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. | >80 | >50 |

Each of the study intersections was analyzed in terms of its capacity to accommodate existing traffic volumes as defined by the resulting levels of service.

*Hunter Park Station options*

Movements at the study intersections operate at LOS D or better during both the AM and PM analysis hours, with the exception of Iowa Avenue at Center Street, where the northbound Iowa Avenue through movement operates at LOS E during the PM analysis hour.

*Moreno Valley/March Field Station*

The intersection operations are at LOS D or better during both analysis hours with the following exceptions:

- At Alessandro Boulevard and Mission Grove Parkway, westbound Alessandro Boulevard and southbound Mission Grove Parkway left-turn movements operate at LOS E during the PM analysis hour.
- Westbound Cactus Avenue’s through movement at Old 215 operates at LOS E during the PM analysis hour.

*Downtown Perris Station*

Movements at the study intersections operate at LOS D or better during both the AM and PM analysis hours, with the exception of D Street northbound shared through/left-turn movements at SR-74, which operates at LOS E during the PM, and southbound C Street shared through/left-turn movements at SR-74, which operates at LOS F, during both the AM and PM analysis hour.

*South Perris Station*

Movements at the three study intersections operate at LOS C or better during both analysis hours with the following exceptions:

- Bonnie Drive's eastbound right-turn movement at southbound I-215 ramps operates at LOS F during the PM analysis hour.
- Sherman Road's northbound left-turn movement at SR-74 operates at LOS F during both the AM and PM analysis hours, and the southbound left/right-turn movement operates at LOS F during the PM analysis hour.

*4.11.2 Regulatory Setting*

Local Policies and Regulations

Riverside County and each city within the county limits maintains a General Plan Circulation Element that identifies transportation routes, terminals, and facilities and their performance criteria. The cities of Riverside, Moreno Valley, and Perris, and the County of Riverside have adopted the following performance criteria based on their circulation elements.

According to the City of Riverside General Plan:

> *Maintain LOS D or better on arterial streets and LOS C or better on Local and Collector streets in residential areas. LOS E may be acceptable as determined on a case-by-case basis at key locations such as City arterial roadways which are used as a freeway bypass by regional through traffic and at heavily traveled freeway interchanges.*

According to the City of Moreno Valley General Plan:

> *Maintain LOS C where possible. Peak hour levels of service in the LOS D range may be acceptable in certain locations including areas of high employment concentration, north/south roads in the vicinity of SR-60 or other locations in already developed areas of the City with geometric constraints that prevent LOS C from being achieved.*

According to the City of Perris General Plan:

> *Maintain LOS E along all Local roads (for both segments and intersections) and LOS D along I-215 and SR-74 (including intersections with local streets and roads).*

According to the Riverside County General Plan:

> *Maintain LOS C along all County maintained roads and conventional state highways. As an exception, LOS D may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections. LOS E may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.*

*4.11.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Transportation and Traffic is defined by:

1. *Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)*
2. *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways*
3. *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks*
4. *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)*
5. *Result in inadequate emergency access*
6. *Does the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)*

*4.11.4 Project Impacts*

***Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)***

<u>2012 Future Conditions without the Project</u>

The analysis of the 2012 future traffic conditions without the proposed project serves as the baseline against which opening year impacts of the project are compared. The future conditions without the project include the traffic volume increases expected due to an overall growth in traffic through and within the study area, and major approved land developments and roadway system changes scheduled to be occupied or implemented by the 2012 opening year for the PVL.

A generally applied background growth rate of two percent per year, resulting in an overall growth of approximately eight percent by 2012, was assumed for Hunter Park and Moreno

Valley/March Field station option areas per the guidelines of the cities of Riverside and Moreno Valley. For Downtown and South Perris station options, which are within the city of Perris, an annual background growth rate of three percent (approximately 13 percent over four years) was used, per City guidelines.

No major developments are planned in the area surrounding Hunter Park Station by 2012. According to the City of Riverside, the Hunter Business Park development is not fully built out. However, this development is not expected to be a significant generator of traffic due to its designated industrial/warehouse land use and the size of the remaining parcels. ~~However~~In addition, ~~two~~ three major improvement projects involving railroad grade separations at Columbia and Iowa Avenues and 3rd Street are planned to be completed ~~in 2010 and 2011~~prior to 2013~~, respectively~~. The grade separation of Columbia Avenue and the BNSF railroad tracks would raise Columbia Avenue over the BNSF railroad between La Cadena Drive and Iowa Avenue. Similarly, the Iowa Avenue grade-separation project would raise Iowa Avenue over the BNSF tracks between Palmyrita Avenue and Spring Street. These projects are not expected to affect the traffic volumes in the area, and would neither increase nor reduce roadway capacity.

A number of approved development projects were identified by the City of Moreno Valley within the Moreno Valley/March Field Station option area:

1. Centerpointe Industrial and Business Park project is located northeast of Cactus Avenue and Graham Street; it will be a 162-acre business park.
2. Meridian Business Park (formerly known as March Business Center) project is located southwest of I-215 and Alessandro Boulevard on a 1,290-acre site. The project land uses consist primarily of industrial park, warehousing, research and development, and associated business support uses. It is planned to be constructed in three phases, two of which would be completed by 2012.
3. Gateway Center is an industrial/business park project on a 25-acre site on Day Street south of Alessandro Boulevard.
4. Cactus/Commerce Commercial Center is a 16,000-square-foot commercial/retail development on Cactus Avenue between Day and Elsworth Streets.

   The trip generation and assignment for these projects were taken from the *Cactus Avenue and Commerce Center Drive Commercial Center Traffic Impact Study* (Urban Crossroads, 2008).

5. March Lifecare ~~Village~~ Campus is a development project including a mix of healthcare and ancillary uses, including hospitals, general and specialty medical offices, medical retail, research and education, a wellness center, senior center, independent/assisted-living facilities, skilled nursing facilities, and related support facilities. The project will be developed in five planning areas, of which the first two are expected to be developed by 2011, and include a 50-bed hospital, 660 units of institutional residential, 190,000 square feet of medical office, 200,000 square feet of research and education, and 210,000 square feet of retail land uses. The remaining planning areas will be developed over the next 20 to 25 years. Therefore, the trip generation and vehicle assignments associated with only the first two planning areas for this project were incorporated into the 2012 future traffic volumes without the project. Vehicle trip generation and assignments for this development project were obtained from the *March Lifecare Campus Specific Plan Draft*

*Program Environmental Impact Report* (Applied Planning Inc., 2009).~~approximately 30 acres of medical office/research, educational/institutional and residential land uses, and a 60-bed hospital.~~

~~The trip generation and assignment for these projects were taken from the *Cactus Avenue and Commerce Center Drive Commercial Center Traffic Technical Report* (Urban Crossroads, 2008).~~ As previously noted, the AM analysis hour for the PVL is earlier than the AM peak hour analyzed for these development projects. It was determined that the trip distribution for the 6-7 AM time period (PVL AM analysis hour) corresponds to 35 percent of the typical AM peak hour traffic volumes based on the *Southern California Association of Governments Year 2000 Post-Census Regional Travel Survey.* Therefore, AM peak hour trip generation for the above projects was reduced by 65 percent.

In addition to the development projects, a major roadway improvement project to widen Cactus Avenue and to reconfigure its intersection with southbound I-215 ramps (March Joint Powers Authority Cactus Avenue Extension/Railroad Bridge Widening project) is planned to be completed by 2012 within the proposed Moreno Valley/March Field study area. Upon the completion of this project, Cactus Avenue would provide two east and westbound through lanes, one westbound left-turn lane, and one eastbound right-turn lane. In addition, southbound through and left-turn movements from the I-215 off-ramp onto Cactus Avenue would no longer be allowed.

Two approved projects are to be completed in the proposed Downtown Perris Station study area by 2012:

1. The Venue at Perris development project is located on the northeast corner of I-215 and Redlands Avenue. It will include a movie theater, home improvement superstore, discount superstore, and other retail space. The trip generation for this project was developed based on rates for Land Use 862 ("Home Improvement Superstore"), 813 ("Free-Standing Discount Superstore"), 820 ("Shopping Center"), and 444 ("Movie Theater with Matinee") from the *Institute of Transportation Engineers Trip Generation, 7th Edition*. (Institute of Transportation Engineers, 2007). Traffic was assigned based on existing travel patterns.
2. Perris Marketplace project is a 520,000-square-foot retail center located on the west side of Perris Boulevard, north of Nuevo Road. It includes a discount superstore with a gas station, a home improvement store, restaurants, and specialty retail space. Vehicle trip generation and assignments for this project were obtained from the project's traffic study prepared for the City of Perris in 2006. This study recommends reconfiguration of the Nuevo Road/Perris Boulevard intersection to mitigate the impacts of the project as follows:

- Provide two left-turn, two through, one through/right-turn, and one right-turn lane for eastbound Nuevo Road.
- Provide one left-turn, three through, and one right-turn lane for northbound Perris Boulevard.
- Provide two left-turn, three through, and two right-turn lanes for southbound Perris Boulevard.
- Westbound Nuevo Road approach remains the same as existing conditions.

It ~~was~~ is assumed that these mitigation measures ~~would be~~were in place by ~~2012~~2009.

Roadway system changes by 2012 within the Downtown Perris Station area include the signalization of the C Street/SR-74 intersection, which is currently stop-controlled and the widening and restriping of the D and C Street~~/~~ intersections at San Jacinto Avenue ~~intersections, which are currently stop-controlled~~.

Two approved projects were identified in the proposed South Perris Station study area:

1. Towne Center project is a 470,000-square-foot retail center located in the southeastern portion of the City of Perris, on the southeast corner of I-215 and Ethanac Road. It would be anchored by a 220,000-square-foot big-box store, and would also include specialty retail space, restaurants, and a hotel. The development is expected to be opened in 2009. The trip generation and assignment for this project were obtained from the *Towne Center Traffic ~~Technical Report~~ Impact Study* (Albert A. Webb Associates, 2007).
2. Perris Crossing (formerly known as Ethanac Road Retail Center) development is a 625,000-square-foot retail center located on the north side of Ethanac Road, west of Case Road. The retail center would include approximately 600,000 square feet of retail and restaurant uses, a service station, and 24,000 square feet of office uses. The *Ethanac Road Retail Center Traffic Study* (LSA Associates, Inc., 2005) was used in determining the trip generation and assignment for this development. The development was not completed at the time of the traffic counts in the South Perris Station study area in 2008.

Although this project is within the proposed South Perris Station area, no project-generated trips were added to the study intersections as project traffic to/from I-215 and SR-74 would be able to access these roadways via Ethanac Road without traversing through the study intersections. However, ten percent of in and outbound trips traveling to/from the north, via Case Road, were assigned to intersections in the Downtown Perris area.

The trip generation for the four projects within the proposed Downtown and South Perris Station areas was included only in the PM analysis hour traffic volumes, as they all consist of retail/commercial land uses, which would not generate traffic as early as the PVL AM analysis hour.

2012 Future traffic levels of service without the project were determined based on the projected increase in traffic volumes and changes in roadway geometrics (see ~~the~~ Traffic Technical Report D). A summary of the findings is discussed below.

Hunter Park Station options

Movements at the study intersections would continue to operate at acceptable levels of service, with the exception of Iowa Avenue's northbound through movement at Center Street, which would worsen from LOS E (existing) to F (future without the PVL project) during the PM analysis hour, resulting in the overall intersection LOS to deteriorate from LOS D to E.

Moreno Valley/March Field Station

Movements at the intersection of Alessandro Boulevard and Old 215 would continue to operate at acceptable levels. Several movements at the remaining three intersections, however, would worsen including:

- At Alessandro Boulevard and Mission Grove Parkway, westbound Alessandro and southbound Mission Grove Parkway's left-turn movements would incur additional delay within LOS E during the PM analysis hour.
- At the intersection of Cactus Avenue and southbound I-215 ramps, westbound Cactus Avenue's left-turn movement and the overall intersection would deteriorate from LOS C (existing) to F (future without the PVL project) during the PM analysis hour.
- Westbound Cactus Avenue's through movement would worsen from LOS E to F at Old 215, and the overall intersection LOS would deteriorate from LOS D to F during the PM analysis hour.

Downtown Perris Station

The levels of service for movements would remain within acceptable limits during the AM analysis hour. However, several movements would deteriorate to poor levels of service during the PM analysis hour, including:

- At Nuevo Road and Perris Boulevard, eastbound Nuevo Road's left-turn movement would deteriorate from LOS C (existing) to F (future without the PVL project); southbound Perris Boulevard's left-turn movement would deteriorate from LOS C to E. The overall intersection LOS would deteriorate from LOS C to E.
- At SR-74 and D Street, eastbound SR-74's through/right-turn movements would deteriorate from LOS C to E. Northbound D Street's through/left-turn movements would worsen from LOS E to F, and southbound left-turn movement would deteriorate from LOS D to F. The overall intersection operations would also deteriorate from LOS C to F.
- At the intersection of SR-74 and Perris Boulevard, Perris Boulevard's ~~east~~southbound left-turn movement would deteriorate from LOS C to F.
- ~~Westbound San Jacinto Avenue approach at C Street would worsen from LOS C to E.~~
- At San Jacinto Avenue and D Street, San Jacinto Avenue's eastbound left-turn and D Street's southbound through movements would deteriorate from LOS D to F, and the overall intersection level of service would deteriorate from LOS C to E.
- At San Jacinto and Redlands Avenues, San Jacinto Avenue's westbound through/left-turn movements would deteriorate from LOS B to F. Northbound Redlands Avenue's through/left-turn and right-turn movements would deteriorate from LOS D and B to LOS F, respectively. Southbound Redlands Avenue's left-turn movement would deteriorate from LOS B to F.

South Perris Station

Most movements would continue to operate within acceptable levels of service. However, the movements that currently operate at LOS F would worsen by incurring significance increases in delay (i.e., delay increases of more than two seconds), and southbound Sherman Road at SR-74 would deteriorate from LOS C to E during the PM analysis hour.

2012 Future Conditions with the Project

*Project Trip Generation and Modal Split*

The PVL is expected to carry 3,705 passengers during each of the AM and PM peak periods in 2012 based on ridership projections. There would be four trains scheduled in the peak direction of travel (to Los Angeles in the morning, to Perris in the afternoon) during these periods, of which one would depart from South and Downtown Perris stations and two would depart from Moreno Valley/March Field and Hunter Park stations during the AM analysis hour (6 AM – 7 AM), and one would arrive at all stations during the PM analysis hour (5 PM – 6 PM). It was determined that approximately 50 percent of the AM peak period inbound (northbound) riders would travel on the two analysis-hour trains (leaving South Perris at 5:48 and 6:18 AM) based on existing ridership data on SCRRA/Metrolink Inland Empire-Orange County, San Bernardino, and Riverside lines. About 35 percent of the outbound (southbound) riders during the PM peak period would travel on the analysis-hour train. No outbound trains would arrive in the study area during the AM analysis hour, and no inbound trains would depart the area during the PM analysis hour.

Table 4.11-2 lists the number of boarding and alighting passengers per station during the AM and PM analysis hours.

**Table 4.11-2**
**AM and PM Analysis-Hour Ridership**

| Proposed Station | AM | | PM | |
|---|---|---|---|---|
| | **Boardings** | **Alightings** | **Boardings** | **Alightings** |
| Hunter Park | 241 | 110 | 83 | 182 |
| Moreno Valley/March Field | 205 | 93 | 70 | 154 |
| Downtown Perris | 134 | 29 | 45 | 207 |
| South Perris | 221 | 0 | 0 | 340 |
| **Total** | **801** | **232** | **198** | **884** |
| Source: Parsons Brinckerhoff (2009) | | | | |

Passengers would arrive at and depart from the stations by a number of travel modes, including private autos, transit buses, and walking. Auto trips would consist of drop-offs/pick-ups and park-and-ride drivers. The modal split of passengers (proportions of different transport modes used by passengers) was derived from the PVL ridership model, which included separate modal splits for passengers traveling to and from the area. However, the same modal split was applied to passengers traveling from the area during the AM and returning to the area during the PM peak period. Similarly, passengers arriving in the area during the AM and leaving during the PM exhibited the same modal splits. For example, for Hunter Park Station options, it was assumed that 61 percent of boarding passengers and one percent of alighting passengers would travel to/from the station by auto during the AM peak period, between 5 and 7 AM (see Table 4.11-3). During the PM peak period, between 5 and 7 PM, 61 percent of alighting passengers and one percent of boarding passengers would travel by auto.

**Table 4.11-3**
**Modal Split of Passengers for the AM Peak Period**

(PM peak period modal splits are reversed)

| Proposed Station | Percentage of Passengers | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Walk | | Bus | | Park-and-Ride | | Drop-off/Pick-up | |
| | Boarding | Alighting | Boarding | Alighting | Boarding | Alighting | Boarding | Alighting |
| Hunter Park | 4 | 57 | 9 | 42 | 61 | 1 | 26 | 0 |
| Moreno Valley/ March Field | 0 | 0 | 19 | 99 | 63 | 1 | 18 | 0 |
| Downtown Perris | 20 | 40 | 10 | 52 | 56 | 8 | 14 | 0 |
| South Perris | 3 | 0 | 4 | 56 | 79 | 44 | 14 | 0 |

Using these modal splits, 300 drop-offs/pick-ups and 529 park-and-ride trips would be generated by the project within the overall study area during the AM analysis hour, and 302 drop-offs/pick-ups and 530 park-and-ride trips would be generated during the PM analysis hour. Drop-offs/pick-ups were assumed to make a complete in-and-out cycle within the analysis hours, i.e., arrive full and depart empty within the AM analysis hour, and arrive empty and depart full in the PM analysis hour. Table 4.11-4 lists the auto trips by station during the AM and PM analysis hours.

