I-2-A, Summary of Environmental Impacts and Mitigation Matrix

The following table identifies significant environmental impacts resulting from the Project along with applicable mitigation, pursuant to the *CEQA Guidelines* Section 15123(b)(1). The table also identifies the monitoring/reporting method and party responsible for verifying compliance or implementation of each mitigation measure as required by Section 15097 of the *CEQA Guidelines*. The parties responsible for implementing the mitigation measures are indicated below.

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
Agricultural Resources	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), or involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.	No feasible mitigation exists to reduce or eliminate the conversion of Farmland.	N/A	N/A	Significant – requires Statement of Overriding Considerations
In order to reduce NO_x, PM-10emissions from project construction, the following mitigation measures shall be implemented:					
Air Quality	Violate air quality standards, contribute to air quality violation, or result in a cumulatively considerable increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality	**MM Air 1:** During construction, mobile construction equipment will be properly maintained according to manufacturers' specifications at an off-site location, which includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on site during construction.	During Construction	Contractor and City of San Jacinto	Significant – requires Statement of Overriding Considerations

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
	standard.				
Air Quality	Violate air quality standards, contribute to air quality violation, or result in a cumulatively considerable increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	**MM Air 2:** During construction, all vehicles shall be prohibited from idling in excess of five minutes, both on and off site.	During Construction	Contractor and City of San Jacinto	Significant – requires Statement of Overriding Considerations
Air Quality	Violate air quality standards, contribute to air quality violation, or result in a cumulatively considerable increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	**MM Air 3:** Construction parking shall be configured to minimize traffic interference.	During Construction	Contractor and City of San Jacinto	Significant – requires Statement of Overriding Considerations

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
Air Quality	Violate air quality standards, contribute to air quality violation, or result in a cumulatively considerable increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	**MM Air 4:** The Project shall be required by contract specification to include construction equipment engines that meet or exceed Tier 3 standards. Consideration will be given to contractor's that provide proof that SCAQMD's SOON Program (and/or other applicable grant programs) have been applied for funding. Contract specifications shall be included in project construction documents, which shall be reviewed by the City prior to awarding the construction contract. A copy of each unit's certified tier specification, best available control technology (BACT) documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable piece of equipment.	Prior to awarding the construction contract.	Contractor and City of San Jacinto	Significant – requires Statement of Overriding Considerations
Air Quality	Violate air quality standards, contribute to air quality violation, or result in a cumulatively considerable increase in any criteria pollutant for which the project region is non-attainment under applicable federal or stat ambient air quality standards.	**MM Air 5:** All dump trucks used for soil hauling during Project construction shall comply with either 2007 or 2010 engine emission standard pursuant to Title 13, Section 2025(d). Contract specifications shall be included in Project construction documents, which shall be reviewed by the City prior to awarding the construction contract.	Prior to awarding the construction contract	Contractor and City of San Jacinto	Significant requires Statement of Overriding Considerations
Biological Resources	Conflict with the provisions of an adopted Habitat	**MM Bio 1:** A pre-construction survey will be conducted prior to initiation of project construction activities within suitable habitat	Within 30-days prior to construction start	Qualified Biologist and	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
	Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan.	of the burrowing owl. Objective 6 of the MSHCP species-specific burrowing owl objectives states that pre-construction presence/absence surveys for the burrowing owl will be conducted where suitable habitat is present. Surveys will be conducted within 30 days prior to disturbance. If burrowing owls are detected, then passive relocation (use of one-way doors and collapse of burrows) will occur outside the nesting season. Take of active nests will be avoided.		City of San Jacinto	
Biological Resources	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan.	**MM Bio 2:** To reduce impacts associated with temporary construction activities on sensitive species and habitats, Standard Best Management Practices and Construction Guidelines, as outlined in Volume I Appendix C and Section 7.5.3 of the MSHCP, respectively, shall be implemented where technically feasible.	Within 30-days prior to construction start	Qualified Biologist and City of San Jacinto	Less than significant
Biological Resources	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 the California Department of Fish and Game or the U.S. Fish	**MM Bio 1:** A pre-construction survey will be conducted prior to initiation of project construction activities within suitable habitat of the burrowing owl. Objective 6 of the MSHCP species-specific burrowing owl objectives states that pre-construction presence/absence surveys for the burrowing owl will be conducted where suitable habitat is present. Surveys will be conducted within 30 days prior to disturbance. If burrowing owls are detected, then passive relocation (use of one-way doors and collapse of burrows) will occur outside the nesting	Within 30-days prior to construction start	Qualified Biologist and City of San Jacinto	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
	and Wildlife Service.	season. Take of active nests will be avoided.			
Biological Resources	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 the California Department of Fish and Game or the U.S. Fish and Wildlife Service.	**MM Bio 2:** To reduce impacts associated with temporary construction activities on sensitive species and habitats, Standard Best Management Practices and Construction Guidelines, as outlined in Volume I Appendix C and Section 7.5.3 of the MSHCP, respectively, shall be implemented where technically feasible.	Within 30-days prior to construction start	Qualified Biologist and City of San Jacinto	Less than significant
Cultural Resources	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the *CEQA Guidelines.*	**MM Cultural 1:** Although the technical studies completed for the project determined that it was highly unlikely that the project site contains significant archaeological resources, should any unknown cultural and/or archaeological resources be accidentally discovered during construction, construction activities shall be moved to other parts of the project site and a qualified archaeologist shall be contacted to determine the significance of these resources. If the find is determined to be an historical or unique archaeological resource, as defined in Section 15064.5 of the *CEQA Guidelines*, the City shall enter into a	During Construction	Qualified Archaeologist and City of San Jacinto	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
		Treatment and Disposition Agreement (TDA) with Soboba to address treatment and disposition of archaeological and cultural resources and human remains associated with Soboba. Tribal monitors, including those from Soboba, may be allowed to monitor, at such tribe's sole cost and expense, all grading, excavation, and ground-disturbing activities. Following execution of the TDA by the City and Soboba, the TDA will be incorporated by reference into the construction specifications. Any artifacts collected or recovered shall be cleaned, identified, catalogued, analyzed, and prepared for curation at an appropriate repository with permanent retrievable storage to allow for additional research in the future. Site records or site record updates (as appropriate) shall be prepared and submitted to the Eastern Information Center as a permanent record of the discovery.			
Cultural Resources	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**MM Cultural 2a:** Earth-moving activities encountering soils that are identified as Pleistoceneage or older alluvium, by the representative of the soils engineer, shall be monitored by a qualified paleontological monitor. Continuous paleontological monitoring should be restricted to undisturbed older alluvium, which might be present below the surface. The monitor should be prepared to salvage fossils as they are unearthed to avoid construction delays. The monitor should also remove samples of sediments that are likely to contain the	During construction – Grading activities	Qualified Paleontologic Monitor and City of San Jacinto	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
		remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading equipment to allow for removal of abundant or large specimens.			
Cultural Resources	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**MM Cultural 2b:** All recovered paleontological specimens shall be prepared and stabilized for identification and permanent preservation, including washing of sediment samples to recover small invertebrates and vertebrates, potentially leading to curation in perpetuity in a facility that meets the standards of the State of California, *Guidelines for the Curation of Archaeological Collections* (OHP 1993) and *36 CFR 79*. Mitigation of adverse impacts to significant paleontologic resources is not complete until the curation process has been fully completed and documented.	During construction – Grading activities	Qualified Paleontologic Monitor and City of San Jacinto	Less than significant
Cultural Resources	The project would disturb any human remains, including those interred outside of formal cemeteries.	N/A	N/A	N/A	N/A
Geology and Soils	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, strong seismic ground shaking,	**MM Geo 1:** A minimum mandatory removal and replacement of all existing fills and at least the upper 36 inches of existing native soil along the levee alignments shall be completed. The bottom of all sub-excavations shall be observed and approved by the engineering geologist prior to placement of fill to verify the presence of competent material. In addition, any	During Construction – Grading activities	Contractor and City of San Jacinto	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
	seismic-related ground failure, including liquefaction, or from being located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	unsuitable fills and/or disturbed soils encountered during construction shall be completely removed and cleaned of significant deleterious materials prior to reusing as compacted fill.			
Geology and Soils		**MM Geo 2:** Due to the shallow water table, free water may exist in localized excavation areas. The need for dewatering in localized areas shall be anticipated during construction. The contractor shall design and install an appropriate dewatering system during construction, if necessary, and the applicable permit from RWQCB shall be obtained.	During Construction – Grading activities	Contractor and City of San Jacinto	Less than significant
Geology and Soils		**MM Geo 3:** In order to ensure that adequate freeboard is maintained, after a major seismic event the levee top elevations shall be surveyed and the integrity of the concrete liner shall be checked. To ensure that adequate gross stability of the levee embankment is maintained, after major flood episodes the condition of the landside slopes of the concrete liner shall be checked and promptly repaired as necessary.	During Construction – Grading activities	Contractor and City of San Jacinto	Less than significant
Hazards/	In the unlikely event	**MM Hazardous 1:** If previously unknown	During construction or	Qualified	Less than

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
Hazardous Materials	unknown hazardous wastes/materials are encountered during construction, any impacts would be mitigated.	hazardous waste/materials are encountered in the field during construction, ground disturbing activities in the vicinity of the discovery shall cease until a qualified hazardous materials management specialist can assess the potentially hazardous substances and, if necessary, develop appropriate management measures for the treatment and disposal of the materials in accordance with applicable laws and regulations set by the appropriate regulatory agencies.	ground disturbing activities	hazardous materials management specialist	significant
Hydrology and Water Quality	Impacts found to be less than significant without mitigation measures.	N/A	N/A	N/A	N/A
Land Use / Planning	Impacts found to be less than significant without mitigation measures.	N/A	N/A	N/A	N/A
Noise	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	**MM Noise 1:** To prevent construction-related noise, including that occurring within the City of San Jacinto and unincorporated Riverside County jurisdictions, from disturbing sensitive receptors during the evening hours, the following restrictions shall be observed in accordance with the City of San Jacinto Municipal Code, Section 8.40.090, A & B, which state: A. Weekdays. No person, while engaged in construction, remodeling, digging, grading, demolition, or any other related building activity, shall operate any tool,	During Construction	Contractor and District~~City of San Jacinto~~	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
		equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace office, on any weekday except between the hours of 7:30 a.m. and 6:00 p.m.; and B. Weekends and Holidays. No person, while engaged in construction, remodeling, digging, grading, demolition or any other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace office, on any weekend day or any federal holiday.			
		MM Noise 2: To minimize noise impacts resulting from poorly tuned or improperly modified vehicles and construction equipment, all vehicles and construction equipment shall be maintained in good condition and in proper tune per manufacturers' specifications, to the satisfaction of the District~~City of San Jacinto~~. Equipment maintenance records and equipment design specification data sheets shall be kept on site during construction. Maintenance records shall be submitted monthly to the City of San Jacinto. Compliance with this measure shall be subject to periodic inspections by the City of San Jacinto.	During construction	District	Less than Significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
		MM Noise 3: To inform potential sensitive receivers of the pending project construction, the District~~City of San Jacinto~~ shall: a) provide written notification to residents of the Country Lake mobile home parks and two nearby single family residences (or other sensitive receptor(s) at the time of construction) located within 1,400 feet of the project site, 30 days prior to the start of construction. The written notification shall include a tentative construction schedule and contact information for use by the public if specific noise issues arise; and b) prior to commencement of construction, the District~~City of San Jacinto~~ shall post contact information on the construction site for use by the public in the event specific noise issues arise. The contact information shall remain in place until construction is complete.	During construction	Contractor and District	Less than Significant
		MM Noise 4: To reduce noise impacts associated with temporary diesel- or gasoline-powered generators, and where a portable diesel- or gas-powered generator is necessary, it shall have maximum noise muffling capacity and be located as far as technically feasible from noise sensitive uses.	During construction	Contractor and District	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
		MM Noise 5: To minimize or eliminate motor-derived noise from construction equipment, contractors shall utilize construction equipment that is either propane- or electric-powered, when technically feasible.	During construction	Contractor and District	Less than significant
		MM Noise 6: To minimize or eliminate noise from portable compressors, generators, and other such equipment, this equipment shall be covered, to the extent that it is technically feasible, with noise-insulating fabric that does not interfere with the manufacturer's guidelines for engine or exhaust operation	During construction	Contractor and District	Less than significant
		MM Noise 7: To minimize noise from idling engines, all vehicles and construction equipment shall be prohibited from idling in excess of five minutes, when not in use.	During construction	Contractor and District	Less than significant
		MM Noise 8: Temporary noise control barriers (e.g., plywood walls, noise curtains/blankets) shall be utilized to reduce noise impacts when construction takes place near existing residences including two single family residences and the Country Lake Mobile Home Community park, towards the southern end of the project's alignment. To be effective, the barrier/curtain must be located at the top of the highest point between the noise source and receptor, must physically fit in the available space, must completely break the line-of-sight between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces.	During construction	Contractor and District	Less than significant

Impact Category	Impact	Mitigation Measure	Implementation Timing	Responsible Party	Impact After Mitigation
		Noise barriers must be sizable enough to cover the entire noise source, and extend length-wise and vertically as far as feasibly possible to be most effective. If necessary and technically feasible, noise barriers should be tall enough to provide noise reduction for the upper-most stories of nearby sensitive receptors, though this may not always be achievable with abutting multi-story buildings.			
Population / Housing	Induce substantial population growth in an area, either directly or indirectly.	No feasible mitigation exists to reduce or eliminate potential growth inducing impacts	N/A	N/A	Significant – requires Statement of Overriding Considerations
Transportation/ Traffic	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system or exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.	N/A	N/A	N/A	N/A

III-2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Potential impacts related to conflicting with an applicable air quality plan and the creation of objectionable odors affecting a substantial number of people were deemed to have a less than significant impact in the initial study prepared for this Project (Appendix A). The Air Quality Impact Analysis (AQIA) prepared for this Project (Appendix C) evaluated whether the expected criteria air pollutant emissions generated as a result of construction and long-term operations and maintenance (i.e., mobile emissions) of the proposed Project, would cause significant impacts to air quality in the Project area. The AQIA was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 *et seq.*). The methodology follows the *CEQA Air Quality Handbook* (1993) prepared by the South Coast Air Quality Management District (SCAQMD) for quantification of emissions and evaluation of potential impacts to air quality. As recommended by SCAQMD staff, the **Cal**ifornia **E**missions **E**stimator **M**odel® version 2013.2.2 (CalEEMod) was used to quantify Project-related emissions. The focus of the following discussion is related to the potential adverse impacts from non-point sources (i.e., mobile equipment and vehicles) with respect to sensitive receptors, air quality standards, cumulative increases of criteria pollutants, and greenhouse gas emissions.