**Table 4.11-4**
**Auto-Trip Generation (Number of Vehicles)**

| Proposed Station | AM | | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Park-and-Ride | | Drop-off/ Pick-up | | Bus | Park-and-Ride | | Drop-off/ Pick-up | | Bus |
| | In | Out | In | Out | | In | Out | In | Out | |
| Hunter Park | 146 | 2 | 63 | 63 | 2 | 1 | 111 | 47 | 47 | 2 |
| Moreno Valley/ March Field | 129 | 1 | 37 | 37 | 4 | 1 | 30 | 28 | 28 | 4 |
| Downtown Perris | 75 | 2 | 19 | 19 | 5 | 4 | 115 | 29 | 29 | 5 |
| South Perris | 174 | 0 | 31 | 31 | 3 | 0 | 268 | 47 | 47 | 3 |
| **Total** | **524** | **5** | **150** | **150** | **14** | **6** | **524** | **151** | **151** | **14** |

*Project Vehicle Assignment*

The distribution of auto trips to the stations was developed from the station access maps based on the ridership model as follows:

Hunter Park Station options

As discussed in Chapter 2.0, the Hunter Park Station would be located at one of three proximate sites. The Palmyrita Station option is proposed to be located on the east side of the SJBL main track east of Iowa Avenue between Palmyrita and Columbia Avenues. The proposed station access road for this option would connect Palmyrita and Columbia Avenues, and allow entry/exit to the station from both avenues. The Columbia Station option would be along the west side of the main track with only one entry/exit point from Columbia Avenue. The Marlborough Station option would also be located on the west side of the main track, with a single entry/exit point from Marlborough Avenue.

The project vehicle assignment for the three alternative locations for the Hunter Park Station would be the same in terms of approach routing to the station option: Approximately 55 percent of drop-offs/pick-ups and 60 percent of park-and-ride passengers would come from areas north of the station. The majority of these passengers would approach the station from southbound Iowa Avenue (35 percent), with the remaining traveling southbound on Northgate Street or eastbound on Columbia Avenue. About 20 percent of drop-offs/pick-ups and park-and-ride passengers would come from the south via northbound Iowa Avenue. The remaining passengers would approach from the east along Palmyrita Avenue.

Vehicle assignments at the study intersections, particularly individual movements, would differ slightly among the three alternative station locations due to the varying location of the proposed station access road for the Palmyrita Station option, and are presented in ~~the~~ Traffic Technical Report ~~to this EIR~~D.

Moreno Valley/March Field Station

Almost all of the passengers would come from east of the station. Of the drop-offs/pick-ups, 30 percent would approach the station from westbound Alessandro Boulevard, 35 percent would approach from westbound Cactus Avenue, 15 percent would approach from southbound I-215, and 20 percent would approach from northbound I-215. Park-and-ride passengers would travel westbound on Alessandro Boulevard (35 percent) and Cactus Avenue (25 percent), southbound on I-215 (20 percent) and Old 215 (five percent), or northbound on I-215 (15 percent).

Downtown Perris Station

Approximately 40 percent of drop-offs/pick-ups and 30 percent of park-and-ride passengers would approach the station from the north via southbound Perris Boulevard, 35 percent of park and-ride passengers and 25 percent of drop-offs/pick-ups would approach from the west via eastbound SR-74, and ten percent of each would approach from the east via westbound SR-74 and from the south via D Street. The remaining would approach from the northwest via A Street.

South Perris Station

The majority of the passengers would come from areas south of the station via I-215 (50 percent of park-and-ride passengers and 30 percent of drop-offs/pick-ups) or by following Murrieta and Goetz Roads to Case Road (15 percent of park-and-ride passengers and 25 percent of drop-offs/pick-ups). The remaining would come from the east via SR-74.

The assignment of vehicle trips generated by the PVL project during the AM and PM analysis hours is presented in ~~the~~ Traffic Technical Report ~~to this EIR~~D. Overall, the increases in traffic would be less than significant in relation to the existing load and capacity of the roadways at most locations (less than five percent increase); however, traffic increases would result in significant impacts in terms of added congestion at a few intersections as explained in the LOS discussion below.

*Grade Crossing Closures*

In addition to new trips that would be generated by the project, an increase in traffic volumes along a few roadways would also be experienced due to the ~~permanent~~ closure of two existing grade crossings ~~by the project~~ (Poarch Road in Riverside and 6th Street in Perris). Poarch Road is an unimproved dirt road that provides alternate access to a small number of residences and terminates approximately half a mile north of the grade crossing. It connects with Morton Road via Gernert Road to the south, and provides access to an apartment complex and connection to Box Springs Road. The grade crossing is directly across from the northbound I-215 on-ramp, and thus, is mostly used by drivers wanting to bypass the traffic on Box Springs Road to access northbound I-215. As part of the PVL project, the existing grade crossing at Poarch Road is planned to be closed to the public with access by emergency vehicles only (with a locked gate). The closure of the Poarch Road crossing to the public would~~is~~ not ~~expected to~~ significantly affect the traffic volumes in the area, but may increase traffic volumes on Gernert Road since this will be used as the primary means of access to the adjacent residential neighborhood. While this proposed change could present an inconvenience to some nearby residents, the impact would not be significant. In Perris, as part of the PVL project, the existing grade crossing at 6th Street is planned to be closed to vehicles but would still be accessible by pedestrians to cross. The closure of 6th Street to vehicular traffic would result in the diversion of east and westbound traffic (up to 35 vph per direction during the AM and PM analysis hours) to 7th Street, the closest grade crossing to remain open. The changes in traffic volumes due to this diversion would be less than significant, and are reflected in the 2012 analyses with the project.

It should be noted that in downtown Perris, as part of the Perris Multimodal Transit Facility project (not a part of the PVL project), grade crossings at 2nd and 5th Streets were closed in 2008. The impacts of these closures on travel patterns are already incorporated into the existing traffic network and analyses as the closures were in effect at the time the traffic data collection program was conducted. In addition, ~~the grade crossing at~~ 5th Street has been temporarily closed by the City of Perris and will be formally vacated ~~by~~ for this project.

In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. This closure is necessary due to potential safety issues at the tracks as the turning movements involve an acute angle and can present the motorist with limited sight distance. In terms of traffic volumes, a count of vehicle movements taken in mid-November 2010 indicated that less than five vehicles travel through this intersection in any one hour during the day, and most hours show no vehicles at all using it. Although this closure would affect few vehicles, 9th Street, which is currently a dirt road, would be paved to accommodate local property access. As there would be little inconvenience to the current low volumes along Commercial Street, and motorists can access Commercial Street via Perris Boulevard less than one-quarter mile south of D Street, the closure of Commercial Street would not be a significant impact.

***Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways***

As described under the regulatory setting, the cities of Riverside, Moreno Valley, and Perris, and the County of Riverside have adopted minimum LOS thresholds in their general plans to determine future infrastructure needs. While the agencies strive to maintain these thresholds, they recognize that certain roadways do not currently meet the desired performance criteria and that those roadways would continue to operate below the agencies' LOS standards if no improvements were made to the roadway system. Therefore, the roadways within the PVL study areas that currently exceed the LOS standards would continue to do so under the future conditions, and operating below these standards would not in itself be considered an impact. However, deterioration in LOS caused by the project would be considered a significant impact.

Based on the LOS thresholds established by the cities and county, deterioration from LOS A, B, C, or D conditions without the project to LOS E or F conditions with the project is considered a significant impact. For LOS E or F conditions without the project, an increase of two or more seconds of delay as a result of the project is also considered a significant impact.

The LOS analyses for the 2012 Future Conditions with the Project indicated that the majority of the study intersections would continue to operate at the same levels of service as the 2012 conditions without the PVL; however, significant traffic impacts would be expected at a number of intersections as a result of the increase in traffic volumes (due to new vehicular trips generated by the project) as shown in Table 4.11-5 through Table 4.11-8.

<u>Hunter Park Station options</u>

No impacts would be expected at the study intersections in the vicinity of Hunter Park Station for any of the three alternative station locations, as shown in Table 4.11-5.

**Table 4.11-5**
**Hunter Park Station Options 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Palmyrita Option** | | | | | | | | |
| **Center Street at Iowa Avenue – Signalized** | | | | | | | | |
| Center Street | EB | LTR | 0.63 | 40.7 | D | 0.95 | 51.1 | D |
| | WB | L | 0.25 | 31.2 | C | 0.43 | 32.3 | C |
| | | T | 0.52 | 34.5 | C | 0.83 | 52.8 | D |
| | | R | 0.07 | 29.6 | C | 0.20 | 30.4 | C |
| Iowa Avenue | NB | L | 0.31 | 43.9 | D | 0.38 | 32.0 | C |
| | | T | 0.56 | 36.6 | D | 1.21 | 134.7 | F |
| | | R | 0.10 | 31.7 | C | 0.15 | 23.1 | C |
| | SB | L | 0.12 | 42.1 | D | 0.39 | 38.7 | D |
| | | T | 0.55 | 36.2 | D | 0.60 | 28.7 | C |
| | | R | 0.05 | 31.3 | C | 0.05 | 23.8 | C |
| **Overall Intersection** | | **-** | | **36.7** | **D** | | **76.3** | **E** |

**Table 4.11-5 (cont'd)**
**Hunter Park Station Options 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Palmyrita Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Palmyrita Avenue | EB | LT | 0.13 | 11.6 | B | 0.09 | 13.6 | B |
| | | R | 0.02 | 10.9 | B | 0.06 | 13.4 | B |
| | WB | L | 0.46 | 14.2 | B | 0.90 | 39.4 | D |
| | | TR | 0.07 | 11.2 | B | 0.44 | 15.8 | B |
| Iowa Avenue | NB | L | 0.16 | 32.0 | C | 0.09 | 24.7 | C |
| | | T | 0.33 | 19.9 | B | 0.80 | 21.0 | C |
| | | R | 0.11 | 18.6 | B | 0.26 | 13.9 | B |
| | SB | L | 0.84 | 52.8 | D | 0.46 | 27.8 | C |
| | | T | 0.46 | 19.5 | B | 0.62 | 16.8 | B |
| | | R | 0.01 | 16.5 | B | 0.01 | 12.5 | B |
| **Overall Intersection** | | **-** | | **21.8** | **C** | | **21.6** | **C** |
| **Columbia Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Columbia Avenue | EB | L | 0.22 | 42.0 | D | 0.43 | 32.2 | C |
| | | T | 0.46 | 33.6 | C | 0.22 | 28.7 | C |
| | | R | 0.16 | 30.4 | C | 0.43 | 30.6 | C |
| | WB | L | 0.26 | 42.4 | D | 0.75 | 43.3 | D |
| | | T | 0.10 | 29.8 | C | 0.45 | 30.4 | C |
| | | R | 0.04 | 29.3 | C | 0.14 | 28.2 | C |
| Iowa Avenue | NB | L | 0.44 | 42.4 | D | 0.71 | 41.5 | D |
| | | T | 0.47 | 29.9 | C | 0.89 | 36.4 | D |
| | | R | 0.22 | 27.5 | C | 0.08 | 20.4 | C |
| | SB | L | 0.28 | 40.9 | D | 0.07 | 35.3 | D |
| | | T | 0.59 | 31.8 | C | 0.89 | 37.8 | D |
| | | R | 0.08 | 26.1 | C | 0.11 | 22.0 | C |
| **Overall Intersection** | | **-** | | **32.4** | **C** | | **36.0** | **D** |
| **Marlborough Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Marlborough Avenue | EB | L | 0.32 | 27.5 | C | 0.45 | 28.6 | C |
| | | TR | 0.43 | 30.4 | C | 0.30 | 30.8 | C |
| | WB | L | 0.19 | 26.5 | C | 0.60 | 31.7 | C |
| | | T | 0.05 | 27.5 | C | 0.29 | 30.7 | C |
| | | R | 0.19 | 28.3 | C | 0.44 | 32.1 | C |
| Iowa Avenue | NB | L | 0.16 | 26.3 | C | 0.15 | 32.6 | C |
| | | T | 0.54 | 17.1 | B | 0.68 | 18.8 | B |
| | | R | 0.06 | 13.7 | B | 0.02 | 12.8 | B |
| | SB | L | 0.26 | 22.0 | C | 0.18 | 32.8 | C |
| | | T | 0.44 | 14.9 | B | 0.90 | 28.0 | C |
| | | R | 0.04 | 12.4 | B | 0.03 | 12.8 | B |
| **Overall Intersection** | | **-** | | **18.0** | **B** | | **25.2** | **C** |
| **Palmyrita Avenue at Station Access Road – Signalized** | | | | | | | | |
| Palmyrita Avenue | EB | TR | 0.27 | 5.9 | A | 0.37 | 6.5 | A |
| | WB | LT | 0.34 | 6.3 | A | 0.36 | 6.4 | A |
| Station Access Road | NB | L | 0.12 | 19.9 | B | 0.28 | 20.9 | C |
| | | R | 0.04 | 19.5 | B | 0.14 | 20.0 | C |
| **Overall Intersection** | | **-** | | **7.5** | **A** | | **8.8** | **A** |
| **Columbia Avenue at Station Access Road – Signalized** | | | | | | | | |
| Columbia Avenue | EB | L | 0.20 | 5.6 | A | 0.06 | 5.0 | A |
| | | T | 0.17 | 5.5 | A | 0.08 | 5.1 | A |
| | WB | TR | 0.10 | 5.1 | A | 0.13 | 5.3 | A |
| Station Access Road | SB | L | 0.02 | 19.3 | B | 0.04 | 19.4 | B |
| | | R | 0.10 | 19.8 | B | 0.26 | 20.8 | C |
| **Overall Intersection** | | **-** | | **7.0** | **A** | | **10.0** | **A** |
| **Palmyrita Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Palmyrita Avenue | EB | L | 0.06 | 7.7 | A | 0.24 | 9.4 | A |
| Northgate Street | SB | L | 0.16 | 12.4 | B | 0.33 | 32.8 | D |
| | | R | 0.24 | 9.7 | A | 0.17 | 10.4 | B |

**Table 4.11-5 (cont'd)**
**Hunter Park Station Options 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Columbia Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Columbia Avenue | EB | T | 0.12 | 8.8 | A | 0.06 | 8.9 | A |
| | | TR | 0.15 | 8.8 | A | 0.08 | 8.8 | A |
| | WB | L | 0.14 | 9.6 | A | 0.56 | 14.9 | B |
| | | T | 0.10 | 8.7 | A | 0.20 | 8.9 | A |
| Northgate Street | NB | L | 0.04 | 8.2 | A | 0.02 | 8.6 | A |
| | | R | 0.26 | 8.7 | A | 0.15 | 8.5 | A |
| **Overall Intersection** | | - | | **8.8** | A | | **11.8** | B |
| **Marlborough Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Marlborough Avenue | EB | LT | 0.20 | 7.8 | A | 0.08 | 7.5 | A |
| Northgate Street | SB | LR | 0.12 | 9.8 | A | 0.34 | 10.4 | B |
| **Marlborough Avenue at Rustin Avenue – Unsignalized** | | | | | | | | |
| Marlborough Avenue | WB | L | 0.03 | 7.8 | A | 0.18 | 8.1 | A |
| Rustin Avenue | NB | LR | 0.36 | 12.3 | B | 0.31 | 16.0 | C |
| **Columbia Option** | | | | | | | | |
| **Center Street at Iowa Avenue – Signalized** | | | | | | | | |
| Center Street | EB | LTR | 0.63 | 40.7 | D | 0.95 | 51.1 | D |
| | WB | L | 0.25 | 31.2 | C | 0.43 | 32.3 | C |
| | | T | 0.52 | 34.5 | C | 0.83 | 52.8 | D |
| | | R | 0.07 | 29.6 | C | 0.20 | 30.4 | C |
| Iowa Avenue | NB | L | 0.31 | 43.9 | D | 0.38 | 32.0 | C |
| | | T | 0.56 | 36.6 | D | 1.21 | 134.7 | F |
| | | R | 0.10 | 31.7 | C | 0.15 | 23.1 | C |
| | SB | L | 0.12 | 42.1 | D | 0.39 | 38.7 | D |
| | | T | 0.55 | 36.2 | D | 0.60 | 28.7 | C |
| | | R | 0.05 | 31.3 | C | 0.05 | 23.8 | C |
| **Overall Intersection** | | - | | **36.7** | **D** | | **76.3** | **E** |
| **Palmyrita Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Palmyrita Avenue | EB | LT | 0.13 | 11.6 | B | 0.09 | 13.6 | B |
| | | R | 0.02 | 10.9 | B | 0.06 | 13.4 | B |
| | WB | L | 0.46 | 14.1 | B | 0.89 | 38.6 | D |
| | | TR | 0.03 | 11.0 | B | 0.30 | 14.8 | B |
| Iowa Avenue | NB | L | 0.16 | 32.0 | C | 0.09 | 24.7 | C |
| | | T | 0.36 | 20.1 | C | 0.86 | 23.5 | C |
| | | R | 0.11 | 18.6 | B | 0.26 | 13.9 | B |
| | SB | L | 0.43 | 28.4 | C | 0.32 | 26.3 | C |
| | | T | 0.54 | 20.3 | C | 0.64 | 17.1 | B |
| | | R | 0.01 | 16.5 | B | 0.01 | 12.5 | B |
| **Overall Intersection** | | - | | **18.9** | **B** | | **22.6** | **C** |
| **Columbia Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Columbia Avenue | EB | L | 0.22 | 42.0 | D | 0.43 | 32.2 | C |
| | | T | 0.46 | 33.6 | C | 0.22 | 28.7 | C |
| | | R | 0.16 | 30.4 | C | 0.43 | 30.6 | C |
| | WB | L | 0.27 | 42.5 | D | 0.75 | 43.5 | D |
| | | T | 0.10 | 29.8 | C | 0.45 | 30.4 | C |
| | | R | 0.12 | 30.0 | C | 0.39 | 30.4 | C |
| Iowa Avenue | NB | L | 0.44 | 42.4 | D | 0.71 | 41.5 | D |
| | | T | 0.47 | 29.9 | C | 0.89 | 36.4 | D |
| | | R | 0.22 | 27.5 | C | 0.08 | 20.4 | C |
| | SB | L | 0.66 | 49.2 | D | 0.18 | 36.0 | D |
| | | T | 0.58 | 31.7 | C | 0.89 | 37.8 | D |
| | | R | 0.08 | 26.1 | C | 0.11 | 22.0 | C |
| **Overall Intersection** | | - | | **33.4** | **C** | | **35.9** | **D** |