In addition to other reference documents, the following references were used in the preparation of this section of the DEIR:

AQIA	Albert A. Webb Associates, *Air Quality Impact Analysis*, September 2014. (Appendix C)
CARB AB 32	California Air Resources Board, *Assembly Bill 32 Global Warming Solutions Act webpage.* (Available at http://www.arb.ca.gov/cc/ab32/ab32.htm, accessed September 30, 2014.)
CARB 2007	California Air Resources Board, *Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emission Limit*, November 16, 2007. (Available at www.arb.ca.gov/cc/ccei.htm, accessed September 30, 2014.)
CARB 2008	California Air Resources Board, *Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*, October 24, 2008. (Available at http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf, accessed September 30, 2014.)
CEC 2005	California Energy Commission, *Scenarios of Climate Change in California: An Overview*, Publication CEC-500-2005-186-SF, Published December 2005. (Available at http://www.energy.ca.gov/2005publications/CEC-500-2005-186/CEC-500-2005-186-SF.PDF, accessed October 1, 2014.)

CEC 2006a California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, Publication CEC-600-2006-013-SF, December 2006. (Available at www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF, accessed September 30, 2014.)

CEC 2006b California Energy Commission, *Our Changing Climate*, Publication CEC-500-2006-077, July 2006. (Available at www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF, accessed October 1, 2014.)

CEC 2006c California Energy Commission, *Public Health Related Impacts of Climate Change in California*, Publication CEC-500-2005-197-SF, March 2006. (Available at http://www.energy.ca.gov/2005publications/CEC-500-2005-197/CEC-500-2005-197-SF.PDF, accessed October 1, 2014.)

CED California Executive Department, *Executive Order S-3-05 by the Governor of the State of California,* June 2005. (Available at http://gov.ca.gov/news.php?id=1861, accessed September 30, 2014.)

CPUC California Public Utilities Commission, *News Release: PUC Sets GHG Emissions Performance Standard to Help Mitigate Climate Change*, January 25, 2007. (Available at http://docs.cpuc.ca.gov/published/News_release/63997.htm, accessed September 30, 2014.)

CSS California State Senate, *Bill Information: SB 1368*, September 29, 2006. (Available at http://www.leginfo.ca.gov/pub/05-06/bill/sen/sb_1351-1400/sb_1368_bill_20060929_chaptered.pdf, accessed September 30, 2014.)

EIA Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2006*, U.S. Department of Energy, November 2007. (Available on August 15, 2008 at ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057306.pdf, accessed September 30, 2014.)

IPCC 1995 Intergovernmental Panel on Climate Change, Second Assessment Report, *Climate Change 1995 – The Science of Climate Change*, 1996. (Available at http://www.ipcc.ch/ipccreports/sar/wg_I/ipcc_sar_wg_I_full_report.pdf, accessed September 30, 2014.)

IPCC 2007 Intergovernmental Panel on Climate Change, *Climate Change 2007 – The Physical Science Basis*, 2007. (Available at http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm, accessed September 30, 2014.)

LCC — Legislative Counsel of California, *Senate Bill No. 97, Chapter 185, CEQA, Greenhouse Gas Emissions*, approved August 24, 2007. (Available at http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0051-0100/sb_97_bill_20070824_chaptered.pdf, accessed September 30, 2014.)

OPR 2008 — State of California, Governor's Office of Planning and Research, *Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, June 19, 2008. (Available at http://opr.ca.gov/docs/june08-ceqa.pdf, accessed September 30, 2014.)

OPR 2009 — State of California, Governor's Office of Planning and Research, *CEQA Guideline Amendments*, December 30, 2009. (Available at http://ceres.ca.gov/ceqa/guidelines/, accessed September 30, 2014.)

RCLIS — County of Riverside, *Riverside County Land Information System*. (Available at http://tlmabld5.agency.tlma.co.riverside.ca.us/website/rclis/, accessed October 1, 2014.)

SCAQMD — South Coast Air Quality Management District, *Air Quality Data, 2011-2013*. (Available at http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year, accessed September 30, 2014.)

SCAQMD 1993 — South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993. (Available at SCAQMD.)

SCAQMD 2003 — South Coast Air Quality Management District, *White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution*, August 2003. (Available at http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4, accessed September 30, 2014.)

SCAQMD 2005 — South Coast Air Quality Management District, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005. (Available at http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf?sfvrsn=4, accessed September 30, 2014.)

SCAQMD 2008 — South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008 (Available at http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2, accessed September 30, 2014.)

SCAQMD 2008 (a)	South Coast Air Quality Management District, *Draft AQMD Staff CEQA Greenhouse Gas Significance Threshold*, October 2008. (Available at http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-staff-proposal.pdf?sfvrsn=2, accessed September 30, 2014.)
SCAQMD 2008 (b)	South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*. October, 2008. (Available at http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2, accessed September 30, 2014.)
SCAQMD 2012	South Coast Air Quality Management District, Final *2012 Air Quality Management Plan,* February 2013. (Available at http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan, accessed September 30, 2014.)
Scoping Plan	California Air Resources Board, *Climate Change Scoping Plan*, December 11, 2008. (Available at http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf, accessed September 30, 2014.)
US EPA	U.S. Environmental Protection Agency, *Six Common Air Pollutants webpage*. (Available at http://www.epa.gov/air/urbanair/, accessed October 1, 2014.)

Setting

The proposed Project site lies within the South Coast Air Basin (Basin), which is under the jurisdiction of the SCAQMD. The Basin consists of Orange County together with the coastal and mountain portions of Los Angeles, Riverside, and San Bernardino counties.

Topography, atmospheric inversions, and dominant onshore flows affect regional and local air quality within the Basin. Topographic features such as the San Gabriel, San Bernardino, and San Jacinto Mountains form natural barriers to the horizontal dispersion of air contaminants. The presence of atmospheric inversions limits the vertical dispersion of air pollutants. With an inversion, the temperature initially follows a normal pattern of decreasing temperature with increasing altitude, however, at some elevations, the trend reverses and temperature begins to increase as altitude increases. This transition to increasing temperature establishes the effective mixing height of the atmosphere and acts as a barrier to vertical dispersion of pollutants. Dominant onshore flow provides the driving mechanism for both air pollution transport and pollutant dispersion. Air pollution generated in coastal areas is transported east to inland receptors by the onshore flow during the daytime until a natural barrier (the

mountains) is confronted, limiting the horizontal dispersion of pollutants. The result is a gradual degradation of air quality from coastal areas to inland areas, which is most evident with photochemical pollutants (formed by reactions under sunlight), such as ozone.

Climate

Climate in the Basin is determined by terrain and geographical location. The Project site lies within the terrain south of the San Bernardino Mountains, east of the Santa Ana Mountains and southwest of Lakeview Mountains to the southwest. The San Timoteo badlands are northeast of the proposed Project site, however, these mountains are not as relevant as the San Bernardino Mountains considering the elevation and ability to deflect or funnel air. The climate in the Basin is typical of southern California's Mediterranean climate which is characterized by dry, warm summers and mild winters. Winters typically have infrequent rainfall, light winds and frequent early morning fog and clouds that turn to hazy afternoon sunshine.

The following includes factors that govern micro-climate differences among inland locations within the Basin: 1) the distance of the average air trajectory from the site to the ocean; 2) the site elevation; 3) the existence of any intervening terrain that may affect airflow or moisture content; and 4) the proximity to canyons or mountain passes. As a general rule, locations farthest inland from the ocean have the hottest summer afternoons, the lowest rainfall, and the least amount of fog and clouds. Foothill communities in the Basin have greater levels of precipitation, cooler summer afternoons and may be exposed to wind funneling through nearby canyons during Santa Ana winds. Terrain will generally steer local wind patterns. T

Precipitation and Temperature

Annual average temperatures in the Basin typically range in the low to mid-60s (degrees Fahrenheit). Temperatures above 100 degrees in the summer are normal and can occur in all portions of the Basin, while winter month temperatures can reach the lower 30s.

The rainy season in the Basin is November to April. Rainfall averages vary over the Basin. San Jacinto averages 11 inches of rainfall per year, while Los Angeles averages 14 inches. Rainy days vary from 5 to 10 percent of all days in the Basin, with the most frequent occurrences of rainfall near the coast.

Winds

The interaction of land (offshore) and sea (onshore) breezes control local wind patterns in the area. Daytime winds typically flow from the coast to the inland areas, while the pattern typically reverses in the evening, flowing from the inland areas to the ocean. Air stagnation may occur in the early evening and early morning during periods of transition between day and nighttime flows.

Approximately 5 to 10 times a year, the Project site vicinity experiences strong, hot, dry desert winds known as the Santa Ana winds. These winds, associated with atmospheric high pressure, originate in the upper deserts and are channeled through the passes of the San Bernardino

Mountains and into the inland valleys. Santa Ana winds can last for a period of hours or days, and gusts of over 60 miles per hour have been recorded.

High winds, such as the Santa Ana winds, affect dust generation characteristics and create the potential for off-site air quality impacts, especially with respect to airborne nuisance and particulate emissions. Local winds in the Project area are also an important meteorological parameter because they control the initial rate of dilution of locally-generated air pollutant emissions.

Air Pollution Constituents

Air pollutants are classified as either primary, or secondary, depending on how they are formed. Primary pollutants are generated daily and are emitted directly from a source into the atmosphere. Examples of primary pollutants include: carbon monoxide (CO), nitrogen dioxide (NO_2), nitric oxide (NO), sulfur dioxide (SO_2), particulates (PM-10 and PM-2.5) and various hydrocarbons (HC), also known as reactive organic gases (ROG) or volatile organic compounds (VOC). The predominant source of air emissions generated by the Project development is expected to be vehicle emissions. Motor vehicles primarily emit CO, NO_X and VOC/ROG/HC.

Secondary pollutants are created over time and occur within the atmosphere as chemical and photochemical reactions take place. An example of a secondary pollutant is ozone (O_3), which is one of the products formed when NO_X reacts with hydrocarbons (HC), in the presence of sunlight. Other secondary pollutants include photochemical aerosols. Secondary pollutants, such as oxidants, represent major air quality problems in the Basin.

The Federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). Six "criteria" air pollutants were identified using specific medical evidence available at that time, and NAAQS were established for those chemicals. The state of California has adopted the same six criteria pollutants, but has established different allowable levels (see **Table III-2-A, SRA 25, Air Quality Monitoring Summary 2011–2013**). The six criteria pollutants are: O_3, CO, PM-10 and PM-2.5, NO_X, SO_2, and lead. The following is a further discussion of the *criteria pollutants,* as well as ROG/VOC.

- **Carbon Monoxide (CO) – A colorless, odorless toxic gas produced by incomplete** combustion of carbon-containing substances. Concentrations of CO are generally higher during the winter months when meteorological conditions favor the build-up of primary pollutants. Automobiles are the major source of CO in the Basin, although various industrial processes also emit CO through incomplete combustion of fuels. In high concentrations, CO can cause serious health problems in humans by limiting the red blood cells' ability to carry oxygen (SCAQMD 1993).
- **Oxides of Nitrogen (NO_X) – Those that are important in air pollution are nitri**c oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed by a combination of

nitrogen and oxygen when combustion takes place under high temperatures and pressures. NO_2 is a reddish-brown gas formed by the combination of NO with oxygen. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations, as well as ships, railroads and aircraft, are the primary sources of NO_X. NO_2 at atmospheric concentrations is a potential irritant and can cause coughing in healthy people, can alter respiratory responsiveness and pulmonary functions in people with preexisting respiratory illness, and potentially lead to increased levels of respiratory illness in children (US EPA).

- **Ozone (O_3)** – A colorless toxic gas that irritates the lungs and damages materials and vegetation. During the summer's long daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between NO_2 and VOC which result in the formation of O_3. Conditions that lead to high levels of O_3 are adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer (all of which are characteristic of Western Riverside County). Ozone represents the worst air pollution-related health threat in the Basin as it affects people with preexisting respiratory illness as well reduces lung function in healthy people. Studies have shown that children living within the Basin experience a 10–15% reduction in lung function (SCAQMD 1993).
- **Atmospheric Particulate Matter (PM)** – Made up of fine solid and liquid particles, such as soot, dust, aerosols, fumes, and mists. PM-10 consists of particulate matter that is 10 microns or less in diameter, and PM-2.5 consists of particulate matter of 2.5 microns or less in size. Both PM-10 and PM-2.5 can be inhaled into the deepest part of the lung, attributing to health effects. The presence of these fine particles by themselves cause lung damage and interfere with the body's ability to clear its respiratory tract. Said particles can also act as a carrier of other toxic substances (SCAQMD 1993). The sources contributing to particulate matter pollution include road dust, windblown dust, agriculture, construction, fireplaces and wood burning stoves, and vehicle exhaust. Specifically, SCAQMD data indicates the largest component of PM-10 particles comes from dust (unpaved roads, unpaved yards, vacant land that has been disked). PM-2.5 particles are mostly manmade particles resulting from combustion sources.
- **Sulfur dioxide (SO_2)** – A colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. SO_2 can result in temporary breathing impairment in asthmatic children and adults engaged in active outdoor activities. When combined with PM, SO_2 can cause symptoms such as shortness of breath and wheezing and, with long-term exposure, lead to the exacerbation of existing cardiovascular disease and respiratory illnesses (US EPA). Although SO_2 concentrations have been reduced to levels well below state and federal standards, further reductions in SO_2 emissions are needed because SO_2 is a precursor to sulfate and PM-10.
- **Lead (Pb)** – Lead concentrations once exceeded the state and federal air quality standards by a wide margin, but have not exceeded state or federal air quality standards at any

regular monitoring station since 1982. Health effects associated with lead include neurological impairments, mental retardation, and behavioral disorders. At low levels, lead can damage the nervous systems of fetuses and result in lowered IQ levels in children (US EPA). Though special monitoring sites immediately downwind of lead sources recorded very localized violations of the state standard in 1994, no violations have been recorded at these stations since 1996. Unleaded gasoline has greatly contributed to the reduction in lead emissions in the Basin. Since the proposed Project will not involve leaded gasoline, or other sources of lead emissions, this criteria pollutant is not expected to be a factor with Project implementation.