**Table 4.11-5 (cont'd)**
**Hunter Park Station Options 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Marlborough Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Marlborough Avenue | EB | L | 0.32 | 27.5 | C | 0.45 | 28.6 | C |
| | | TR | 0.43 | 30.4 | C | 0.30 | 30.8 | C |
| | WB | L | 0.19 | 26.5 | C | 0.60 | 31.7 | C |
| | | T | 0.05 | 27.5 | C | 0.29 | 30.7 | C |
| | | R | 0.19 | 28.3 | C | 0.44 | 32.1 | C |
| Iowa Avenue | NB | L | 0.16 | 26.3 | C | 0.15 | 32.6 | C |
| | | T | 0.54 | 17.1 | B | 0.68 | 18.8 | B |
| | | R | 0.06 | 13.7 | B | 0.02 | 12.8 | B |
| | SB | L | 0.26 | 22.0 | C | 0.18 | 32.8 | C |
| | | T | 0.44 | 14.9 | B | 0.90 | 27.9 | C |
| | | R | 0.04 | 12.4 | B | 0.03 | 12.8 | B |
| **Overall Intersection** | | **-** | | **18.0** | **B** | | **25.2** | **C** |
| **Columbia Avenue at Station Access Road – Signalized** | | | | | | | | |
| Columbia Avenue | EB | L | 0.38 | 6.7 | A | 0.09 | 5.2 | A |
| | | T | 0.17 | 5.5 | A | 0.08 | 5.1 | A |
| | WB | TR | 0.16 | 5.4 | A | 0.15 | 5.3 | A |
| Station Access Road | SB | L | 0.07 | 19.6 | B | 0.19 | 20.3 | C |
| | | R | 0.22 | 20.5 | C | 0.53 | 23.1 | C |
| **Overall Intersection** | | **-** | | **8.3** | **A** | | **13.5** | **B** |
| **Palmyrita Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Palmyrita Avenue | EB | L | 0.06 | 7.6 | A | 0.22 | 9.4 | A |
| Northgate Street | SB | L | 0.21 | 12.4 | B | 0.32 | 29.8 | D |
| | | R | 0.20 | 9.5 | A | 0.17 | 10.5 | B |
| **Columbia Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Columbia Avenue | EB | T | 0.13 | 9.1 | A | 0.09 | 9.1 | A |
| | | TR | 0.16 | 9.1 | A | 0.12 | 9.1 | A |
| | WB | L | 0.15 | 9.7 | A | 0.56 | 15.1 | C |
| | | T | 0.24 | 9.9 | A | 0.23 | 9.2 | A |
| Northgate Street | NB | L | 0.05 | 8.5 | A | 0.02 | 8.7 | A |
| | | R | 0.28 | 9.1 | A | 0.16 | 8.7 | A |
| **Overall Intersection** | | **-** | | **9.3** | **A** | | **11.9** | **B** |
| **Marlborough Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Marlborough Avenue | EB | LT | 0.20 | 7.8 | A | 0.08 | 7.5 | A |
| Northgate Street | SB | LR | 0.12 | 9.8 | A | 0.34 | 10.4 | B |
| **Marlborough Avenue at Rustin Avenue – Unsignalized** | | | | | | | | |
| Marlborough Avenue | WB | L | 0.03 | 7.8 | A | 0.18 | 8.1 | A |
| Rustin Avenue | NB | LR | 0.36 | 12.3 | B | 0.31 | 16.0 | C |
| **Marlborough Option** | | | | | | | | |
| **Center Street at Iowa Avenue – Signalized** | | | | | | | | |
| Center Street | EB | LTR | 0.63 | 40.7 | D | 0.95 | 51.1 | D |
| | WB | L | 0.25 | 31.2 | C | 0.43 | 32.3 | C |
| | | T | 0.52 | 34.5 | C | 0.83 | 52.8 | D |
| | | R | 0.07 | 29.6 | C | 0.20 | 30.4 | C |
| Iowa Avenue | NB | L | 0.31 | 43.9 | D | 0.38 | 32.0 | C |
| | | T | 0.56 | 36.6 | D | 1.21 | 134.7 | F |
| | | R | 0.10 | 31.7 | C | 0.15 | 23.1 | C |
| | SB | L | 0.12 | 42.1 | D | 0.39 | 38.7 | D |
| | | T | 0.55 | 36.2 | D | 0.60 | 28.7 | C |
| | | R | 0.05 | 31.3 | C | 0.05 | 23.8 | C |
| **Overall Intersection** | | **-** | | **36.7** | **D** | | **76.3** | **E** |

**Table 4.11-5 (cont'd)**
**Hunter Park Station Options 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Palmyrita Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Palmyrita Avenue | EB | LT | 0.13 | 11.6 | B | 0.09 | 13.6 | B |
| | | R | 0.02 | 10.9 | B | 0.06 | 13.4 | B |
| | WB | L | 0.46 | 14.1 | B | 0.89 | 38.6 | D |
| | | TR | 0.03 | 11.0 | B | 0.30 | 14.8 | B |
| Iowa Avenue | NB | L | 0.16 | 32.0 | C | 0.09 | 24.7 | C |
| | | T | 0.36 | 20.1 | C | 0.86 | 23.5 | C |
| | | R | 0.11 | 18.6 | B | 0.26 | 13.9 | B |
| | SB | L | 0.43 | 28.4 | C | 0.32 | 26.3 | C |
| | | T | 0.54 | 20.3 | C | 0.64 | 17.1 | B |
| | | R | 0.01 | 16.5 | B | 0.01 | 12.5 | B |
| **Overall Intersection** | | **-** | | **18.9** | **B** | | **22.6** | **C** |
| **Columbia Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Columbia Avenue | EB | L | 0.22 | 42.0 | D | 0.44 | 32.8 | C |
| | | T | 0.34 | 32.2 | C | 0.18 | 28.9 | C |
| | | R | 0.29 | 31.7 | C | 0.48 | 31.7 | C |
| | WB | L | 0.19 | 41.8 | D | 0.63 | 37.1 | D |
| | | T | 0.07 | 29.6 | C | 0.39 | 30.3 | C |
| | | R | 0.04 | 29.3 | C | 0.14 | 28.7 | C |
| Iowa Avenue | NB | L | 0.50 | 43.2 | D | 0.81 | 49.3 | D |
| | | T | 0.49 | 30.2 | C | 0.92 | 39.6 | D |
| | | R | 0.11 | 26.4 | C | 0.05 | 19.9 | B |
| | SB | L | 0.28 | 40.9 | D | 0.07 | 35.8 | D |
| | | T | 0.67 | 33.6 | C | 0.91 | 41.3 | D |
| | | R | 0.08 | 26.1 | C | 0.11 | 22.4 | C |
| **Overall Intersection** | | **-** | | **33.1** | **C** | | **38.6** | **D** |
| **Marlborough Avenue at Iowa Avenue – Signalized** | | | | | | | | |
| Marlborough Avenue | EB | L | 0.32 | 27.5 | C | 0.45 | 28.6 | C |
| | | TR | 0.43 | 30.4 | C | 0.30 | 30.8 | C |
| | WB | L | 0.27 | 27.1 | C | 0.75 | 39.9 | D |
| | | T | 0.06 | 27.6 | C | 0.29 | 30.7 | C |
| | | R | 0.52 | 31.8 | C | 0.80 | 52.8 | D |
| Iowa Avenue | NB | L | 0.16 | 26.3 | C | 0.15 | 32.6 | C |
| | | T | 0.51 | 16.7 | B | 0.67 | 18.7 | B |
| | | R | 0.15 | 14.2 | B | 0.04 | 12.9 | B |
| | SB | L | 0.65 | 27.7 | C | 0.45 | 35.3 | D |
| | | T | 0.43 | 14.8 | B | 0.87 | 26.1 | C |
| | | R | 0.04 | 12.4 | B | 0.03 | 12.8 | B |
| **Overall Intersection** | | **-** | | **19.3** | **B** | | **26.3** | **C** |
| **~~Marlborough~~ Columbia Avenue at Station Access Road – Signalized** | | | | | | | | |
| Columbia Avenue | EB | L | 0.40 | 6.8 | A | 0.10 | 5.2 | A |
| | | T | 0.19 | 5.5 | A | 0.14 | 5.3 | A |
| | WB | TR | 0.19 | 5.5 | A | 0.21 | 5.6 | A |
| Station Access Road | SB | L | 0.07 | 19.6 | B | 0.19 | 20.3 | C |
| | | R | 0.22 | 20.5 | C | 0.53 | 23.1 | C |
| **Overall Intersection** | | **-** | | **8.2** | **A** | | **12.1** | **B** |
| **Palmyrita Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Palmyrita Avenue | EB | L | 0.06 | 7.6 | A | 0.22 | 9.4 | A |
| Northgate Street | SB | L | 0.22 | 12.5 | B | 0.32 | 29.8 | D |
| | | R | 0.20 | 9.5 | A | 0.17 | 10.5 | B |

**Table 4.11-5 (cont'd)**
**Hunter Park Station Options 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Columbia Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Columbia Avenue | EB | T | 0.12 | 9.1 | A | 0.05 | 9.0 | A |
| | | TR | 0.15 | 9.1 | A | 0.08 | 8.9 | A |
| | WB | L | 0.30 | 11.2 | B | 0.60 | 16.2 | C |
| | | T | 0.10 | 8.8 | A | 0.21 | 9.1 | A |
| Northgate Street | NB | L | 0.05 | 8.5 | A | 0.02 | 8.6 | A |
| | | R | 0.31 | 9.4 | A | 0.21 | 9.0 | A |
| **Overall Intersection** | | **-** | | **9.7** | **A** | | **12.5** | **B** |
| **Marlborough Avenue at Northgate Street – Unsignalized** | | | | | | | | |
| Marlborough Avenue | EB | LT | 0.22 | 7.9 | A | 0.11 | 7.6 | A |
| Northgate Street | SB | LR | 0.20 | 9.9 | A | 0.35 | 10.5 | B |
| **Marlborough Avenue at Rustin Avenue – Unsignalized** | | | | | | | | |
| Marlborough Avenue | WB | L | 0.03 | 7.9 | A | 0.19 | 8.3 | A |
| Rustin Avenue | NB | LR | 0.38 | 13.1 | B | 0.34 | 17.9 | C |

Notes:

1. "EB" refers to the eastbound direction, "WB" to westbound, "NB" to northbound, and "SB" to southbound.
2. "Mvt." refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through-right-turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types. It is possible that lane uses change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed. DefL is a defacto left-turn lane automatically input by the HCS software when the volume of the left turns is high enough to create a "natural" turn lane to accommodate the demand; though movements would then use the adjacent travel lane.
3. V/C is the volume-to-capacity ratio for the Mvt. Listed in the first column. Values above 1.0 indicate an excess of demand over capacity.
4. Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (seconds/vehicle) for each lane group listed in the Mvt. Column as noted in the 2000 HCM-TRB.
5. The delay calculation for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated.
6. LOS for unsignalized intersections is based upon total average delay per vehicle (seconds/vehicle) for each lane group listed in the Mvt. Column as noted in the 2000 HCM-TRB.

Moreno Valley/March Field Station

Westbound Cactus Avenue's through movement at Old 215 would experience a significant impact by incurring just over two seconds of delay within LOS F during the PM analysis hour (Mitigation Measure TT-1), as shown in Table 4.11-6.

**Table 4.11-6**
**Moreno Valley/March Field Station 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Cactus Avenue at Southbound I-215 Ramps – Signalized** | | | | | | | | |
| Cactus Avenue | EB | T | 0.21 | 13.0 | B | 0.82 | 22.8~~7~~ | C |
| | WB | L | ~~0.90~~0.94 | ~~28.6~~35.1 | ~~C~~D | ~~1.51~~1.73 | ~~251.8~~349.1 | F |
| | | T | 0.18 | 0.0 | A | 0.09 | 0.0 | A |
| **Overall Intersection** | | - | | **~~15.3~~ 18.7** | **B** | | **~~136.9~~196.9** | **F** |
| **Cactus Avenue at Old 215 – Signalized** | | | | | | | | |
| Cactus Avenue | EB | L | 0.34 | 14.9 | B | 0.49 | 17.1 | B |
| | | TR | ~~0.40~~0.41 | ~~13.4~~13.5 | B | ~~0.70~~0.72 | ~~16.0~~16.4 | B |
| | WB | T | 1.01 | ~~44.2~~46.0 | D | 1~~.49~~1.48 | ~~244.0~~239.9 | F |
| | | R | ~~0.10~~0.11 | 11.4 | B | ~~0.07~~0.16 | ~~9.8~~10.4 | ~~A~~B |
| Old 215 | NB | L | 0.38 | 16.0 | B | 0.26 | 20.0 | B |
| | | TR | 0.13 | 13.9 | B | 0.09 | 18.5 | B |
| | SB | L | ~~0.05~~0.06 | ~~13.4~~13.5 | B | 0.21 | 19.4 | B |
| | | TR | 0.16 | 14.1 | B | 0.31 | 20.3 | C |
| **Overall Intersection** | | - | | **~~31.4~~32.2** | **C** | | **~~152.1~~146.3** | **F** |
| **Alessandro Boulevard at Old 215 – Signalized** | | | | | | | | |
| Alessandro Boulevard | EB | L | 0.33 | 29.1 | C | 0.51 | 38.4 | D |
| | | T | ~~0.55~~0.58 | ~~19.7~~20.1 | ~~B~~C | 0.93~~2~~ | ~~35.6~~36.9 | D |
| | WB | L | 0.14 | 28.1 | C | 0.10 | 35.7 | D |
| | | T | ~~0.78~~0.77 | ~~24.5~~24.4 | C | ~~0.82~~0.77 | ~~28.2~~26.1 | C |
| Old 215 | NB | L | 0.49 | 32.8 | C | 0.63 | 40.9 | D |
| | | T | 0.25 | 30.3 | C | 0.12 | 33.9 | C |
| | SB | L | 0.04 | 29.2 | C | 0.19 | 33.8 | C |
| | | T | 0.03 | 29.2 | C | 0.11 | 33.9 | C |
| **Overall Intersection** | | **-** | | **24.1** | **C** | | **33.0** | **C** |

**Table 4.11-6 (cont'd)**
**Moreno Valley/March Field Station 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **Alessandro Boulevard at Mission Grove Parkway – Signalized** | | | | | | | | |
| Alessandro Boulevard | EB | L | 0.18 | 44.3 | D | 0.38 | 53.4 | D |
| | | T | 0.40 | 17.9 | B | ~~0.98~~0.99 | ~~40.3~~41.7 | D |
| | | R | 0.03 | 14.6 | B | 0.16 | 15.1 | B |
| | WB | L | 0.36 | 45.2 | D | 0.72 | 59.6 | E |
| | | T | 0.88 | ~~28.7~~28.8 | C | ~~0.75~~0.76 | ~~22.8~~23.1 | C |
| | | R | 0.08 | 15.0 | B | 0.11 | 14.7 | B |
| Mission Grove Parkway | NB | L | 0.39 | 45.5 | D | 0.35 | 50.9 | D |
| | | T | 0.76 | 54.4 | D | 0.38 | 46.8 | D |
| | | R | 0.46 | 41.9 | D | 0.49 | 48.2 | D |
| | SB | L | 0.56 | 50.1 | D | 0.83 | 78.2 | E |
| | | TR | 0.34 | 40.2 | D | 0.32 | 45.9 | D |
| **Overall Intersection** | | **-** | | **29.7** | **C** | | **~~36.6~~37.2** | **D** |

## Downtown Perris Station

Significant impacts would be expected at two study intersections during the PM analysis hour as shown in Table 4.11-7:

- At the intersection of SR-74 (4th Street) and D Street, north and southbound D Street's through/left-turn movements would incur approximately ten and 20 seconds of additional delay within LOS F, respectively (Mitigation Measure TT-2).
- At San Jacinto and Redlands Avenues, westbound San Jacinto Avenue's through/left-turn movements and northbound Redlands Avenue would incur four to eight seconds of additional delay within LOS F.