- **Reactive Organic Gases/Volatile Organic Compounds (ROG/VOC)** – It should be noted that there are no state or federal ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions, which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM-10 and lower visibility levels. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere, even at low concentrations, are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen. (SCAQMD 2005)

Toxic Air Contaminants

Toxic air contaminants (TACs) are chemicals generally referred to as those contaminants known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. There are hundreds of air toxics, and exposure to these pollutants can cause or contribute to cancer or non-cancer health effects such as birth defects, genetic damage, and other adverse health effects. Effects may be both chronic (i.e., of long duration) or acute (i.e., severe but of short duration) on human health. Acute health effects are attributable to sudden exposure to high quantities of air toxics. These effects can include nausea, skin irritation, respiratory illness, and, in some cases, death. Chronic health effects usually result from low-dose, long-term exposure from routine releases of air toxics. The effect of major concern for this type of exposure is cancer, which typically requires a latency period of 10–30 years after exposure to develop.

Greenhouse Gases and the Global Warming Effect

Some gases in the atmosphere affect the Earth's heat balance by absorbing infrared radiation. This layer of gases in the atmosphere functions much the same as glass in a greenhouse (i.e., both prevent the escape of heat). This is why global warming is also known as the "greenhouse effect." Increased emissions of these gases due to combustion of fossil fuels and other activities have increased the greenhouse effect, leading to global warming and other climate changes.

Gases responsible for global climate change in the South Coast Air Basin and their relative contribution to the overall warming effect are carbon dioxide (55 percent), CFCs (24 percent), methane (15 percent), and nitrous oxide (6 percent) (SCAQMD 2005). It is widely accepted that continued increases in greenhouse gases (GHG) will contribute to global climate change although there is uncertainty concerning the magnitude and timing of future emissions and the resultant warming trend (SCAQMD 2005). Human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors contribute to these GHG (CEC 2006a). According to the California Energy Commission (CEC), transportation was responsible for 41 percent of the state's GHG emissions, followed by electricity generation in 2004 (CEC 2006a). More recently, the California Air Resources Board (CARB) reported that transportation was 38 percent of the state's GHG emissions, followed by electricity generation in 2004 (CARB 2007). Emissions of CO_2 and nitrous oxide (N_2O) are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices, landfills, and wastewater treatment.

"Stratospheric ozone depletion" refers to the slow destruction of naturally occurring ozone, which lies in the upper atmosphere (called the stratosphere) and which protects Earth from the damaging effects of solar ultraviolet radiation. Certain compounds, including chlorofluorocarbons (CFCs,) halons, carbon tetrachloride, methyl chloroform, and other halogenated compounds, accumulate in the lower atmosphere and then gradually migrate into the stratosphere. In the stratosphere, these compounds participate in complex chemical reactions to destroy the upper ozone layer. Destruction of the ozone layer increases the penetration of ultraviolet radiation to the Earth's surface, a known risk factor that can increase the incidence of skin cancers and cataracts, contribute to crop and fish damage, and further degrade air quality (SCAQMD 2005).

GHG and ozone-depleting gases include, but are not limited to, the following:

- **Carbon dioxide –** Carbon dioxide results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, carbon dioxide accounted for approximately 84 percent of total GHG emissions in the state (CEC 2006a). In the Basin, approximately 48 percent of carbon dioxide emissions come from transportation, residential and utility sources which contribute approximately 13 percent each, 20 percent come from industry, and the remainder comes from a variety of other sources (SCAQMD 2005).
- **Methane –** Atmospheric methane is emitted from both non-biogenic and biogenic sources. Non-biogenic sources include fossil fuel mining and burning, biomass burning, waste treatment, geologic sources, and leaks in natural gas pipelines. Biogenic sources include wetlands, rice agriculture, livestock, landfills, forest, oceans, and termites. Methane sources can also be divided into anthropogenic and natural. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites and geological

sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions. (IPCC 2007) It is a greenhouse gas and traps heat 40-70 times more effectively than carbon dioxide. (SCAQMD 2005) In the Basin, more than 50 percent of human-induced methane emissions come from natural gas pipelines, while landfills contribute 24 percent. Methane emissions from landfills are reduced by SCAQMD Rule 1150.1 - Control of Gaseous Emissions from Active Landfills. Methane emissions from petroleum sources are reduced by a number of rules in SCAQMD Regulation XI that control fugitive emissions from petroleum production, refining, and distribution. (SCAQMD 2005)

- **Other regulated greenhouse gases include Nitrous Oxide, Sulfur Hexafluoride, Hydrofluorocarbons, and Perfluorocarbons** – These gases all possess heat-trapping potentials hundreds to thousands of times more effective than carbon dioxide. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to carbon dioxide or methane is relatively small. Sulfur hexafluoride, hydrofluorocarbon, and perfluorocarbon emissions occur at even lower rates.
- **Chlorofluorocarbons** – Chlorofluorocarbons (CFCs) are emitted from blowing agents used in producing foam insulation. They are also used in air conditioners and refrigerators and as solvents to clean electronic microcircuits. CFCs are primary contributors to stratospheric ozone depletion and to global warming. Sixty-three percent of CFC emissions in the Basin come from the industrial sector. Federal regulations require service practices that maximize recycling of ozone-depleting compounds (both CFCs, hydro-chlorofluorocarbons and their blends) during the servicing and disposal of air-conditioning and refrigeration equipment. SCAQMD Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems requires CFC refrigerants to be reclaimed or recycled from stationary refrigeration and air conditioning systems. SCAQMD Rule 1405 – Control of Ethylene Oxide and Chlorofluorocarbon Emissions from Sterilization or Fumigant Processes requires recovery of reclamation of CFCs at certain commercial facilities and eliminates the use of some CFCs in the sterilization processes. Some CFCs are classified as TACs and regulated by SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants and SCAQMD Rule 1402 Control of Toxic Air Contaminants from Existing Sources.
- **Halons –** These compounds are used in fire extinguishers and behave as both ozone-depleting and greenhouse gases. Halon production ended in the United States in 1993. SCAQMD Rule 1418 – Halon Emissions from Fire Extinguishing Equipment requires the recovery and recycling of halons used in fire extinguishing systems and prohibits the sale of halon in small fire extinguishers.
- **Hydro-chlorofluorocarbons –** HCFCs are solvents, similar in use and chemical composition to CFCs. The hydrogen component makes HCFCs more chemically reactive than CFCs, allowing them to break down more quickly in the atmosphere. These compounds deplete

the stratospheric ozone layer, but to a much lesser extent than CFCs. HCFCs are regulated under the same SCAQMD rules as CFCs.

- **1,1,1-trichloroethane (TCA**) – TCA (methyl chloroform) is a solvent and cleaning agent commonly used by manufacturers. It is less destructive on the environment than CFCs or HCFCs, but its continued use will contribute to global warming and ozone depletion. 1,1,1-trichloroethane (TCA) is a synthetic chemical that does not occur naturally in the environment. No TCA is supposed to be manufactured for domestic use in the United States after January 1, 2002 because it affects the ozone layer. TCA had many industrial and household uses, including use as a solvent to dissolve other substances, such as glues and paints; to remove oil or grease from manufactured metal parts; and as an ingredient of household products such as spot cleaners, glues, and aerosol sprays. SCAQMD regulates this compound as a toxic air contaminant under Rules 1401 and 1402.

Global Warming Potential

Individual GHGs have varying global warming potential and atmospheric lifetimes. The Intergovernmental Panel on Climate Change (IPCC) developed the Global Warming Potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of individual GHGs is determined through a comparison with the GWP of CO_2. CO_2 has a GWP of one. CH_4 has a GWP of 21, meaning that on a molecule by molecule basis, CH_4 has 21 times the global warming potential of CO_2. CO_2 equivalents (CO_2E) are the emissions of a GHG multiplied by the GWP. The CalEEMod program calculates the CO_2E based on the GWPs reported in the IPCC Second Assessment Report (IPCC 1995). **Table III-2-A** shows the GWP and atmospheric lifetimes of various GHGs with relatively long atmospheric lifetimes from the IPCC 1995 report.

Table III-2-A, Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12±3	21
Nitrous Oxide (N_2O)	120	310
Hydrofluorocarbons (HFCs)		
HFC-23	264	11,700
HFC-32	5.6	650
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
Perfluoromethane (CF_4)	50,000	6,500
Perfluoroethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: IPCC 1995, Table 4

GHG Effects

As emissions of GHGs increase, temperatures in California are projected to rise significantly over the twenty-first century. The modeled magnitudes of the warming vary because of uncertainties in future emissions and in the climate sensitivity. According to the California Climate Change Center (CEC 2005), there are three projected warming scenarios referred to as the low, medium, and high range. These expected increases from 2000 to 2100 vary from approximately 1.7°C–3.0°C (3.0°F–5.4°F) in the lower range of projected warming, 3.1°C–4.3°C (5.5°F–7.8°F) in the medium range, and 4.4°C–5.8°C (8.0°F–10.4°F) in the higher range. To comprehend the magnitude of these projected temperature changes over the next century, the lower range of projected temperature rise is slightly larger than the difference in annual mean temperature between Monterey and Salinas which is 2.5°F; and, the upper range of project warming is greater than the temperature difference between San Francisco and San Jose which is 7.4ºF.

Other resource areas could be affected as a result of GHGs. For example, increased global average temperature will cause increases to ocean temperatures; and, the Pacific Ocean strongly influences the climate within California. As the temperature of the ocean warms, it is anticipated that rain will fall instead of snow in the Sierra Nevada during the wet season. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. According to a California Energy Commission report, the snowpack portion of the supply could potentially decline by 70–90 percent by the end of the 21st century (CEC 2006b). This phenomenon could lead to significant challenges securing an adequate water supply for a growing population.

Some models indicate that the increased ocean temperature could result in increased moisture into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential for flood events, placing more pressure on California's levee/flood control system. Sea level has risen approximately 7 inches during the last century; and, according to the CEC report, it is predicted to rise an additional 22–35 inches by 2100, depending on the future GHG emissions levels (CEC 2006b), further straining the state's water conveyance infrastructure.

Another impact of global warming is increased fire hazard. Fire is an important natural disturbance within many California ecosystems that promotes vegetation and wildlife diversity, releases nutrients, and eliminates heavy fuel accumulations that can lead to catastrophic burns. The changing climate could alter fire regimes in ways that could have social, economic, and ecological consequences. As the existing climate throughout California changes over time, mass migration of species, or worse, failure of species to migrate in time to adapt to the changes in climate, could also result.

Due to its weather, topography, and native vegetation, nearly all of southern California is at

some risk from wildland fires also called wildfires. The extended droughts characteristic of California's Mediterranean climate result in large areas of dry vegetation that provide fuel for wildland fires which can spread into urban areas. Wildland-urban fires occur when a fire burning in wildland vegetation gets close enough to ignite urban structures. Areas of dense, dry vegetation, particularly in canyon areas and hillsides, pose the greatest wildland fire potential.

Sources of wildfire risk to the Project site from surrounding properties include the open and natural state of the San Timoteo badlands to the northeast and the Lakeview Mountains to the southwest. According to the *Riverside County Land Use Information System (RCLIS)*, the overall Project site is outside the high fire hazard area. The widening of the riverbed due to the proposed levee alignments will add to the buffer between the hillsides to the north and the more densely populated areas to the south of the river.

Conservative estimates indicate that the risk of large statewide wildfires, characterized as approximately 500 acres or larger, would rise almost 35 percent by 2050 and 55 percent by 2100 under the medium temperature described previously. Under the low warming range, the increased risk of wildfires is nearly cut in half (CEC 2005).

Wildfires affect public safety and have the potential to significantly impact public health through smoke inhalation. For example, a survey of 26 percent of all tribal households on the Hoopa Valley National Indian Reservation in northern California showed a 52 percent increase in medical visits for respiratory problems during a large fire in 1999, compared to the same period of 1998. More than 60 percent of those surveyed reported an increase in respiratory symptoms during the smoke episode, and 20 percent continued to report increased respiratory symptoms two weeks after the smoke cleared. The projected increases in fire season severity could lead to more "bad air" days. However, quantitative estimation of the impacts of future wildfire events is extremely difficult. The impacts of any fire are unique to that event, and are influenced not only by the magnitude, intensity, and duration of the fire, but also the proximity of the smoke plume to a population (CEC 2005).

Climate change will affect the health of Californians by increasing the frequency, duration, and intensity of ambient conditions conducive to air pollution formation, oppressive heat, and wildfires. Not only are average temperatures expected to increase, but the projected increase in extreme temperatures is also expected to increase which can cause the most serious health impacts. The modeled warming scenarios indicate that the number of extremely hot and extremely cold days will increase by 2100. For Riverside/San Bernardino metropolitan areas, the number of extremely hot days will increase approximately 40 to 80 days per year under the lower and higher warming scenarios, respectively. Recent studies suggest that no capacity for future adaptation to extreme heat is seen in Riverside/San Bernardino metropolitan areas. The results for the Riverside/San Bernardino metropolitan areas actually indicate increased sensitivity during the hottest summers, which is counterintuitive to what might be expected in hot inland urban areas. Current investigations are underway seeking alternative explanations by

taking greater account of socioeconomic factors (such as the availability of air conditioning, age structure of the population, and the housing stock) that might explain these non-intuitive results. If, for example, the Riverside/San Bernardino metropolitan area has a lesser proportion of air-conditioned residents than other hot inland urban areas, increased heat could create an indoor environment that is almost intolerable and could lead to greater numbers of deaths. It is clear that a thorough investigation of these socio-economic issues is necessary to understand the increased sensitivity of Riverside/San Bernardino metropolitan area residents to heat during the hottest summers (CEC 2006c).

GHG Inventory

Unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, global warming is a global problem and GHGs are global pollutants. Impacts of GHG emissions are a function of their total atmospheric concentration and most GHGs are globally well mixed atmospheric constituents. This means that the location of a particular GHG emission, in contrast to the situation for criteria pollutants, does not change its environmental impact.

Globally, for the years 2000 through 2005, the annual average emissions of fossil fuel-related carbon dioxide was 26.4 gigatons of CO_2 (one gigaton equals one billion MT) per year (IPCC 2007). It should also be noted that the annual total U.S. emissions of GHG dropped 1.5 percent in 2006 from 7,181 million MT to 7,075 million MT due to warmer weather and decreased energy demand, according to the Energy Information Administration (EIA). During the same timeframe, the U.S. economic output increased 2.9 percent (EIA). This decline results in a GHG intensity reduction of 4.2 percent as a measure of gross domestic product (EIA).