**Table 4.11-7**
**Downtown Perris Station 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **SR-74 at Navajo Road – Signalized** | | | | | | | | |
| SR-74 | EB | L | 0.13 | 26.9 | C | 0.23 | 30.5 | C |
| | | T | 0.28 | 4.8 | A | 0.52 | 5.3 | A |
| | WB | TR | 0.39 | 10.9 | B | 1.04 | 52.5 | D |
| Navajo Road | SB | L | 0.27 | 19.3 | B | 0.71 | 31.6 | C |
| | | R | 0.01 | 17.9 | B | 0.03 | 24.2 | C |
| **Overall Intersection** | | - | | **9.8** | **A** | | **32.8** | **C** |
| **SR-74 ~~and~~at C Street – Signalized** | | | | | | | | |
| SR-74 | EB | L | 0.61 | 21.3 | C | 0.92 | 50.4 | D |
| | | TR | 0.51 | 9.8 | A | 0.76 | 16.2 | B |
| | WB | L | 0.04 | 24.2 | C | 0.09 | 23.9 | C |
| | | TR | 0.80 | 25.9 | C | 0.97 | 41.5 | D |
| C Street | NB | L | 0.00 | 24.0 | C | 0.00 | 23.5 | C |
| | | TR | 0.07 | 20.0 | B | 0.12 | 19.8 | B |
| | SB | L | 0.08 | 24.4 | C | 0.09 | 23.9 | C |
| | | TR | 0.32 | 21.5 | C | 0.80 | 35.4 | D |
| **Overall Intersection** | | - | | **17.8** | **B** | | **31.5** | **C** |
| **SR-74 at D Street – Signalized** | | | | | | | | |
| SR-74 | EB | L | 0.62 | 32.6 | C | 0.62 | 32.5 | C |
| | | TR | 0.65 | 24.2 | C | 1.06 | 71.9 | E |
| | WB | L | 0.07 | 25.9 | C | 0.16 | 26.5 | C |
| | | TR | 0.46 | 21.5 | C | 0.75 | 26.9 | C |
| D Street | NB | LT | 0.43 | 21.5 | C | 1.32 | 192.7 | F |
| | | R | 0.02 | 18.1 | B | 0.09 | 18.6 | B |
| | SB | LT | 0.26 | 19.9 | B | 1.37 | 216.9 | F |
| | | R | 0.08 | 18.5 | B | 0.16 | 19.1 | B |
| **Overall Intersection** | | - | | **23.6** | **C** | | **86.8** | **F** |
| **SR-74 at Perris Boulevard – Signalized** | | | | | | | | |
| SR-74 | EB | L | 0.60 | 30.2 | C | 0.84 | 49.7 | D |
| | | TR | 0.44 | 17.1 | B | 0.70 | 20.6 | C |
| | WB | L | 0.18 | 25.0 | C | 0.56 | 36.4 | D |
| | | TR | 0.35 | 16.4 | B | 0.59 | 22.5 | C |
| Perris Boulevard | NB | L | 0.11 | 18.3 | B | 0.76 | 39.0 | D |
| | | T | 0.32 | 19.7 | B | 0.76 | 30.2 | C |
| | | R | 0.06 | 18.0 | B | 0.19 | 20.0 | C |
| | SB | L | 0.15 | 18.7 | B | 1.24 | 186.8 | F |
| | | T | 0.25 | 19.2 | B | 0.63 | 25.6 | C |
| | | R | 0.08 | 18.1 | B | 0.17 | 19.9 | B |
| **Overall Intersection** | | - | | **19.1** | **B** | | **34.2** | **C** |

**Table 4.11-7 (cont'd)**
**Downtown Perris Station 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **San Jacinto Avenue ~~and~~at Perris Boulevard – Signalized** | | | | | | | | |
| San Jacinto Avenue | EB | L | 0.18 | 30.0 | C | 0.71 | 48.4 | D |
| | | TR | 0.27 | 30.7 | C | 0.29 | 27.0 | C |
| | WB | L | 0.06 | 29.3 | C | 0.08 | 34.8 | C |
| | | T | 0.14 | 29.8 | C | 0.18 | 26.1 | C |
| | | R | 0.17 | 30.1 | C | 0.28 | 27.0 | C |
| Perris Boulevard | NB | L | 0.45 | 35.8 | D | 0.45 | 41.6 | D |
| | | TR | 0.36 | 11.7 | B | 0.90 | 44.1 | D |
| | SB | L | 0.14 | 32.6 | C | 0.47 | 41.8 | D |
| | | TR | 0.32 | 11.4 | B | 0.95 | 52.7 | D |
| **Overall Intersection** | | **-** | | **16.3** | **B** | | **44.1** | **D** |
| **Nuevo Road ~~and~~at Perris Boulevard – Signalized** | | | | | | | | |
| Nuevo Road | EB | L | 0.37 | 34.2 | C | 1.39 | 214.1 | F |
| | | T | 0.31 | 27.0 | C | 0.83 | 32.9 | C |
| | | R | 0.08 | 25.1 | C | 0.25 | 22.3 | C |
| | WB | L | 0.30 | 33.6 | C | 0.57 | 32.9 | C |
| | | TR | 0.25 | 26.4 | C | 0.47 | 26.5 | C |
| | | R | 0.05 | 24.9 | C | 0.31 | 25.8 | C |
| Perris Boulevard | NB | L | 0.40 | 34.0 | C | 0.88 | 52.2 | D |
| | | T | 0.17 | 28.0 | C | 0.57 | 25.5 | C |
| | | R | 0.10 | 27.5 | C | 0.28 | 23.3 | C |
| | SB | L | 0.22 | 38.7 | D | 0.95 | 66.0 | E |
| | | T | 0.19 | 31.1 | C | 0.82 | 32.8 | C |
| | | R | 0.05 | 15.3 | B | 0.52 | 16.7 | B |
| **Overall Intersection** | | **-** | | **29.4** | **C** | | **65.7** | **E** |
| **San Jacinto Avenue at D Street - Signalized** | | | | | | | | |
| San Jacinto Avenue | EB | L | 0.65 | 27.4 | C | 0.88 | 45.0 | D |
| | | T | 0.00 | 13.8 | B | 0.03 | 15.4 | B |
| | | R | 0.01 | 13.9 | B | 0.01 | 15.3 | B |
| | WB | L | 0.36 | 31.5 | C | 0.41 | 37.2 | D |
| | | TR | 0.29 | 26.0 | C | 0.64 | 37.5 | D |
| D Street | NB | L | 0.06 | 29.0 | C | 0.11 | 34.6 | C |
| | | TR | 0.67 | 23.8 | C | 0.85 | 40.7 | D |
| | SB | L | 0.52 | 33.7 | C | 0.61 | 37.0 | D |
| | | T | 0.45 | 19.6 | B | 0.67 | 22.4 | C |
| | | R | 0.19 | 17.7 | B | 0.47 | 18.6 | B |
| **Overall Intersection** | | **-** | | **24.2** | **C** | | **32.7** | **C** |
| **San Jacinto Avenue at C Street – Unsignalized** | | | | | | | | |
| San Jacinto Avenue | EB | LTR | 0.00 | 7. 3 | A | 0.00 | 7.2 | A |
| | WB | LT~~R~~ | 0.08~~24~~ | ~~9.3~~7.5 | ~~A~~B | 0. 33~~92~~ | ~~40.8~~8.4 | ~~E~~A |
| C Street | NB | L | 0.00 | 10.7 | A | 0.00 | ~~14.3~~30.4 | D |
| | | ~~L~~TR | 0.2~~8~~4 | ~~8.2~~9.4 | A | 0. 23~~56~~ | ~~14.3~~8.0 | ~~B~~A |
| | SB | LTR | 0.01 | ~~7.9~~14.2 | A | 0.1~~0~~5 | ~~10.3~~33.8 | ~~B~~D |
| ~~**San Jacinto Avenue at D Street – Unsignalized**~~ | | | | | | | | |
| ~~San Jacinto Avenue~~ | ~~EB~~ | ~~L~~ | ~~0.55~~ | ~~18.9~~ | ~~C~~ | ~~0.97~~ | ~~65.6~~ | ~~F~~ |
| | | ~~TR~~ | ~~0.01~~ | ~~9.2~~ | ~~A~~ | ~~0.06~~ | ~~11.1~~ | ~~B~~ |
| | ~~WB~~ | ~~L~~ | ~~0.09~~ | ~~11.8~~ | ~~B~~ | ~~0.12~~ | ~~13.6~~ | ~~B~~ |
| | | ~~TR~~ | ~~0.14~~ | ~~10.8~~ | ~~B~~ | ~~0.32~~ | ~~15.5~~ | ~~C~~ |
| ~~Redlands Avenue~~ | ~~NB~~ | ~~L~~ | ~~0.02~~ | ~~9.9~~ | ~~A~~ | ~~0.03~~ | ~~11.7~~ | ~~B~~ |
| | | ~~TR~~ | ~~0.67~~ | ~~21.7~~ | ~~C~~ | ~~0.90~~ | ~~49.5~~ | ~~E~~ |
| | ~~SB~~ | ~~L~~ | ~~0.12~~ | ~~10.8~~ | ~~B~~ | ~~0.32~~ | ~~15.2~~ | ~~C~~ |
| | | ~~T~~ | ~~0.42~~ | ~~14.0~~ | ~~B~~ | ~~1.05~~ | ~~84.4~~ | ~~F~~ |
| | | ~~R~~ | ~~0.20~~ | ~~10.0~~ | ~~A~~ | ~~0.81~~ | ~~34.1~~ | ~~D~~ |
| ~~**Overall Intersection**~~ | | ~~-~~ | | ~~**16.3**~~ | ~~**C**~~ | | ~~**55.8**~~ | ~~**F**~~ |

**Table 4.11-7 (cont'd)**
**Downtown Perris Station 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Peak Hour Control Delay | AM Peak Hour LOS | PM Peak Hour V/C | PM Peak Hour Control Delay | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|
| **San Jacinto Avenue at Redlands Avenue – Unsignalized** | | | | | | | | |
| San Jacinto Avenue | EB | L | 0.14 | 10.8 | B | 0.26 | 16.5 | C |
| | | TR | 0.12 | 9.3 | A | 0.41 | 18.8 | C |
| | WB | LT | 0.37 | 13.3 | B | 1.68 | 338.3 | F |
| | | R | 0.07 | 8.6 | A | 0.58 | 21.6 | C |
| Redlands Avenue | NB | LT | 0.29 | 11.4 | B | 1.36 | 200.0 | F |
| | | R | 0.15 | 9.1 | A | 1.58 | 292.8 | F |
| | SB | L | 0.04 | 9.6 | A | 0.87 | 51.3 | F |
| | | TR | 0.41 | 12.8 | B | 0.44 | 18.2 | C |
| **Overall Intersection** | | **-** | | **11.6** | **B** | | **194.7** | **F** |
| **6th Street ~~and~~at C Street – Unsignalized** | | | | | | | | |
| 6th Street | EB | LTR | 0.01 | 7.2 | A | 0.01 | 7.2 | A |
| C Street | NB | LT | 0.00 | 8.8 | A | 0.03 | 9.3 | A |
| | SB | TR | 0.02 | 9.4 | A | 0.05 | 9.3 | A |
| **6th Street ~~and~~at D Street – Unsignalized** | | | | | | | | |
| 6th Street | WB | LR | 0.01 | 10.6 | B | 0.06 | 11.3 | B |
| D Street | SB | LT | 0.00 | 7.8 | A | 0.01 | 7.8 | A |
| **7th Street ~~and~~at C Street – Unsignalized** | | | | | | | | |
| 7~~6~~th Street | EB | LTR | 0.00 | 7.3 | A | 0.00 | 7.4 | A |
| | WB | LTR | 0.00 | 7.3 | A | 0.02 | 7.3 | A |
| C Street | NB | LTR | 0.01 | 8.7 | A | 0.02 | 8.8 | A |
| | SB | LTR | 0.03 | 9.1 | A | 0.08 | 10.3 | B |
| **7th Street ~~and~~at D Street – Unsignalized** | | | | | | | | |
| 7~~6~~th Street | EB | LTR | 0.08 | 11.5 | B | 0.24 | 17.8 | C |
| | WB | LTR | 0.02 | 11.7 | B | 0.16 | 18.5 | C |
| D Street | NB | LTR | 0.00 | 7.5 | A | 0.03 | 8.0 | A |
| | SB | LTR | 0.00 | 7.8 | A | 0.01 | 7.9 | A |
| **7th Street ~~and~~at Perris Boulevard – Unsignalized** | | | | | | | | |
| 7th Street | EB | LTR | 0.07 | ~~12.2~~11.8 | B | ~~0.29~~0.27 | ~~24.4~~22.8 | C |
| | WB | LTR | 0.01~~9~~ | ~~13.1~~11.2 | B | ~~0.63~~0.19 | ~~41.3~~18.0 | ~~E~~C |
| Perris Boulevard | NB | LTR | 0.00 | 7.7 | A | 0.00 | 8.3 | A |
| | SB | LTR | 0.00 | ~~8.0~~7.9 | A | 0.01 | 8.2~~3~~ | A |
| ~~**7th Street and Redlands Avenue – Unsignalized**~~ | | | | | | | | |
| ~~7th Street~~ | ~~EB~~ | ~~LR~~ | ~~0.26~~ | ~~10.2~~ | ~~B~~ | ~~0.31~~ | ~~10.9~~ | ~~B~~ |
| ~~Redlands Avenue~~ | ~~NB~~ | ~~L~~ | ~~0.00~~ | ~~7.6~~ | ~~A~~ | ~~0.02~~ | ~~7.9~~ | ~~A~~ |
| ~~**Case Road and Goetz Road – Unsignalized**~~ | | | | | | | | |
| ~~Case Road~~ | ~~EB~~ | ~~T~~ | ~~0.13~~ | ~~9.3~~ | ~~A~~ | ~~0.60~~ | ~~17.6~~ | ~~C~~ |
| | | ~~R~~ | ~~0.15~~ | ~~8.7~~ | ~~A~~ | ~~0.39~~ | ~~11.6~~ | ~~B~~ |
| | ~~WB~~ | ~~L~~ | ~~0.18~~ | ~~10.4~~ | ~~B~~ | ~~0.32~~ | ~~12.7~~ | ~~B~~ |
| | | ~~T~~ | ~~0.24~~ | ~~10.4~~ | ~~B~~ | ~~0.55~~ | ~~16.3~~ | ~~C~~ |
| ~~Goetz Road~~ | ~~NB~~ | ~~L~~ | ~~0.32~~ | ~~10.7~~ | ~~B~~ | ~~0.34~~ | ~~12.8~~ | ~~B~~ |
| | | ~~R~~ | ~~0.19~~ | ~~8.5~~ | ~~A~~ | ~~0.16~~ | ~~9.8~~ | ~~A~~ |
| ~~**Case Road and G Street – Unsignalized**~~ | | | | | | | | |
| ~~Case Road~~ | ~~EB~~ | ~~L~~ | ~~0.09~~ | ~~8.3~~ | ~~A~~ | ~~0.05~~ | ~~8.4~~ | ~~A~~ |
| ~~G Street~~ | ~~SB~~ | ~~L~~ | ~~0.08~~ | ~~14.0~~ | ~~B~~ | ~~0.62~~ | ~~35.0~~ | ~~D~~ |
| | | ~~R~~ | ~~0.05~~ | ~~9.8~~ | ~~A~~ | ~~0.15~~ | ~~11.2~~ | ~~B~~ |

**Table 4.11-7 (cont'd)**
**Downtown Perris Station 2012 Future Levels of Service with the Project**

| Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Control Delay | AM LOS | PM Peak Hour V/C | PM Control Delay | PM LOS |
|---|---|---|---|---|---|---|---|---|
| ~~**Case Road and Ellis Avenue – Unsignalized**~~ | | | | | | | | |
| ~~Case Road~~ | ~~NB~~ | ~~L~~ | ~~0.00~~ | ~~7.6~~ | ~~A~~ | ~~0.00~~ | ~~9.0~~ | ~~A~~ |
| ~~**Redlands Avenue and Ellis Avenue – Unsignalized**~~ | | | | | | | | |
| ~~Ellis Avenue~~ | ~~EB~~ | ~~LT~~ | ~~0.00~~ | ~~7.3~~ | ~~A~~ | ~~0.00~~ | ~~7.2~~ | ~~A~~ |
| ~~Redlands Avenue~~ | ~~SB~~ | ~~LR~~ | ~~0.01~~ | ~~8.6~~ | ~~A~~ | ~~0.01~~ | ~~8.6~~ | ~~A~~ |

South Perris Station

Significant impacts would be expected at all three study intersections as shown in Table 4.11-8:

- Eastbound Bonnie Drive's left-turn movement at southbound I-215 ramps would deteriorate from LOS D to F during the AM and PM analysis hours, and right-turn movement would worsen within LOS F by incurring approximately 240 seconds of additional delay during the PM analysis hour (Mitigation Measure TT-~~4~~3).
- SR-74 at northbound I-215 off-ramp would deteriorate from LOS D to E during the AM and PM analysis hours.
- At the intersection of SR-74 and Sherman Road's, northbound left-turn movement onto SR-74 would incur approximately 110 and 290 seconds of additional delay within LOS F during the respective AM and PM analysis hours. Southbound Sherman Road would deteriorate from LOS E to F during the AM, and worsen within LOS F by incurring 160 seconds of additional delay during the PM analysis hours.

**Table 4.11-8**
**South Perris Station 2012 Future Levels of Service with the Project**

| ~~c~~Intersection and Approach | | Mvt. | AM Peak Hour V/C | AM Control Delay | AM LOS | PM Peak Hour V/C | PM Control Delay | PM LOS |
|---|---|---|---|---|---|---|---|---|
| **Relocated Mapes Road at Station Access Road – Signalized** | | | | | | | | |
| Relocated Mapes Road | EB | L | 0.13 | 5.8 | A | 0.03 | 7.6 | A |
| | | T | 0.08 | 5.5 | A | 0.20 | 8.4 | A |
| | WB | TR | 0.33 | 6.6 | A | 0.18 | 8.3 | A |
| Station Access Road | SB | L | 0.14 | 17.6 | B | 0.92 | 38.8 | D |
| | | R | 0.04 | 17.1 | B | 0.19 | 14.4 | B |
| **Overall Intersection** | | **-** | | **7.3** | **A** | | **21.4** | **C** |
| **Bonnie Drive at Southbound I-215 Ramps – Unsignalized** | | | | | | | | |
| Bonnie Drive | EB | L | 0.30 | 78.5 | F | 1.51 | 320.2 | F |
| | | R | 0.36 | 18.7 | C | 1.78 | 397.2 | F |
| Southbound I-215 Ramps | NB | L | 0.63 | 15.9 | C | 0.47 | 15.5 | C |
| **SR-74 at Northbound I-215 Off Ramp – Unsignalized** | | | | | | | | |
| SR-74 | EB | L | 0.01 | 8.7 | A | 0.03 | 8.3 | A |
| I-215 Northbound Off-Ramp | SB | LR | 0.80 | 43.9 | E | 0.69 | 42.5 | E |
| **SR-74 at Sherman Road – Unsignalized** | | | | | | | | |
| SR-74 | EB | L | 0.09 | 13.4 | B | 0.08 | 10.5 | B |
| | WB | L | 0.11 | 10.1 | B | 0.21 | 14.5 | B |
| Sherman Road | NB | L | 1.02 | 304.4 | F | 2.00 | 854.1 | F |
| | | R | 0.21 | 12.6 | B | 0.42 | 20.6 | C |
| | SB | LR | 0.53 | 52.3 | F | 1.71 | 592.9 | F |

Grade Crossings

In addition to impacts at key intersections that would experience increases in traffic volumes as a result of project-generated trips, the PVL could also result in impacts at grade crossings by creating additional delays to vehicles that would be stopped during periods of train movements. However, these additional delays would not be considered significant considering that the project would operate with twelve trains per day and only one train during the peak traffic hours in 2012, and that the wait time of vehicular traffic (30 seconds for typical operations) would not be any more disruptive to traffic operations than a single red phase of a typical traffic signal cycle.

Further, as noted in Chapter 2.0, the project would make improvements at several existing grade crossings including the installation of new signals at several of them. These signals would be placed to improve safety and meet jurisdictional requirements, and would remain inactive (i.e. display a steady green signal for vehicular traffic) unless a train is detected. Therefore, no significant delays would be expected due to the installation of these new signals.

Construction Period Impacts

The construction activities for the proposed PVL project would result in an increase of auto and truck trips generated by construction crews, and the delivery/removal of materials to and from the construction sites. It should be noted that the delivery of construction materials and equipment, such as the rail, rail ties, ballast, and specialized track equipment, would be accomplished using the existing rail, as opposed to being delivered by truck. The volume of construction traffic would be expected to be modest (less than 50 vehicles per hour) given that no significant excavation is expected, and most construction-related materials deliveries would likely occur during non-peak hours so as to limit congestion along adjacent roads. In addition, traffic diversions would occur during partial and complete roadway and grade crossing closures. As a result, the construction activities could potentially create short-term significant traffic impacts although, due to their temporary nature, such impacts may be tolerated and the thresholds of significance during construction periods may be redefined by reviewing agencies (Mitigation Measure TT-4). RCTC will develop a traffic management plan in consultation with local jurisdictions ~~to determine detours, length and timing of any closures, temporary access routes, and signage~~that will contain measures proven to improve traffic levels of service~~ in order to~~ and mitigate significant impacts to acceptable levels~~less than significant levels~~. RCTC will be responsible for the development and enforcement of this measure.

In terms of estimated truck volumes, the cut/fill estimates were examined to identify volumes of earth that would potentially be moved off site. A conservative approach estimated truck volumes using an average number of tons of material in a cubic yard of earth (1.35 tons/cubic yards) and the typical weight capacity of a dump truck (15 tons/truck). Also, a single work shift was included, though two work shifts per day would be more likely. The estimate yields 30 empty trucks in and 30 filled truck trips out. Again, using a single work shift, this would indicate on average four "ins" and 4 "outs" each hour, which is a low figure not likely to generate any significant traffic impact. Moreover, the cut/fill estimates were calculated for the entire corridor, so it is unlikely that any volume of truck trips would be concentrated in any particular area or through any one intersection.

***Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks***

The project does not propose any actions which would result in an increase in air traffic or a change in air traffic patterns, and therefore, would not create any impacts in this context.

***Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)***

The proposed project would involve track upgrades to an existing rail line to allow for commuter rail service, but would not introduce design features that would increase hazards. The track and grade crossing improvements are required to bring the existing freight facility up to commuter rail standards, thereby resulting in safer operations.

***Result in inadequate emergency access***

As mentioned above, the proposed project would include the closure of two grade crossings, Poarch Road in Riverside and 6th Street in downtown Perris. The existing grade crossing at Poarch Road is planned to be closed to the public with access by emergency vehicles only (with a locked gate). The closure of the Poarch Road crossing would redirect public access to the small number of residences northeast of the crossing via Watkins Drive. However, these residences ~~would remain~~are accessible via Gernert Road. As Poarch Road will remain accessible to emergency vehicles only, the project would not result in a change in emergency access to this neighborhood. ~~, and the emergency access is not deemed to be inadequate.~~ Closure of the 6th Street crossing in downtown Perris would also not create inadequate emergency access as alternate routes (4th and 7th Streets being the nearest) around the closure could be readily used by emergency personnel.

In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. As Commercial Street will remain accessible to emergency vehicles, the project would not result in a change in emergency access. Local fire stations and other emergency responders would be notified of these permanent closures to allow for adjustments in their emergency routes and to ensure that adequate emergency access is maintained.

Further, new signals and gates would be installed at 15 grade crossings by the project to promote safe traffic flow. The operation of the gates at the crossings for the passing of a train could potentially delay emergency vehicles for approximately 30 seconds during the presence of a train crossing. However, given that the train crossings would occur only twelve times each day, and would block the crossing for a total of six minutes during a 24-hour period, the probability of an emergency vehicle experiencing this delay is slight, and this measure is not expected to significantly impact emergency access.

***Does the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)***

The implementation of the PVL commuter rail service would serve as an alternative transportation option, help alleviate existing and future congestion in the I-215 corridor, provide bus connections to several RTA bus routes at all stations, implement improvements at several grade crossings, and provide park-and-ride facilities, all of which would be aligned with the policies of the Cities of Riverside and Perris to encourage increased use of public transportation and multi-modal transportation as means of reducing roadway congestion, to ensure adequate connections among all alternative modes, and to reconstruct existing grade separations as necessary for the smooth flow of traffic to name a few. As such, the proposed project would reinforce, rather than conflict with, adopted policies, plans, or programs supporting alternative transportation.

**Table 4.11-9**
**2012 Future Levels of Service and Mitigation Measures**

| INTERSECTION & APPROACH | | Mvt. | Without Project | | | With Project | | | Mvt. | Mitigated With Project | | | PVL Mitigation Measures | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | | V/C | Control Delay | LOS | | |
| **Moreno Valley/March Field Station** | | | | | | | | | | | | | | |
| **PM Peak** **Cactus Avenue at Old 215** | | | | | | | | | | | | | **TT-1:** Reduce north/southbound Old 215's maximum green time to 15 seconds. Less than significant after mitigation. | |
| Cactus Avenue | EB | L | 0.36 | 14.1 | B | 0.49 | 17.1 | B | L | 0.41 | 8.6 | A | | |
| | | TR | 0.~~69~~71 | ~~15.8~~16.2 | B | 0.~~70~~72 | 16.4~~0~~ | B | TR | 0.59~~.57~~ | 7.6~~4~~ | A | | |
| | WB | T | 1.48~~49~~ | ~~241.5~~237.4 | F | 1.48~~49~~ | ~~244.0~~239.9 | F | T | 1.~~23~~22 | ~~119.0~~115.7 | F | | |
| | | R | 0.16~~07~~ | ~~9.8~~10.4 | ~~A~~B | 0.16~~07~~ | ~~9.8~~10.4 | B~~A~~ | R | 0.13~~06~~ | 4.9~~7~~ | A | | |
| Old 215 | NB | L | 0.25 | 19.8 | B | 0.26 | 20.0 | B | L | 0.47 | 25.6 | C | | |
| | | TR | 0.09 | 18.5 | B | 0.09 | 18.5 | B | TR | 0.15 | 22.5 | C | | |
| | SB | L | 0.~~,~~21 | 19.4 | B | 0.21 | 19.4 | B | L | 0.34 | 24.1 | C | | |
| | | TR | 0.30 | 20.2 | C | 0.31 | 20.3 | C | TR | 0.52 | 25.5 | C | | |
| **Overall Intersection** | | - | | **~~151.4~~145.6** | **F** | | **~~152.1~~146.3** | **F** | | | **~~75.5~~71.8** | **E** | | |
| **Downtown Perris Station** | | | | | | | | | | | | | | |
| **PM Peak** **SR-74 at D Street** | | | | | | | | | | | | | **TT-2:** ~~Restripe north/ southbound D Street to provide one left-turn and one shared through/ right-turn lane.~~ Reduce the maximum green time for the east/westbound SR-74 left-turn phase to 14 seconds. Less than significant after mitigation. | |
| SR-74 | EB | L | 0.57 | 31.0 | C | 0.62 | 32.5 | C | L | 0.~~,62~~66 | ~~325~~34.3 | C | | |
| | | TR | 1.06 | 71.9 | E | 1.06 | 71.9 | E | TR | 1.05~~6~~ | ~~71.9~~67.0 | E | | |
| | WB | L | 0.16 | 26.5 | C | 0.16 | 26.5 | C | L | 0.17~~6~~ | 26.9~~5~~ | C | | |
| | | TR | 0.76 | 27.0 | C | 0.75 | 26.9 | C | TR | 0.74~~75~~ | 26.0~~9~~ | C | | |
| D Street | NB | LT | 1.30 | 183.1 | F | 1.32 | 192.7 | F | L | ~~0.55~~1.29 | 176.5~~24.5~~ | F~~C~~ | | |
| | | R | 0.09 | 18.6 | B | 0.09 | 18.6 | B | TR | 0.~~58~~09 | 18.2~~23.6~~ | B~~C~~ | | |
| | SB | LT | 1.32 | 194.2 | F | 1.37 | 216.9 | F | L | ~~0.46~~1.32 | 193.7~~22.6~~ | F~~C~~ | | |
| | | R | 0.17 | 19.2 | B | 0.16 | 19.1 | B | TR | 0.16~~60~~ | 18.7~~24.1~~ | B~~C~~ | | |
| **Overall Intersection** | | **-** | | **82.8** | **F** | | **86.8** | **F** | **-** | | **80.2~~42.8~~** | **~~B~~F** | | |

**Table 4.11-9 (cont'd)**
**2012 Future Levels of Service and Mitigation Measures**

| INTERSECTION & APPROACH | | Mvt. | Without Project | | | With Project | | | Mvt. | Mitigated With Project | | | PVL Mitigation Measures | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | | V/C | Control Delay | LOS | | |
| **San Jacinto Avenue at Redlands Avenue** | | | Unsignalized | | | Unsignalized | | | | Signalized | | | | Iinstallation of a new traffic signal to be completed by a private developer as part of an unrelated development. |
| San Jacinto Avenue | EB | L | 0.26 | 16.5 | C | 0.26 | 16.5 | C | L | 0.68 | 40.3 | D | | |
| | | TR | 0.41 | 18.8 | C | 0.41 | 18.8 | C | TR | 0.56 | 30.2 | C | | |
| | WB | LT | 1.67 | 333.9 | F | 1.68 | 338.3 | F | L | 0.94 | 44.0 | D | | |
| | | R | 0.58 | 21.6 | C | 0.58 | 21.6 | C | TR | 0.57 | 18.2 | B | | |

[1]As presented herein, a few individual turning movements would continue to operate below acceptable levels of service with mitigation measures. However, these would not be considered impacts of the project per impact criteria, as the future conditions without the project would already be at unacceptable levels.

**Table 4.11-9 (cont'd)**
**2012 Future Levels of Service and Mitigation Measures**

| INTERSECTION & APPROACH | | Mvt. | Without Project V/C | Without Project Control Delay | Without Project LOS | With Project V/C | With Project Control Delay | With Project LOS | Mvt. | Mitigated With Project V/C | Mitigated With Project Control Delay | Mitigated With Project LOS | Mitigation Measures | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Downtown Perris Station (Continued)** | | | | | | | | | | | | | | |
| Redlands Avenue~~D~~ ~~Street~~ | NB | LT | 1.34 | 193.1 | F | 1.36 | 200.0 | F | L | 0.66 | 36.7 | D | | |
| | | R | 1.56 | 284.2 | F | 1.58 | 292.8 | F | T | 0.90 | 40.6 | D | | |
| | | - | - | - | - | - | - | - | R | 0.66 | 6.6 | A | | |
| | SB | L | 0.87 | 51.3 | F | 0.87 | 51.3 | F | L | 0.92 | 39.8 | D | | |
| | | TR | 0.44 | 18.2 | C | 0.44 | 18.2 | C | TR | 0.32 | 16.0 | B | | |
| **Overall Intersection** | | **-** | | **189.9** | **F** | | **194.7** | **F** | **-** | | **27.9** | **C** | | |
| **South Perris Station** | | | | | | | | | | | | | | |
| **AM Peak** **Bonnie Drive at Southbound I-215 Ramps** | | | | Unsignalized | | | Unsignalized | | | | Signalized | | | |
| Bonnie Drive | EB | L | 0.03 | 27.8 | D | 0.30 | 78.5 | F | L | 0.07 | 25.9 | C | **TT-3:** Install new traffic signal. Less than significant after mitigation. | |
| | | R | 0.30 | 17.5 | C | 0.36 | 18.7 | C | R | 0.54 | 30.5 | C | | |
| Southbound I-215 Ramps | NB | L | 0.38 | 11.7 | B | 0.63 | 15.9 | C | L | 0.91 | 36.5 | D | | |
| | | T | N/A | N/A | - | N/A | N/A | - | T | 0.20 | 3.6 | A | | |
| ~~Southbound I-215 Ramps~~ | SB | T | N/A | N/A | - | N/A | N/A | - | T | 0.89 | 32.0 | C | | |
| | | R | N/A | N/A | - | N/A | N/A | - | R | 0.08 | 13.2 | B | | |
| **Overall Intersection** | | | | **N/A** | **-** | | **N/A** | **-** | **-** | | **28.4** | **C** | | |
| **SR-74 at Northbound I-215 Off-Ramp** | | | | Unsignalized | | | Unsignalized | | | | Signalized | | | Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in place for the 2012 opening year. |
| SR-74 | EB | L | 0.01 | 8.5 | A | 0.01 | 8.7 | A | L | 0.02 | 4.5 | A | | |
| | | T | N/A | N/A | - | N/A | N/A | - | T | 0.52 | 11.9 | B | | |
| | WB | T | N/A | N/A | - | N/A | N/A | - | T | 0.31 | 10.3 | B | | |
| Northbound I-215 Off-Ramp | SB | LR | 0.54 | 28.9 | D | 0.80 | 43.9 | E | LR | 0.77 | 32.2 | C | | |
| **Overall Intersection** | | **-** | | **N/A** | **-** | | **N/A** | **-** | **-** | | **14.9** | **B** | | |
| **SR-74 at Sherman Road** | | | | Unsignalized | | | Unsignalized | | | | Signalized | | | Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in ~~place~~ operation for the 2012 opening year. |
| SR-74 | EB | L | 0.09 | 12.8 | B | 0.09 | 13.4 | B | L | 0.19 | 8.6 | A | | |
| | | TR | N/A | N/A | - | N/A | N/A | - | TR | 0.53 | 11.9 | B | | |
| | WB | L | 0.11 | 10.0 | A | 0.11 | 10.1 | B | L | 0.24 | 5.7 | A | | |
| | | TR | N/A | N/A | - | N/A | N/A | - | TR | 0.83 | 17.9 | B | | |
| Sherman Road | NB | L | 0.71 | 192.7 | F | 1.02 | 304.4 | F | L | 0.11 | 18.9 | B | | |
| | | R | 0.21 | 12.5 | B | 0.21 | 12.6 | B | R | 0.35 | 20.5 | C | | |
| | SB | LR | 0.46 | 43.4 | E | 0.53 | 52.3 | F | LR | 0.19 | 19.4 | B | | |
| **Overall Intersection** | | **-** | | **N/A** | **-** | | **N/A** | **-** | **-** | | **15.6** | **B** | | |

**Table 4.11-9 (cont'd)**
**2012 Future Levels of Service and Mitigation Measures**

| INTERSECTION & APPROACH | | Mvt. | Without Project | | | With Project | | | Mvt. | Mitigated With Project | | | Mitigation Measures | Significance After Mitigation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | | V/C | Control Delay | LOS | | |
| **South Perris Station (Continued)** | | | | | | | | | | | | | | |
| **PM Peak** | | | | | | | | | | | | | | |
| **Bonnie Drive at Southbound I-215 Ramps** | | | | Unsignalized | | | Unsignalized | | | | Signalized | | **TT-3:** Install new traffic signal. Less than significant after mitigation. | |
| Bonnie Drive | EB | L | 0.06 | 28.4 | D | 1.51 | 320.2 | F | L | 0.52 | 22.2 | C | | |
| | | R | 1.20 | 159.4 | F | 1.78 | 397.2 | F | R | 0.68 | 17.2 | B | | |
| Southbound I-215 Ramps | NB | L | 0.40 | 14.3 | B | 0.47 | 15.5 | C | L | 0.86 | 35.3 | D | | |
| | | T | N/A | N/A | - | N/A | N/A | - | T | 0.17 | 4.3 | A | | |
| | SB | T | N/A | N/A | - | N/A | N/A | - | T | 1.00 | 40.8 | D | | |
| | | R | N/A | N/A | - | N/A | N/A | - | R | 0.01 | 7.1 | A | | |
| **Overall Intersection** | | **-** | | **N/A** | **-** | | **N/A** | **-** | **-** | | **30.2** | **C** | | |
| **SR-74 at Northbound I-215 Off-Ramp** | | | | Unsignalized | | | Unsignalized | | | | Signalized | | | Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in place for the 2012 opening year. |
| SR-74 | EB | L | 0.02 | 8.2 | A | 0.03 | 8.3 | A | L | 0.05 | 4.5 | A | | |
| | | T | N/A | N/A | - | N/A | N/A | - | T | 0.82 | 17.7 | B | | |
| | WB | T | N/A | N/A | - | N/A | N/A | - | T | 0.27 | 10.0 | A | | |
| Northbound I-215 Off-Ramp | SB | LR | 0.59 | 32.9 | D | 0.69 | 42.5 | E | LR | 0.46 | 21.4 | C | | |
| **Overall Intersection** | | **-** | | **N/A** | **-** | | **N/A** | **-** | **-** | | **16.2** | **B** | | |
| **SR-74 at Sherman Road** | | | | Unsignalized | | | Unsignalized | | | | Signalized | | | Installation of a new traffic signal to be completed by Caltrans as part of another program. The signal will be in ~~place~~ operation for the 2012 opening year. |
| SR-74 | EB | L | 0.07 | 10.4 | B | 0.08 | 10.5 | B | L | 0.18 | 6.0 | A | | |
| | | TR | N/A | N/A | **-** | N/A | N/A | **-** | TR | 0.82 | 17.8 | B | | |
| | WB | L | 0.19 | 13.4 | B | 0.21 | 14.5 | B | L | 0.41 | 10.1 | B | | |
| | | TR | N/A | N/A | **-** | N/A | N/A | **-** | TR | 0.60 | 12.8 | B | | |
| Sherman Road | NB | L | 1.48 | 563.9 | F | 2.00 | 854.1 | F | L | 0.12 | 18.9 | B | | |
| | | R | 0.39 | 18.6 | C | 0.42 | 20.6 | C | R | 0.46 | 21.6 | C | | |
| | SB | LR | 1.40 | 431.7 | F | 1.71 | 529.9 | F | LR | 0.19 | 19.2 | B | | |
| **Overall Intersection** | | **-** | | **N/A** | **-** | | N/A | - | **-** | | **15.8** | **B** | | |

### *4.11.5 Future Conditions*

In the future, it would be expected that the PVL would experience an increase in ridership to a total of 7,054 passengers during each of the AM and PM peak periods based on ridership projections (Parsons Brinckerhoff, 2009). RCTC also expects to identify additional funding to support the completion of the PVL full build out. Thus, when ridership increases and additional funding is identified, RCTC would construct two additional stations in the future, Ramona Station and UC Riverside Station, in addition to the four stations that would be completed by the opening year of 2012 (Hunter Park, Moreno Valley/March Field, Downtown Perris and South Perris stations).