Worldwide, California is the 12th to 16th largest emitter of CO_2, and is responsible for approximately two percent of the world's CO_2 emissions (CEC 2006a). In 2004, the most recent year for which statewide data is available, the CEC reported that California produced 492 million gross metric tonnes (one metric tonne equals 2,205 pounds) of carbon dioxide-equivalent (CEC 2006a). However, California is the second largest emitter of greenhouse gases in the United States next to Texas, which generates about twice the amount of emissions (CEC 2006a). When considering fossil fuel emissions at the individual person level, California is second lowest in the nation in per capita CO_2 emissions with only the District of Columbia lower (CEC 2006a).

In January 2007, Assembly Bill 1803 transferred responsibility for developing and maintaining the state's GHG inventory from the California Energy Commission (CEC) to CARB. Using the CEC GHG inventory as a starting point, CARB staff determined the state's 1990 GHG emissions level by conducting a comprehensive review of all GHG emitting sectors. The seven sectors are: Transportation, Electricity Generation, Industrial, Residential, Agriculture, Commercial, and Forestry.

In November 2007, the CARB released its staff report establishing a statewide 1990 GHG

emission level and a 2020 emission limit. (CARB 2007) As part of this staff report, CARB staff recommended an amount of 427 million metric tonnes of carbon dioxide equivalent ($MMTCO_2e$) as the total statewide GHG 1990 emissions level and 2020 emissions limit. The Board approved the 2020 limit on December 6, 2007. This limit is an aggregated statewide limit, rather than sector- or facility-specific. The staff report also included the statewide GHG emissions for 2004, which was 480 $MMTCO_2e$.

While the inventory data numbers from the CEC and CARB are similar for 2004, these estimates have important differences. Emissions from individual sectors differ between CEC and CARB estimates by up to 30 percent due to updated data, methodologies, and differences in included and excluded emissions. Staff at CARB treated carbon stored in landfills differently than CEC by separately tracking stored carbon instead of considering it an emission sink within a landfill. In addition, the CARB estimate only includes intrastate aviation, whereas the CEC estimates include both interstate and intrastate flights. Staff also included emissions from international shipping and related port activities in California waters, whereas the CEC excluded all emissions from international ships.

Monitored Air Quality

The Project site is located within SCAQMD Source Receptor Area (SRA) 28. However, after 1996, no monitoring was done in SRA 28; therefore, the data for the monitoring station with similar meteorological conditions, in SRA 25 (Lake Elsinore), is shown instead. SRA 25 does not monitor SO_2, PM-10, or PM-2.5. Data for these pollutants was taken from the neighboring station in SRA 23 (Rubidoux). The most recent published data for SRA 25 is presented in **Table III-2-B**. Atmospheric concentrations of ozone and particulate matter are the two most significant air quality concerns in the Project area. It is encouraging to note that ozone levels have decreased in the last few years with approximately five percent or less of the days each year experiencing a violation of the state hourly ozone standard.

Table III-2-B, SRA 25, Air Quality Monitoring Summary 2011–2013

Pollutant/Standard		Monitoring Years		
		2011	2012	2013
No. Days Exceeded	**Ozone (O_3):**			
	Health Advisory - 0.15 ppm	0	0	0
	California Standard:			
	1-Hour - 0.09 ppm	19	10	9
	8-Hour - 0.07 ppm	45	29	25
	Federal Primary Standards:			
	8-Hour - 0.075 ppm	28	17	12
	Max 1-Hour Conc. (ppm)	0.133	0.111	0.102
	Max 8-Hour Conc. (ppm)	0.106	0.089	0.089
No. Days Exceeded	**Carbon Monoxide (CO):**			
	California Standard: [b]			
	1-Hour - 20 ppm	0	0	0
	8-Hour - 9.0 ppm	0	0	0
	Federal Primary Standards: [b]			
	1-Hour - 35 ppm	0	0	0
	8-Hour - 9.0 ppm	0	0	0
	Max 8-Hour Conc. (ppm)	0.7	0.7	0.6
No. Days Exceeded	**Nitrogen Dioxide (NO_2):**			
	California Standard:			
	1-Hour - 0.18 ppm (180 ppb)	0	0	0
	Federal Standard:			
	1-Hour – 0.10 ppm (100 ppb)	0	0	0
	Annual Arithmetic Mean (ppb) [c]	9.6	10.2	8.4
	Max. 1-Hour Conc. (ppb)	50.3	48.3	46.6
No. Days Exceeded	**Sulfur Dioxide (SO_2):** [a]			
	California Standards:			
	1-Hour – 0.25 ppm (250 ppb)	0	0	0
	24-Hour – 0.04 ppm (40 ppb)	0	0	0
	Federal Primary Standards: [d]			
	1-Hour – 0.075 ppm (75 ppb)	0	0	0
	Max. 1-Hour Conc. (ppb)	51.3	4.3	8.1
No. Days Exceeded	**Suspended Particulates (PM-10):** [a]			
	California Standards:			
	24-Hour - 50 $\mu g/m^3$	14	19	10
	Federal Primary Standards:			
	24-Hour – 150 $\mu g/m^3$	0	0	0
	Annual Arithmetic Mean ($\mu g/m^3$) [e]	33.7	34.5	33.8
	Max. 24-Hour Conc. ($\mu g/m^3$)	82	67	135
No Days Exceeded	**Fine Particulates (PM-2.5):** [a]			
	California & Federal Primary Standards:			
	24-Hour – 35$\mu g/m^3$	4	7	6
	Annual Arithmetic Mean ($\mu g/m^3$) [f]	13.6	13.5	12.5
	Max. 24-Hour Conc. ($\mu g/m^3$)	60.8	38.1	60.3

Notes: ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms/cubic meter

a. Data not monitored; data obtained from Metropolitan Riverside County 1 in SRA 23.

b. The state and federal 1-hr and 8-hr standards were not exceeded.

c. Federal annual arithmetic mean (AAM) is > 53.4 ppb. State AAM > 30 ppb.

d. Federal SO_2 standard for 24-hour and AAM standards revoked; established new 1-hour standard of 0.075 ppm, effective August 2, 2010.

e. Federal annual PM-10 standard revoked in 2006. State annual standard is AAM > 20$\mu g/m^3$.

f. Federal annual PM-2.5 standard revised from AAM 15.0 to 12.0 $\mu g/m^3$, effective March 2013. State annual standard is AAM > 12$\mu g/m^3$.

Thresholds of Significance

The City has not established local CEQA significance thresholds as described in Section 15064.7 of the State *CEQA Guidelines*. However, the City's "Environmental Checklist" for the subject Project (see Appendix A of this document) indicates that impacts to air quality may be considered potentially significant if the Project would:

- violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); or
- expose sensitive receptors to substantial pollutant concentrations.

In regards to Thresholds of Significance related to GHG, at the time of the initial circulation of the NOP, no adopted thresholds of significance existed. Pursuant to SB 97, described below, OPR released and the Natural Resources Agency adopted CEQA Guideline Amendments (Adopted Amendments) addressing GHG emissions on December 30, 2009.

These adopted thresholds have been incorporated herein as shown below indicating that GHG impacts may be considered potentially significant if the Project would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Related Regulations

Criteria Air Pollutants

The federal and state ambient air quality standards (AAQS) establish the context for the local air quality management plans (AQMP) and for determination of the significance of a Project's contribution to local or regional pollutant concentrations. State and federal AAQS are presented above, in **Table III-2-B**. The AAQS represent the level of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other diseases or illness and persons engaged in strenuous work or exercise, all referred to as "sensitive receptors." SCAQMD defines

a "sensitive receptor" as a land use or facility such as residences, schools, childcare centers, athletic facilities, playgrounds, retirement homes and convalescent homes.
The CARB maintains records as to the attainment status of air basins throughout the state, under both state and federal criteria. The portion of the Basin within which the proposed Project is located is designated as a non-attainment area for ozone and PM-2.5 under both state and federal standards and for PM-10 under state standards. The Air Quality Management Plan (AQMP) for the Basin establishes a program of rules and regulations directed at attainment of the state and national air quality standards. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans.