The proposed UCR Station would be located north of Watkins Drive between Blaine Street and Mount Vernon Avenue. This station would not include a parking area. The proposed Ramona Station would be located south of Cajalco Expressway and east of Harvill Avenue; this station would have an associated parking area with a capacity of approximately 500 vehicles. It is also expected that the parking lots of the four opening year stations would be enlarged to accommodate projected increases in ridership, as summarized in Table 4.11-~~7~~ 10 below.

**Table 4.11-10**
**Station Parking Lot Capacities**

| Station | 2012 Opening Year | 2030 Horizon Year |
|---|---|---|
| Hunter Park | 480 | 570 |
| Moreno Valley/March Field | 445 | 660 |
| Downtown Perris | 440 | 740 |
| South Perris | 880 | 1,390 |

As the new stations and parking lot expansions are promulgated by RCTC as a result of increased ridership and the availability of funding, RCTC will prepare supplemental analyses for the purpose of identifying impacts and appropriate mitigation. The opening year stations would not be expanded, and additional stations would not be built unless RCTC identifies a need for and then, additional sources of funding. Therefore, when these conditions are met, RCTC will commit to preparation of new reviews under CEQA, and developing mitigation appropriate to future conditions. In this manner, RCTC can be responsive, and committed to undertaking its fair proportion of traffic mitigation measures related to the PVL.

### *4.11.6 Mitigation Measures*

- TT-1: *Cactus Avenue at Old 215 (for Moreno Valley/March Field Station)*

  Reduce north/southbound Old 215's maximum traffic signal green time to 15 seconds during the PM (5-6 PM) analysis hour. This would reduce delays for westbound Cactus Avenue's through movement from ~~244~~240 to ~~119~~116 seconds and improve the overall intersection LOS from LOS F with ~~152~~146 seconds of delay to LOS E with ~~76~~72 seconds of delay, while maintaining LOS C for Old 215.

- TT-2: *SR-74 (4th Street) at D Street (for Downtown Perris Station)*

  Reduce the maximum green time for the east/west~~Restripe north/south~~bound SR-74 left-turn phase~~D Street approaches~~ to 14 seconds during the PM (5-6 PM) analysis hour~~provide one left-turn and one through/right turn shared lane~~. The levels of service for north and southbound D Street's through/left-turn movements, and the overall intersection, would be improved beyond future levels of service without the project during the PM analysis hour with this mitigation measure.

- TT-3: *Bonnie Drive at southbound I-215 ramps (for South Perris Station)*

  Install a new traffic signal. This would improve eastbound Bonnie Drive's right-turn movement from LOS F to LOS B during the PM (5-6 PM) analysis hour and left-turn movement from LOS F to LOS C during the AM (6-7 AM) and PM analysis hours.

  *RCTC shall design the above-proposed improvements, and execute agreements with the affected jurisdictions to provide funding for the installation of the signals or to install the signals in conjunction with the development of the project. With these mitigation measures in place, the significant impacts of the proposed project at the three above-mentioned intersections will be eliminated (out of the six locations where significant impacts are expected). At the remaining three locations where significant impacts are expected (San Jacinto and Redlands Avenues, SR-74 at northbound I-215 Off-Ramp, and SR-74 at Sherman Road), traffic signals are planned to be installed by other projects (unrelated to the PVL) as part of the future condition without the project. Therefore, no mitigation measures will need to be implemented by the proposed PVL project at these intersections. However, in the event that the signalization of these three locations by other projects (unrelated to the PVL) does not occur prior to the 2012 opening year of the PVL, the installation of traffic signals at these additional locations will be incorporated as PVL project features.

- TT-4: RCTC shall ~~D~~develop a traffic management plan in consultation with local jurisdictions to ~~determine~~ minimize impacts to existing traffic levels of service. At a minimum, the traffic management plan shall address: detours~~ routes,~~; coordination with other construction projects (if applicable); length and timing of any street closures~~,~~; length and timing of any grade crossing closures; coordination with police and fire departments regarding changes in emergency access routes; temporary access routes~~,~~ and signage if any commercial properties are affected; and contact information for RCTC and its contractors.~~ RCTC will be responsible for development and enforcement of this measure.~~

*4.11.7 Mitigation Summary*

RCTC ~~will~~ shall design the above-proposed improvements, and execute agreements with the affected jurisdictions to provide funding for the installation of the signals, or to install the signals in conjunction with the development of the project. With these mitigation measures in place, the significant impacts of the proposed project at the three above mentioned intersections ~~would~~ will be eliminated (out of the six locations where significant impacts are expected, as shown in Table 4.11-9). At the remaining three locations where significant impacts are expected (San Jacinto and Redlands Avenues, SR-74 at northbound I-215 Off-Ramp, and SR-74 at Sherman Road), traffic signals are planned to be installed by other projects (unrelated to the PVL) as part of the future conditions without the project. Therefore, no additional mitigation measures will need to be implemented by the proposed PVL project at these intersections. However, in the event that the signalization of these intersections does not occur prior to the opening year of the

PVL, the installation of traffic signals at these additional locations will be incorporated as PVL project features. Comparison of future levels of service with and without the project, and with mitigation, is listed in Table 4.11-9.

~~In addition, traffic impacts during the construction period would be expected at intersections where traffic is diverted to in the course of partial and complete roadway and grade crossing closures, which could be mitigated as described in the Hazards and Hazardous Materials Section 4.7.~~

## 4.12 UTILITIES AND SERVICE SYSTEMS

This section evaluates the potential impacts associated with utilities and service systems related to the PVL project. Specifically, this section discusses power distribution (electricity), water supply, wastewater treatment, stormwater drainage and run-off, the existing and proposed PVL communications systems, and solid waste collection and removal, including recycling.

### *4.12.1 Environmental Setting*

*Power Distribution*

Electricity is supplied to the PVL corridor and surrounding area by Southern California Edison (SCE) and Riverside Public Utilities Department (RPUD). RPUD supplies electricity within the city of Riverside, while SCE supplies electricity throughout the remainder of the PVL corridor. Overhead electrical transmission lines are also located along the PVL corridor, generally along the outside edge of the ROW, and are used for local distribution.

*Water Supply*

Water is supplied to the area immediately adjacent to the Citrus Connection by the Riverside Public Utilities Service Area. The proposed Hunter Park area and Moreno Valley/March Field Station area would have water supplied by Western Municipal Water District (WMWD). WMWD's primary source of water is the Metropolitan Water District, with a secondary supply provided by the City of Riverside. The City of Perris Water District owns, operates, and maintains water lines near the proposed Downtown Perris Station.

During construction, water would be supplied by water trucks with supplies dependant upon location along the corridor.

*Wastewater Treatment*

Sanitary sewer systems within the PVL corridor are owned and maintained by four water and sewer districts. The WMWD and the Riverside Public Works Department cooperatively own and maintain the sanitary sewer system in the area around Hunter Park. Treatment in this area occurs at the Riverside Regional Water Quality Treatment Plant. The EMWD owns and maintains the sanitary sewer system located at the Moreno Valley/March Field Station, South Perris Station, and the Layover Facility. Near the Downtown Perris Station, the local sanitary sewer system is owned and maintained by the City of Perris Sewer District. The City of Perris Sewer District sewers discharge into EMWD trunk lines and the wastewater is processed at the Perris Valley Regional Water Reclamation Facility (PVRWRF) south of Case Road and west of the I-215 Freeway (City of Perris, 2005).

*Stormwater Drainage*

Stormwater drains within the PVL corridor are owned and maintained by RCTC along the SJBL alignment. Currently, stormwater runoff flows across the SJBL ROW from adjacent areas into a local storm drain system. The local stormwater drainage systems, known as the MS4, conveys the stormwater away from the ROW. This flow of stormwater would eventually discharge into the Santa Ana River from the northern portion of the project, or the San Jacinto River from the southern portion of the project. The San Jacinto River flow, if high enough, could eventually reach the San Ana River after flowing through Canyon Lake and Lake Elsinore.

The stormwater drainage from the station sites will connect into the local MS4's as follows: Marlborough station connects from an on-site catch basin via an underground pipe at the northern boundary of the project into the local MS4: Moreno Valley/March Field drains into an onsite detention basin and into the drainage channel located between the parking area and the platform; Downtown Perris connects to underground piping located near the center of the station; and South Perris and the Layover Facility utilize the drainage swale located in the ROW to drain into the San Jacinto River.

*Communications*

Currently on the SJBL alignment there are ~~17~~ 18 existing grade crossings (Table 4.12-1).

*Solid Waste Collection and Removal*

Currently local solid waste collected along the corridor is transported to the Robert A. Nelson Transfer Station, located on Agua Mansa Road in Riverside. This facility is owned by the County of Riverside. The waste is then transferred to either the Badlands Landfill in Moreno Valley or the El Sobrante Landfill located east of I-15 south of the City of Corona.

**Table 4.12-1**
**Existing Grade Crossings**

| Location | Existing Device Type |
|---|---|
| **Crossbuck Signs ("X" – shaped signs signifying a grade crossing)** | |
| Citrus Street, Riverside County and City of Riverside border, MP 0.57 | Two standard reflective signs. |
| Gernert/Poarch Road, Riverside County, MP 5.02 | Warning sign |
| San Jacinto Avenue, City of Perris, MP 18.05 | One standard crossbuck sign |
| West 5th Street, City of Perris, MP 18.95 | One standard crossbuck sign with concrete |
| West 6th Street, City of Perris, MP19.03 | One standard crossbuck sign |
| West 7th Street, City of Perris, MP 19.10 | One standard crossbuck sign |
| South D Street., City of Perris, MP 19.17 | One standard crossbuck sign |
| South Perris Street, City of Perris, MP 19.37 | One standard crossbuck sign |
| G Street, City of Perris, MP 19.68 | One standard crossbuck sign |
| East Ellis Avenue, City of Perris, MP 19.87 | One standard crossbuck sign |
| **Warning Lights/Bell** | |
| Spruce Street, City of Riverside, MP 2.02 | Two No. 8 flashers |
| ~~Mapes Road, City of Perris, MP 21.59~~ | ~~Two flashing warning signs~~ |
| **Gates** | |
| Palmyrita Avenue, City of Riverside, MP 1.00 | Two standard No. 9 gates[1] with flashing lights |
| Columbia Avenue, City of Riverside, MP 1.24 | Two standard No. 9 crossing gates for the existing tracks |
| Marlborough Avenue, City of Riverside, MP 1.50 | Two standard No. 9 gates with flashing lights |
| West Blaine and Watkins Drive, City of Riverside, MP 2.66 | Standard No. 9 gate with flashing lights |
| Mt. Vernon Avenue, City of Riverside, MP 3.41 | Four standard No. 9 gates with flashing lights |
| Box Springs-River Crest Drive, City of Riverside, MP 7.00 | Standard No. 9 gates with flashing lights |
| West 4th Street, City of Perris, MP 18.34 | Two standard No. 9A gates with flashing lights |
| Note: [1]Standard No. 9 gates refer to flashing light signals with automatic gates (CPUC, 2006). | |

### *4.12.2 Regulatory Setting*

Federal Policies and Regulations

*Clean Water Act*

The CWA is the primary federal law in the United States governing water pollution (33 USC 1251-1376). The CWA established the goals of eliminating releases to water of high amounts of toxic substances, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983. Under the CWA, the USEPA's Office of Waste Management works together with USEPA regions, states and tribes to regulate discharges into surface waters such as wetlands, lakes, rivers, estuaries, bays and oceans. Specifically, the Office of Waste Management focuses on control of water that is collected in discrete conveyances (also called point sources), including pipes, ditches, and sanitary or storm sewers (USEPA, 2009).

The Federal Water Pollution Control Act prohibits the discharge of any pollutant to navigable waters unless the discharge is authorized by a NPDES permit. Since 1990, operators of stormwater systems have been required to develop a stormwater management program designed to prevent harmful pollutants from being washed away by stormwater runoff and discharged into local water bodies. In California, the SARWQCB administers the NPDES permitting program (SARWQCB, 2009).

*United States Environmental Protection Agency*

USEPA defines solid waste as any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities (USEPA, 2009). "Other" wastes regulations are set forth in 40 CFR 273, including batteries, pesticides, and some conditionally exempt small quantity generators.

*Federal Transit Administration's Final Rule, Title 49 CFR 659*

Under Title 49 of CFR, the FTA published a set of regulations to create a state-managed safety and security oversight program for rail transit agencies not regulated by FRA. This regulation was published as "Rail Fixed Guideway Systems; State Safety Oversight" on December 27, 1995, and referred to as the SSO Rule or Part 659. FTA recently amended 49 CFR 659, publishing the revised Rule in the FR on April 29, 2005. The revised Rule adds clarifying sections, further specification concerning what the state must require to monitor safety and security of rail transit systems, and incorporates into the body of the regulation material previously incorporated by reference (FTA, 2006).

*Federal Rail Safety Improvement Act*

Under §202 of the Federal Rail Safety Improvement Act of 2008, by October 16, 2009, the Secretary of the U.S. Department of Transportation is to have identified ten states that have had the most grade crossing collisions on average over the past three years and require those states to submit grade crossing safety plans. The plans must identify specific solutions for improving safety at crossings, including highway-rail grade crossing closures or grade separations, and must focus on crossings that have experienced multiple accidents or are at high risk for such accidents. Because of the number of accidents recorded in the past, it is likely that California will be chosen as one of these states to provide safety plans under Federal Rail Safety Improvement Act (CPUC, 2009).

*Title 23, United States Code, §130*

Under 23 USC §130, California as well as all other states are required to maintain a survey of all of its highways to identify those grade crossings that may require grade separation, relocation, or protective devices (e.g., automatic crossing gates), and to establish and implement a schedule of projects for these purposes. The CPUC maintains such a database of crossings, and conducts an annual evaluation of crossing data to identify crossings where safety can be improved (CPUC, 2009).

<u>State Policies and Regulations</u>

*California Public Utilities Commission*

The CPUC is a state public utilities commission which regulates privately-owned utilities in the state of California, including electric power, telecommunications, natural gas and water companies. In addition, the CPUC regulates household goods movers, passenger transportation companies and grade crossing safety. The CPUC is the designated state oversight agency in California, in accordance with the FTA's Final Rule, Title 49 CFR 659, and effective May 5, 2007 (CPUC, 2009).

*CPUC General Order 95 and General Order 128*

The Commission's General Order 95 defines safe practices for utility poles and wiring. It defines safe separation between high voltage conductors, guy wires, cable television, and telephone cable. For example, GO-95 defines how high a telephone cable must pass over a roadway. It restricts attachments to poles to allow adequate, safe climbing space for personnel who work aloft. By ensuring an orderly and reliable system is used, risks to the public and track employees are reduced. A similar system is specified for underground utilities in the Commission's General Order 128.

*Title 27 of the California Code of Regulations*

Title 27 of the CCR, Division 2, is the SWRCBs regulations applicable to the discharge to land of waste that is not hazardous waste. All of the active landfills currently located in Riverside County are classified as Class III landfills; accepting only non hazardous and municipal solid wastes (California Integrated Waste Management Board, 2009).

*California Department of Water Resources*

The California Department of Water Resources (CDWR) manages California's water resources. The regulations overseen by CDWR regarding water service availability include the Urban Water Management Planning Act and Senate Bills (SB) 221 and 610. The California Act, adopted in 1983, requires all urban water suppliers within the state to prepare an Urban Water Management Plan and update them every five years (CDWR, 2003).

*California Integrated Waste Management Act*

The California Integrated Waste Management Act (PRC §40000 *et seq*.) requires municipalities to divert 25 percent of their solid waste from landfills to recycling facilities by 1995 and 50 percent by 2000.

<u>Local Policies and Regulations</u>

*Riverside Public Utilities Department Guidelines, Standards, and Policies*

RPUD provides electricity to most of the City of Riverside. SCE provides electricity to the other parts of the City and County of Riverside. RPUD has established its own set of guidelines, standards, and policies relating to the use and construction of electrical utilities for projects within the City limits. The City of Riverside General Plan Public Facilities and Infrastructure Element includes several applicable policies:

- Public Facilities Goal 6.2: Ensure that adequate back-up facilities are available to meet critical electrical power needs in the event of shortages or temporary outages.
- Plan Public Facilities Goal 6.3: Promote and encourage energy conservation.

*County of Riverside General Plan*

The Riverside County General Plan Land Use Element (2003) includes several applicable policies:

- Land Use Goal 1.6: Coordinate with local agencies, such as LAFCO, service providers and utilities, to ensure adequate service provision for new development.
- Land Use Goal 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, transportation systems, and fire/police/medical services.
- Land Use Goal 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.
- Land Use Goal 5.4: Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned ROW and permanent easements, whose true land use is that of "public facilities." This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps.

*City of Perris General Plan*

The City of Perris General Plan Conservation Element includes the following goals:

- Conservation Element Goal V – Water Supply:

  Provide an adequate water supply to support existing and future land uses, as anticipated in the Land Use Element.

- Conservation Element Goal VI – Water Quality:

  Achieve regional water quality objectives and protect the beneficial uses of the region's surface and groundwater.

*March Joint Powers Authority General Plan*

The March Joint Powers Authority General Plan Land Use Element includes several applicable policies:

Land Use Goal 15: In compliance with state laws, ensure solid waste collection, siting and construction of transfer and/or disposal facilities, operation of household hazardous waste disposal programs and education are consistent with the County Solid Waste Management Plan.

Land Use Goal 16: Adequate supplies of natural gas and electricity from utility purveyors and the availability of communications services shall be provided within the March JPA Planning Area.

Land Use Goal 17: Adequate flood control facilities shall be provided prior to, or concurrent with, development in order to protect the lives and property within the March JPA Planning Area.

*4.12.3 Thresholds of Significance*

According to the CEQA Guidelines, the threshold for significance for Utilities and Service Systems is defined by:

1. *Would the project exceed wastewater treatment requirements of the applicable RWQCB*

2. *Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects*

3. *Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects*

4. *Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

5. *Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments*

6. *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs*

7. *Would the project comply with Federal, State, and local statutes and regulations related to solid waste*

### *4.12.4 Project Impacts*

***Would the project exceed wastewater treatment requirements of the applicable RWQCB***

The proposed project does not intend to have restroom facilities at the proposed station sites. The only restroom facilities would be located on the trains themselves, and at the Layover Facility.

The toilets and other wastewater collected on the trains would be discharged into the sanitary sewer connection at the Layover Facility and treated at the PVRWRF. In addition, the Layover Facility would provide restroom facilities for approximately 70 crew members. The volume of waste generated by the trains and Layover Facility would not exceed wastewater treatment capacities established by SARWQCB (City of Perris, 2005); therefore, there will be no impacts related to wastewater treatment requirements.

During construction of the PVL, construction personnel would use rented portable restrooms and sinks, which would be transported to a wastewater treatment facility for proper treatment.

***Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects***

The project is expected to require water for landscaping at each of the station sites, and at the Layover Facility. The Layover Facility will require water for maintenance of landscaped areas, and the crew restroom facilities. The quantity of water necessary for the stations is expected to be very low since the landscaping will be drought tolerant. The project would not require the construction of new water treatment facilities, and therefore no impact is anticipated. The only wastewater generated by the project will be at the Layover Facility. The wastewater generated will be from the restrooms on the trains, and the crew facilities.

Since the source of wastewater is very limited, no new treatment facilities are necessary, nor are existing facilities required to expand. Therefore, no impact is anticipated.

***Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects***

In accordance with the requirements of the SWRCB, which administers the State's construction stormwater program, the proposed project, which will disturb more than one acre of soil, must obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (CGP). This CGP requires the preparation and implementation of a SWPPP to reduce or eliminate soil erosion. The SWPPP will identify BMPs to minimize erosion and sediment loss.

Parking lots will be constructed at each of the four proposed station sites. During construction of proposed parking lots, run-off water may contain sediments that may cause environmental effects to the stormwater drainage system. The parking lots at the proposed stations will consist of an underground drainage system, which will connect to the local stormwater drainage system. Parking lots at the Hunter Park Station option, March Field/Moreno Valley Station, and South Perris Station will each have an underground detention facility for stormwater associated with the drainage system, as a means to slow the influx of stormwater into the local stormwater drainage system. A stormwater detention basin will also be constructed at the Layover Facility to facilitate this same purpose.

Within the PVL corridor, there are 53 culverts of which approximately 30 would be replaced or reconstructed as part of the project. These would be replacements or extensions of existing culverts and therefore there would be no change in the current stormwater drainage patterns.

Because of the use of stormwater detention facilities, BMPs associated with the SWPPP, and replacement or reconstruction of culverts, there would be no impact in regards to stormwater drainage.

***Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed***

During construction of the PVL corridor, water trucks will supply water to the project. The use of water trucks is required during construction to comply with Fugitive Dust Rule 403. This water will be supplied by local sources.

When fully operational, the proposed project would require limited water supplies for landscape irrigation, an office for approximately 70 employees at the Layover Facility, and maintenance requirements. The proposed stations and Layover Facility would be landscaped using drought tolerant and low water demand plants. The irrigation systems at each of the proposed stations and Layover Facility would use recycled water from the local water providers. The Layover Facility will connect to an existing EMWD waterline for potable water near Case Road, which is adjacent to the site.

Because of the limited amounts of water needed for the Layover Facility and the use of recycled water for irrigation of landscaping and maintenance, there would be no impacts in regards to water supply for the project.

***Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments***

During construction of the PVL, construction personnel would use rented portable restrooms and sinks, which would be transported to a wastewater treatment facility for proper treatment.

The toilets and other wastewater collected on the trains would be discharged into the wastewater sewer system at the Layover Facility and treated at the PVRWRF. In addition, the Layover Facility would provide restroom facilities for approximately 70 crew members. The volume of waste generated by the trains and Layover Facility would not exceed wastewater treatment capacities. Therefore, there will be no impacts in regards to wastewater treatment capacities.

***Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs***

The project will rehabilitate the existing rail, create a new by-pass track, and build new stations and a Layover Facility. This work will generate limited solid waste because the rail and ties that will be removed will be reused within the overall rail system and not disposed of in a landfill. The remaining work will be new construction which will generate used concrete forms and other waste.

Limited amounts of solid waste would be generated by employees at the Layover Facility, train passengers and personnel, and maintenance personnel for the PVL. Although limited amounts of solid waste are anticipated during operation of the PVL, recycling programs developed by the cities of Riverside and Perris would be implemented at the proposed stations, and Layover Facility. Therefore, there will be no impacts related to solid waste disposal.

***Would the project comply with Federal, State, and local statutes and regulations related to solid waste***

The proposed project would comply with federal, state and local statutes and regulations related to solid waste, which includes recycling programs developed by the cities of Riverside and Perris. During construction, small quantities of non-recyclable solid waste, in the form of construction waste and other debris will be generated by the project. This material would be recycled, reused to the full extent practicable. Any remaining material would be disposed of at an approved Class III landfill in compliance with applicable rules and regulations. This includes the California Integrated Waste Management Act requirements for municipalities to divert 50% of their solid waste to recycling facilities by 2000.

During the operation and maintenance of the PVL, very small quantities of solid waste (miscellaneous litter and debris from the trains), proposed stations, and Layover Facility would be disposed at a Class III landfill in compliance with applicable rules and regulations. Therefore, no impacts would occur from the implementation of the project.

*4.12.5 Mitigation Measures*

There are no significant impacts, therefore, no mitigation measures are proposed.

# 5.0 OTHER ENVIRONMENTAL CONSIDERATIONS

In accordance with the CEQA Guidelines §§15126.2(c), 15126.2(d), and 15355, respectively, an EIR must identify and discuss any significant irreversible and irretrievable commitments of resources, significant growth-inducing effects, and significant cumulative impacts. These three areas of concern are referred to collectively as Other Environmental Considerations. The potential for significant irreversible and irretrievable commitment of resources, growth-inducing impacts, and cumulative impacts are discussed below.

The assessment of Other Environmental Considerations is generally limited to reasonable geographic boundaries and a specific time period. In the case of the PVL project, the study area boundaries are extended to include the effects of projects that could overlap with or contribute to Other Environmental Consequences associated with the PVL in 2012. Certain effects may be localized in nature, while others may be more regional in their potential effects. Both potentially adverse and beneficial effects are considered.

## 5.1 SIGNIFICANT IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

In accordance with CEQA Guidelines §15126.2(c), an EIR must identify any significant irreversible environmental changes that would be caused by the proposed project. For example, the use of nonrenewable resources, particularly mineral resources or land, either for construction or operations, may comprise an irreversible and irretrievable commitment of resources, though the significance could vary, given the circumstances of the project under review. Commitments of resources could be current, as well as future, the latter potentially associated with (i.e., being a secondary effect of) growth-inducing impacts discussed below in Section 5.2.

Construction and operation of the PVL would contribute to the depletion of resources, including renewable and non-renewable resources. Resources such as timber used in the construction of stations and other buildings, are generally considered renewable resources, and would be replenished over the lifetime of the project. Renewable resources would not be considered irreversibly or irretrievably committed. Non-renewable resources, however, such as diesel fuel, petroleum products, steel, concrete, copper, and other materials are typically considered to be in finite supply, and would not be replenished over the lifetime of the project.

As the PVL would be developed within an existing rail corridor, the commitment of land resources to the use has already been made historically, and the PVL would not require the commitment of similar resources elsewhere. Further, some existing track would be rehabilitated and reused, thus accounting for a reduction in the amount of steel from the amount typically required of a similar rail project. At the same time, by introducing new track and a revised line configuration, the PVL would ensure the continued usefulness of the historic commitments of existing rails, sidings and the warehousing properties they serve to which resources are already historically committed.

The general demand for some of the resources listed above may be expected to increase whether or not the PVL is developed. The PVL project would use less than the typical amount of steel required for a similar sized rail project.

Further, as the PVL is introduced to the region as a new mode of transportation, there would be a corresponding reduction in the number of automobile trips made in the region. Although the PVL would rely on petroleum resources to operate, it would result in a comparable or greater reduction in petroleum resources than would otherwise be utilized in the operation of automobiles driven without the PVL project.

Other demands for energy, as associated with the PVL, would be related to the basic operations of stations and facilities, and to the greater extent, the electrical draw for parking lot lighting. While these energy demands in the form of electricity generated from natural gas, would constitute a commitment of nonrenewable resources, the PVL would not contribute to a significant increase in the rate of natural gas depletion. Moreover, the energy needs of the PVL would be met by the available market energy, and so it is reasonable to conclude that energy not utilized for the PVL would be available for use by others.

The commitments of non-renewable resources to the construction and operation of the PVL would not be considered significant. Similar non-renewable resources demand would otherwise occur without the PVL and in some cases would comprise a net decrease in the use of non-renewable resources. It is inherent to the public service nature of the PVL, that such commitment of resources would constitute investments directed toward the benefit of the public, as well as the prevention of environmental impacts that could otherwise be associated with automobile pollution and additional highway construction and expansion. Therefore, a less than significant impact is identified for this issue area.

## 5.2 GROWTH-INDUCING IMPACTS

CEQA Guidelines §15126.2(d) requires a discussion of the potential growth-inducing impacts of a project. This discussion addresses how implementation of the project would foster economic or population growth, or the construction of additional housing, either directly or indirectly upon the surrounding environment.

The PVL constitutes the introduction of new infrastructure and services aimed at providing a new mode of access between existing origin and destination points along the I-215/SJBL corridor. It would not introduce new access to an area that was previously vacant or undeveloped, or remove access barriers. The PVL is contemplated as a new mode of transportation to serve populations already present in Riverside County, and accommodates the projected future population anticipated by regional and city plans.

Although the project is intended to reduce congestion on highways, this benefit does not rise to the level of removing an access barrier to growth. Accordingly, the project does not directly induce growth through the provision of housing or expansion of water infrastructure, and neither does it indirectly induce growth by removing an access barrier. To the contrary, the project is merely intended to partially address existing and anticipated growth that would occur even without the project. As such, the project has a less than significant impact on growth.

## 5.3 CUMULATIVE IMPACTS

A cumulative impact is defined in §15355 of the CEQA Guidelines as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Individually minor impacts, whether from a single project or multiple projects, may together amount to cumulative impacts. Consistent with the direction of CEQA Guidelines §15130(b)(1)(A), all past, present, or probably future projects which have impacts. There are 14 development projects in the area that are under construction or have recently been completed near the project area. The cumulative list is consistent with CEQA Guidelines Section 15130(b)(1)(A), which states that "a list of past, present, and probable future projects producing related or cumulative impacts, including if necessary, those projects outside the control of the agency" should be included in analysis of cumulative effects in the EIR. The information for the cumulative projects was garnered from interviews with county and city planning agencies (Appendix E), and shown in Figure 5.3-1. The cumulative projects shown here were also analyzed within the technical reports for air, noise and vibration, and traffic and include:

- *Riverside Grade Separations*, projects of the City of Riverside, includes three railroad grade-separations of the BNSF at 3rd Street, Columbia Avenue, and Iowa Avenue. These projects are scheduled to be completed between 2010 and 2013. The grade separation of Columbia Avenue and the BNSF railroad tracks would raise Columbia Avenue over the BNSF railroad between La Cadena Drive and Iowa Avenue. Similarly, the Iowa Avenue grade separation project would raise Iowa Avenue over the BNSF tracks between Palmyrita Avenue and Spring Street. These projects are expected to improve traffic circulation in the area. ~~short-term impacts related to construction.~~

- *Hunter Park Distribution Center* is a 520,000-square foot distribution center on the north side of Columbia Avenue and east of the ROW.

- *Perris Station Apartments* is a mixed use development that includes; 84 units of senior housing, 155,526 square feet of retail and office space, 77 parking spaces and 16,000 square feet of courtyard and open space.

- *The I-215 Freeway Widening Project* would be completed in three segments. These segments include I-215/SR-60 and Nuevo Road; between Nuevo Road and Scott Road, south of Perris; and between Scott Road and Murrieta Hot Springs Road.

- *The UCR Long Range Development Plan* contemplates planning and enhancements to the UCR campus. The most recent update of UCR's development plan projects an additional 7,105,691 square feet of classrooms, labs, dormitories and office spaces to be completed by 2016. Because the UCR Long Range Plan does not identify specific pieces to be complete by 2012, the entire program is assumed to be in place for the PVL's opening year.

- *Centerpointe Industrial and Business Park* project is located northeast of Cactus Avenue and Graham Street. This will be a 162-acre business park.

- *Meridian Business Park* (formerly known as *March Business Center*) project is located southwest of I-215 and Alessandro Boulevard on a 1,290-acre site. The project land uses consist primarily of industrial park, warehousing, research and development, and associated business support uses. It is planned to be constructed in three phases, two of which would be completed by 2012. The Moreno Valley/March Field Station is located within this business park.

- *Gateway Center* is an industrial/business park project on a 25-acre site on Day Street south of Alessandro Boulevard.

- *Cactus/Commerce Commercial Center* is a 16,000-square-foot commercial/retail development on Cactus Avenue between Day and Elsworth Streets.

- *March Lifecare Campus* is a development project including a mix of healthcare and ancillary uses, including hospitals, general and specialty medical offices, medical retail, research and education, a wellness center, senior center, independent/assisted-living facilities, skilled nursing facilities, and related support facilities. The project will be developed in five planning areas, of which the first two are expected to be developed by 2011, and include a 50-bed hospital, 660 units of institutional residential, 190,000 square feet of medical office, 200,000 square feet of research and education, and 210,000 square feet of retail land uses. The remaining planning areas will be developed over the next 20 to 25 years.

- *The Venue at Perris* development project is located on the northeast corner of I-215 and Redlands Avenue. This will include a movie theater, home improvement superstore, discount superstore, and other retail space.

- *Perris Marketplace* project is a 520,000 square-foot retail center located on the west side of Perris Boulevard, north of Nuevo Road. This project includes a discount superstore with a gas station, a home improvement store, restaurants, and specialty retail space.

- *Towne Center* project is a 470,000 square-foot retail center located in the southeastern portion of the City of Perris, on the southeast corner of I-215 and Ethanac Road. It would be anchored by a 220,000 square-foot big-box store, and would also include specialty retail space, restaurants, and a hotel. The development is expected to be opened in 2009.

- *Perris Crossing* (formerly known as *Ethanac Road Retail Center*) development is a 625,000 square-foot retail center located on the north side of Ethanac Road, west of Case Road. The retail center would include approximately 600,000 square feet of retail and restaurant uses, a service station, and 24,000 square feet of office uses.

### *5.3.1 Aesthetics*

Implementation of the proposed project in conjunction with related projects within the area, would cumulatively add to the loss of vacant land and the conversion of undeveloped areas for the station sites. The station sites are relatively small size and when viewed in the context of the twenty one mile rail corridor should be viewed as de minimus reductions in vacant land.

There is lighting proposed at the four station sites along the rail corridor. During service hours the lighting is provided for security at the parking areas and boarding platforms. After hours the lighting will cycle in the parking areas so that half the lights are off at any one time. This allows for energy savings. The lighting will be an increase over existing levels, but the stations are located in areas of exiting ambient light resulting from existing commercial building, adjacent street and freeway interchange lighting, and lighting from existing industrial facilities. This small increase in ambient night lighting would not be in areas of sensitive receptors and therefore would not cumulatively contribute to a significant impact in aesthetics in relation to the identified projects.

### *5.3.2 Agricultural Resources*

Implementation of the proposed project will not cumulatively impact agricultural resources. The station sites are currently designated for development (see previous list) within the local planning documents. Even if the proposed project does not proceed the agricultural lands will be developed regardless, and therefore this will not be cumulatively significant.

### *5.3.3 Air Quality*

While the other transit and traffic projects planned for the region and noted above may on their own or together impact air quality, any potential impacts associated with these projects would not be induced or exacerbated by the PVL. Rather, the PVL would reduce some trip-making that now occurs via automobile, resulting in a corresponding drop in Vehicle Miles Traveled (VMT) and a concomitant improvement in air quality.

The analysis of MSAT emissions indicates negligible direct emissions, and the cumulative contribution of the operations of SCRRA/Metrolink engines along the PVL would also not result in cumulative emissions impact.

The proposed rail service would result in a significant decrease in CO and GHG emissions, offsetting to a very limited degree the additional VMT and GHG directly and indirectly produced within the region. Air quality impacts from construction activities are not significant. In context with respect to cumulative air quality impacts from construction activities along the corridor, including adjacent unrelated development projects are also not significant due to the time and distance in those projects and the expected construction of the PVL.

Although the total air quality improvement is small compared to the generation of pollutants throughout the region, the introduction of commuter rail service provides an ongoing opportunity for vehicle trip reduction and air quality improvement. Consequently, the PVL will not result a cumulatively significant impact.

<u>Greenhouse Gases</u>

Implementation of the proposed project in conjunction with related projects within the area, would not cumulatively add to the regional air pollution. Construction activities associated with the proposed project could result in temporary construction related cumulative contributions. However, all cumulative projects would be subject to required best management practices for construction, it is anticipated that construction emissions would not be cumulatively significant. On an operational level, the project will contribute to regional air emission through commuter train use, although this would be less than the corresponding personal vehicle usage. Therefore no cumulative air quality impacts would occur as the project would occur as the project is consistent with the Regional Air Quality Strategy (RAQS) for the region which is based on General Plan land uses, and is anticipated within the General Plans within the corridor.

The production of energy is one of the major generators of greenhouse gases (GHGs). Therefore, energy usage by the proposed project is a consideration in addressing project impacts to climate change. The proposed project is in compliance with required energy efficiency programs, and also proposes several design features that will reduce GHG emissions that could result in risks associated with climate change. The proposed project is required to conform to Title 24, which is the California Building Code that governs all aspects of building construction. Standards mandating energy efficiency measures in new construction are included in Part 6 of the code. The Energy Efficiency Standards require mandatory measures to be installed in new construction. These standards are designed to: (1) respond to California's energy crisis to reduce energy bills, increase energy delivery system reliability, and contribute to an improved economic condition for the state; (2) respond to the Assembly Bill (AB) 970 (Statutes of 2000) urgency legislation to adopt and implement updated and cost-effective building energy efficiency standards; (3) respond to the Senate Bill (SB) 5X (Statutes of 2001) urgency legislation to adopt energy efficiency building standards for outdoor lighting; and (4) emphasize energy efficiency measures that save energy at peak periods and seasons, improve the quality of installation of energy efficiency measures, incorporate recent publicly funded building science research, and collaborate with California utilities to incorporate results of appropriate market incentive programs for specific technologies. Accordingly, this analysis shows that pursuant to Appendix F of the CEQA Guidelines (Energy Conservation) the proposed project will not result in the wasteful or inefficient use of energy.

<u>Public Health</u>

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 to 35 percent under the lower warming range to 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. GHG emissions from the project are almost entirely attributable to the consumption of energy, particularly fossil fuels, and the proposed project has incorporated project features and programs to reduce the amount of energy used, as described above. The proposed project also provides close proximity to a variety of alternative mass transit options that would reduce vehicular trips and their corresponding generation of GHGs. In addition to increased air pollution, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90° F in Los Angeles. Because of similar climate patterns and its proximity to Riverside County, it can be assumed that the number of high heat days in Los Angeles would be similar to Riverside County. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

### *5.3.4 Biological Resources*

Implementation of the proposed project, within and existing rail corridor, is not anticipated to cumulatively add to the loss of vegetation communities, and common plant and wildlife species. The project would, however, be consistent with all the policies and guidelines of the Western Riverside MSHCP. The MSHCP is a long-range conservation effort with which all future projects must be consistent. Since the proposed project is consistent with the MSHCP, no cumulative impact to biological resources is identified. Other projects in the area would also be required to be consistent with the MSHCP and as such cumulative impacts are less than significant.

*5.3.5 Cultural Resources:*

With more development in the County there is an increased possibility of encountering historical, archaeological, and/or paleontological resources. However, mitigation measures would be implemented for the proposed project and other projects subject to CEQA. Through recordation and curation of resources to provide the public and historians the opportunity to review these resources, the proposed project and other development in the area would not result in a cumulatively significant impact.

*5.3.6 Geology and Soils:*

The PVL project, in conjunction with past, present, and reasonably foreseeable future projects would not contribute to a cumulative impact to geology and/or soils, as all impacts are site specific. Although project-level impacts may be considered significant and/or potentially significant for this or other projects, these impacts would be mitigated on a project specific basis to below a level of significance. Therefore the PVL project would not contribute to a cumulative impact to geology or soils. A less than significant impact is identified.

*5.3.7 Hazards and Hazardous Materials:*

Implementation of the proposed project in conjunction with other development in the area would not result in a cumulatively significant impact for hazardous materials since all future developments in the area would be subject to the same local, regional, state, and federal regulations. These regulations require individual site evaluation and clean up, and therefore would not contribute cumulatively. As with the proposed project, environmental review would be required for future projects and compliance with County of Riverside Department of Environmental Health regulations would be necessary. Therefore, the proposed project would result in a less than significant cumulative impact.

*5.3.8 Hydrology and Water Quality:*

The proposed project, in conjunction with past, present, and reasonably foreseeable future projects is not anticipated to result in a cumulative impact to hydrology or water quality. The EPA requires projects indicate a “no-rise” in flood elevations resulting from the project development (whether one or all on the list) within the flood hazard zone, thus no impacts to hydrology. Additionally all projects in RWQCB Region 8 are required to meet the current stormwater permit requirements. These permit requirements include BMP provisions that ensure no cumulative water quality impacts.

Under the higher warming scenario, it is anticipated for sea level to rise 4 to 30 inches in southern California by 2100. In general, sea level elevation change of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

Changes in climate would increase the risk of flooding and erosion from sea level rise or changes in precipitation, creating different drainage needs. The proposed project is not at risk of flooding as a result of sea level rise; however, localized flooding does occur along the San Jacinto River and could increase in the future because of a change in precipitation.

Changes in precipitation will alter the sources of water that currently serve southern California. A network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River to southern California. The current distribution system relies on the Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. Under the lower warming scenario, snowpack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snowpack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack would pose challenges to water supply managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities. The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta- a major state fresh water supply. Ultimately, however, and as discussed previously, the project will not result in any cumulatively considerable GHG impacts. Thus, any impacts are less than significant.

~~Climate change is defined by the State of California as a global effect, not susceptible to full mitigation by any proposed project within the state. There is no de minimis threshold established for the reduction of GHG on a project level, and no comprehensive program, even on a statewide level, specifically targeting the emission of GHG, or exposure to risks associated with global warming, in which the project could participate. In the absence of such yardsticks to measure effective participation in the effort to reduce climate change risks, the incremental contribution of the project to climate change is considered potentially significant and unavoidable. The overall project will reduce greenhouse gas emissions by moving people from individual vehicles to mass transit, however, these reductions would not be enough to reduce the cumulative impact.~~

*5.3.9 Land Use and Planning:*

Riverside County has adopted the RCIP General Plan to coordinate various aspects of the long-range planning process. As a part of this effort three plans have been created, including the MSHCP, the CETAP, and a Riverside County General Plan. The General Plan is designed to direct future land use decisions throughout Riverside County. It would combine the MSHCP and the CETAP recommendations along with land use, safety, noise, housing, and air quality guidelines. The plan advocates the extension of the Riverside rail service corridor along the SJBL.

The overall growth of Riverside County and individual communities is driven by market forces, employment, the cost of housing, and availability of land. The location, types and amounts of development are directed and shaped by local jurisdictions through their land use powers. The PVL is contemplated in the land use elements of the Perris and Riverside General Plans, as well as the County's General Plan; as such, the introduction of commuter rail service may have an influence on the types and timing of development, allowing local jurisdictions to develop more transit-oriented development as part of specific area plans. The PVL is expected to accommodate existing transportation demand that exists within the I-215/SJBL alignment, and so, from a cumulative impact perspective, the proposed commuter rail service would not generate any new development. Further, the UCR Long Range Development Plan, Perris Downtown Improvements, March Lifecare Village, various planned business parks and retail centers, and transit and traffic improvements would not be affected by the PVL.

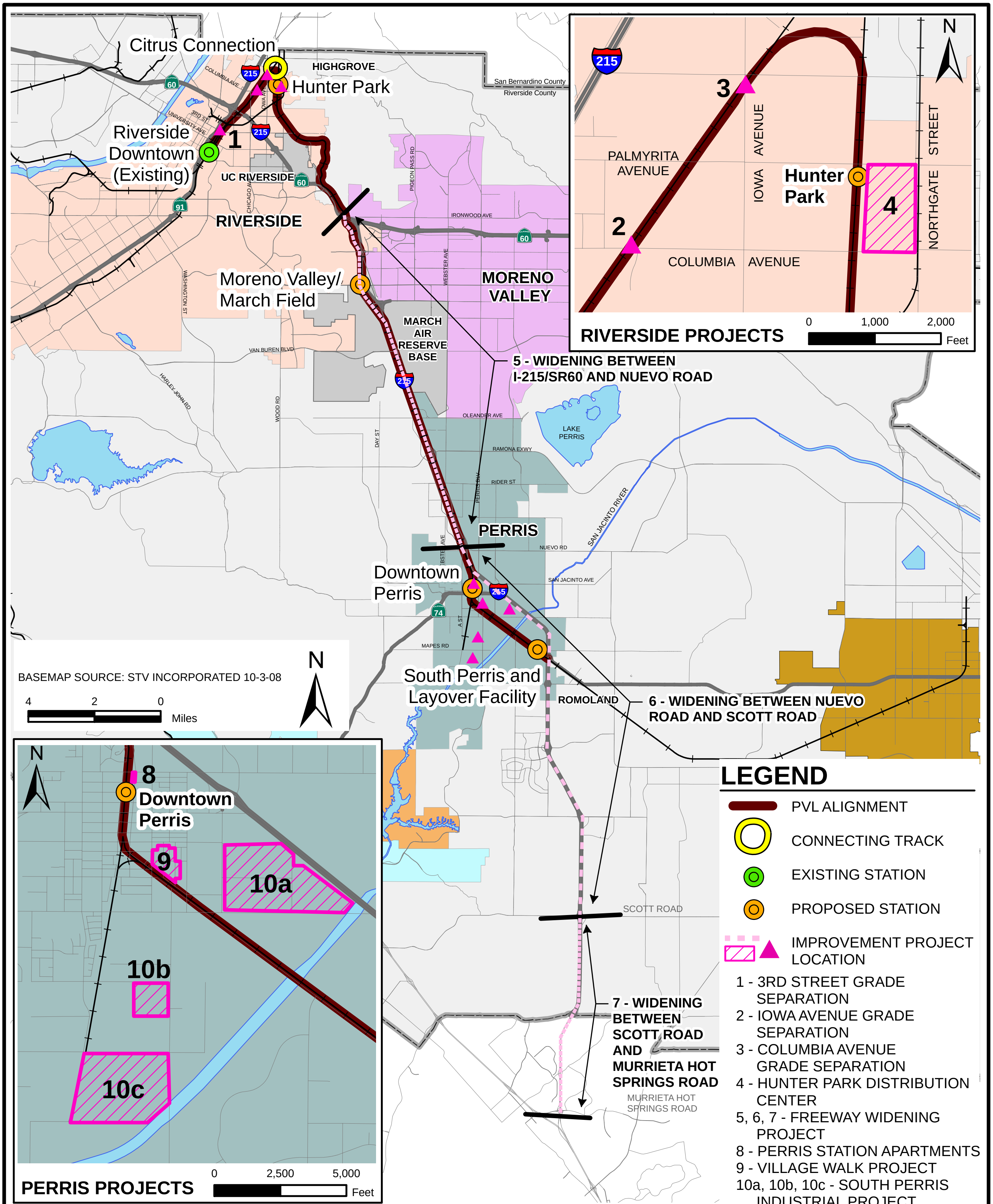
Therefore, no cumulative impacts on land use and zoning would be expected as a result of the introduction of PVL service.

*~~5.3.9~~5.3.10 Noise:*

Implementation of the PVL project, in conjunction with cumulative projects identified would incrementally increase noise levels in the region. During construction of the PVL project and cumulative projects, it is not anticipated that a cumulative construction noise impact would occur because construction activities would not be concurrent and in proximity to the PVL project. Therefore, construction noise from the PVL project and cumulative projects would not accumulate to result in a significant cumulative construction impact. During operation of the PVL project the permanent increase in ambient noise is not considered substantial because it is less than 3.0 dBA. Therefore the PVL project would not substantially contribute to noise level increases in the region. A less than significant cumulative operational impact is identified. The PVL project would not result in significant cumulative noise impacts.

*~~5.3.10~~5.3.11 Utilities and Service Systems:*

Development of the project, in conjunction with other past, present, or reasonably foreseeable future projects is not anticipated to result in a cumulative impact to utilities and service systems. As part of the engineering design for the project, capacity for utilities and service systems is analyzed in conjunction with the service provider to ensure adequate capacity for both this project as well as other projects related to the capacity of the overall systems. Therefore, the PVL project would not contribute to a cumulative impact to utility and service systems. A less than significant impact is identified.

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*5.3.11 Transportation and Traffic*

Other transportation projects, as noted above, are expected to be complete by 2012, with the effect of accommodating anticipated development and addressing select traffic flow problems that currently exist. The traffic analyses conducted for the PVL included these projects and concluded that no unmitigatable significant adverse impacts to traffic and parking would result from the PVL. Consequently, the introduction of the PVL would neither improve nor deteriorate the effectiveness of these other transportation projects.

Further, the project could create a cumulative benefit through small improvements to regional traffic flow; the diversion of vehicle trips to PVL ridership would result in a measurable reduction in VMT. This improved traffic flow, however, may not be represented as a net improvement to LOS along the regional arteries.

Overall, the PVL may result in beneficial cumulative impacts, including improved mobility and access for residents, workers and visitors, support of economic and community development in the region.

*5.3.12 Construction Impacts*

There is a potential for construction of the PVL to overlap construction of the I-215 widenings and other development projects detailed above. If concurrent cumulative construction occurs, there may be the potential for construction-related impacts. However, each project is bound to comply with SCAQMD construction air quality requirements; would be generally contained and localized in nature; and would also need to provide for appropriate maintenance and protection of traffic, under the direction and authority of the approving city. Further, construction-related impacts are, by nature, localized and limited in duration; therefore, either alone or in combination these projects, in compliance with applicable regulations, would not be expected to result in cumulative construction-related impacts.

Construction of the commuter rail elements would include BMP measures required to assure that activities do not exceed SCAQMD quarterly impact thresholds. Measures to control fugitive dust would be used to avoid violation of the SCAQMD $PM_{10}$ criterion, and the proposed sequencing of construction activities would avoid violation of the $NO_X$ criterion. By compliance with these mitigation measures, the proposed project would avoid exceeding SCAQMD criteria and reduce the potential for cumulative construction period impacts. Further, traffic management plans are required, so that the overall potential for cumulative traffic impacts would be reduced. Therefore, no cumulative impacts associated with construction activities would occur.

# 6.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

The following is a discussion of the environmental effects that were determined not to be significant based on the analysis completed in the Initial Study (Appendix B).

## 6.1 MINERAL RESOURCES

According to the City of Riverside General Plan (2007), the General Plan of the March JPA (2003), and the City of Perris General Plan (2005), there are no identified mineral resources within or adjacent to the PVL corridor. Based on the General Plan information, implementation of the proposed project would not directly or indirectly result in the loss of availability of a known mineral resource of regional or state value.

According to the Riverside County General Plan (2008), the project corridor extends through an area classified by the California State Mining and Geology Board (2007) as Mineral Resource Zone 3. This classification indicates that there is available geologic information indicating that mineral deposits are likely to exist; however, the significance of the deposit is undetermined. None of the local land use plans indicate that a locally important mineral resource recovery site exists within the PVL corridor and therefore, implementation of the project will have no impact on mineral resources.

## 6.2 POPULATION AND HOUSING

No residential or commercial construction is proposed as part of the PVL project. The proposed project would enhance transportation infrastructure by extending commuter rail service to additional portions of Riverside County. The PVL project is expected to accommodate a portion of the existing transportation demand within Riverside County, but would not be expected to directly or indirectly induce or alter the population growth within these communities.

Because the proposed project would be limited to the existing SJBL ROW, with limited acquisition of properties not used for residential purposes, there is no potential for the project to displace substantial numbers of existing housing. The proposed PVL project would also not displace a substantial number of people, which would necessitate the construction of replacement housing elsewhere and therefore, implementation of the project will have no impact on population and housing.

## 6.3 PUBLIC SERVICES

The proposed project involves the implementation of a commuter rail service along existing rail lines and does not include residential or commercial components that would permanently increase human presence in the area. The commuter rail would not encourage more people to enter the area; it would only serve to provide an alternate mode of transportation to people currently commuting. Accordingly, additional public facilities, such as schools and parks, would not be required to accommodate the PVL project.

As part of the proposed project, two grade crossings (Poarch Road at MP 5.02, 6th Street and at MP 19.03) would be closed and 15 grade crossings would be enhanced to facilitate train movements and safe traffic flow. The Poarch Road crossing is currently located along a portion of the SJBL alignment that is adjacent to Box Springs Mountain Reserve. Since there are two other crossings nearby that provide access to the area, the closure of the Poarch Road crossing would not create a need for additional public services in the area. In its current configuration, the Poarch Road grade crossing does not meet applicable design and safety standards. Poarch Road will continue to be accessible to emergency vehicles only (with a locked gate). ~~Additionally, this crossing is unsafe and cannot be improved without considerable expense. Regardless of the PVL project, it should be closed.~~The 6th Street crossing is located in downtown Perris between the 4th Street and 7th Street crossings. The 6th Street grade crossing is planned to be closed to vehicles but would still be accessible by pedestrians to cross. Because nearby crossings are within a few blocks, the closing of the 6th Street crossing would not create a need for additional public services in the area.

In addition, the northern end of Commercial Street would be closed to the public (with locked gates) where it intersects with D Street and Perris Boulevard, which would allow access to emergency vehicles only. This closure is necessary due to potential safety issues at the tracks as the turning movements involve an acute angle and can present the motorist with limited sight distance. Although this closure is expected to affect fewer than five vehicles during any one hour, 9th Street, which is currently a dirt road, would be paved to accommodate local property access. As there would be little inconvenience to the current low volumes along Commercial Street, and motorists can access Commercial Street via South Perris Boulevard less than one-quarter mile south of D Street, the closure of Commercial Street would not create a need for additional public services in the area.

At the remaining 15 grade crossings, 30 seconds prior to the arrival of a train at each crossing, the lights would begin to flash and the bells would commence ringing for a period of three to five seconds before the gates come down. The gates would then descend for a period of 12-15 seconds and reach the fully horizontal position anywhere from 15-20 seconds after the lights begin to flash. The gates would remain horizontal for a period of 10-15 seconds prior to the train entering the crossing, and once the train leaves the crossing, the gates would remain down for an additional five seconds before ascending to its upright position.

Emergency access from one side of the tracks to the other side would not be significantly impacted because the gates would only be fully closed for approximately 20 seconds at a time. Therefore, the addition of commuter trains would not create a need for additional public services in the area. Local police and fire departments would be notified of any temporary or permanent closures to ensure that adequate emergency access is maintained. Because the proposed project would not increase the demand for fire, police, schools, parks, and other facilities, no impact on these public services is anticipated.

## 6.4 RECREATION

North Park, Hunter Park, Highland Park, Box Springs Mountain Reserve, Quail Run Open Space, Sycamore Canyon Wilderness Park, Motte Rimrock Reserve, Russell Stewart Park, Metz Park, Foss Field Park, and Banta Beatty Park are located in the vicinity of the proposed PVL project. The proposed project does not include any elements that would increase the use of these existing neighborhood and regional parks or other recreational facilities. Additionally, implementation of the project would not encroach upon any existing parks or facilities.

Therefore, parks and recreational facilities within the area would not substantially deteriorate due to this project. There would be no adverse physical effect on the environment due to the construction, operation, and maintenance of the PVL near recreational facilities.

# 7.0 REPORT PREPARATION

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