The SCAQMD and CARB also have programs and regulations for construction equipment engines. SCAQMD's Carl Moyer program provides monetary grants to help businesses and public agencies clean up their heavy-duty diesel engines. CARB also has regulations for both existing and new off-road diesel vehicles which, over time, reduce emissions from off-road diesel equipment and engines. These regulations are described further, below, under the sub-heading "*Diesel Regulations*."

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. They include the application of water or chemical stabilizers to disturbed soils at least twice a day, covering all haul vehicles before transport of materials, restricting vehicle speeds on unpaved roads to 15 mph, and sweeping loose dirt from paved site access roadways used by construction vehicles. In addition, it is required to establish a vegetative ground cover on disturbance areas that are inactive within 30 days after active operations have ceased. Alternatively, an application of dust suppressants can be applied in sufficient quantity and frequency to maintain a stable surface. Rule 403 also requires grading and excavation activities to cease when winds exceed 25 mph.

SCAQMD Rule 1191 for Clean On-Road Light- and Medium-Duty Public Fleet Vehicles applies to the City of San Jacinto and Riverside County Flood Control and Water Conservation District. This rule requires public fleets with 15 or more non-exempt vehicles to acquire low-emitting gasoline or alternative-fuel vehicles when procuring or leasing passenger cars, light-duty, or medium duty trucks.

Toxic Air Contaminants

Toxic Air Contaminants are regulated under both federal and state laws. Federally, the 1970 Amendments to the Clean Air Act included a provision to address air toxics. California regulates toxic air contaminants through its air toxics program, mandated in Chapter 3.5 (Toxic Air Contaminants) of the Health and Safety Code (H&SC § 39660, *et seq.*) and Part 6 Air Toxics "Hot Spots" Information and Assessment (H&SC § 44300, *et seq.*). The California Air Resources Board (CARB), working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), identifies toxic air contaminants. Air toxic control measures may then be adopted to reduce ambient concentrations of the identified toxic air contaminant below a specific

threshold based on its effects on health, or to the lowest concentration achievable through use of best available control technology for toxics (T-BACT). The program is administered by the CARB. Air quality control agencies, including the SCAQMD, must incorporate air toxic control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by CARB.

Diesel Regulations

In 1990, the State of California listed diesel exhaust as a known carcinogen under its Safe Drinking Water and Toxic Enforcement Act (Proposition 65). In 1998, the California Air Resources Board listed diesel particulate as a toxic air contaminant.

The CARB, a sub-agency of the California Environmental Protection Agency (Cal EPA), is taking the lead on addressing diesel emissions in the state of California. The first step to significantly reduce diesel emissions occurred in September 2000 when the CARB approved the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" or Diesel Risk Reduction Plan. The two main goals of the Diesel Risk Reduction Plan are: 1) to get new diesel fueled engines to use state-of-the-art emission controls as well as low-sulfur diesel fuel and, 2) for existing diesel engines to be retrofitted with emission control features. Effects of meeting these goals set by the CARB would be reducing the health effects experienced by Californians from diesel exhaust.

Under the CARB's Diesel Risk Reduction Program, mobile diesel emissions have their own set of reduction programs, as opposed to stationary diesel sources (generators) which are addressed separately under the Reduction Plan. One of the incentive programs for mobile diesel sources is the Carl Moyer Program which is a clean engine incentive program. This program provides money in the form of grants to cover the incremental portion of the cost to purchase cleaner burning engines or retrofitting existing ones.

Other programs include a program designed to develop and implement strategies to reduce emissions from new on-road heavy-duty diesel engines. The primary method of implementing this program will be through the development of emission control regulations and test procedures for those new engines. The California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles were amended on October 17, 2007 and will reduce emission from new on-road heavy-duty diesel engines.

Strategies for reducing diesel emissions from existing on-road heavy duty engines will mainly be implemented through three sections of this program: retrofit assessment, heavy-duty testing, field support, and retrofit implementation. The CARB staff has developed regulations to reduce diesel particulate matter and other emissions from existing on-road heavy-duty diesel powered trucks and buses operating in California. These regulations were adopted by CARB in December

2008 and amended in December 2010.[1] Beginning January 2012, the Statewide Truck and Bus rule began requiring heavier trucks to be retrofitted diesel exhaust filters, and older trucks must be replaced starting January, 1 2015. By 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

In December 2000, the U.S. EPA announced its "Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements" (2007 Rule). This new rule required that new emission standards take effect in 2007 on new heavy duty engines and vehicles. The 2007 Rule standards are based on the use of emission control devices (much like the catalytic converters on gasoline automobiles). Coupled with the mechanical devices to control emissions which are not effective with the current high-sulfur diesel fuels on the market, the EPA also required diesel fuel to have 97 percent less sulfur content beginning in 2006.

As far as regulations, the State of California is on the forefront of making an attempt to regulate mobile-source diesel emissions. On February 1, 2005, a requirement limiting the idling of diesel-fueled commercial vehicles to five minutes at any location pursuant to Section 2485 of Chapter 10 within Title 13 of California Code of Regulations was adopted.

Off-road diesel engines are also regulated under CARB for both in-use (existing) and new engines. There have been four sets of standards for diesel engines implemented by CARB, known as Tiers. Tier 1 standards began in 1996. Tier 2 and 3 were adopted in 2000 and were more stringent than the first tier. Tier 2 and 3 standards were completely phased in between 2006 and 2008, respectively. In 2004, CARB adopted the Tier 4 or fourth phase of emission standards for late model year engines. These emission standards are nearly identical to those finalized by the U.S. EPA in May 2004. These standards, which commenced in 2011, are estimated to decrease PM and NO_X emissions to 90 percent below pre-2011 levels.

Since most off-road vehicles today have no emission controls and can last 30 years or longer, CARB approved, on July 26, 2007, a regulation to reduce emission from existing off-road diesel vehicles used in construction and other industries. This regulation establishes emission rate targets that decline over time to accelerate turnover to newer, cleaner engines and requires exhaust retrofits to meet these targets. The regulation took effect on the larger fleets first, with average compliance in 2010; while medium and small fleet requirements will achieve compliance in 2013 and 2015, respectively. However,[2] due to the economy and lack of authorization from the US EPA, enforcement of the In-Use Off-Road Diesel Regulation was delayed until 2014 for large fleets, with compliance for medium and small fleets taking effect in 2017 and 2019, respectively. Unnecessary idling of off-road vehicles was also limited to five minutes, beginning in 2008. This regulation also includes the Surplus Off-Road Opt-in for NO_X (SOON) program. The local air districts may opt into the SOON program to reduce NO_X

[1] http://www.arb.ca.gov/msprog/onrdiesel/documents/TBFinalReg.pdf
[2] http://www.arb.ca.gov/enf/advs/advs414.pdf

emissions beyond what is required by the regulation. Staff at SCAQMD adopted Rule 2449 in 2008 which implements the SOON program. Opting in to this program is anticipated to achieve a 12 ton per day reduction in NO_X by 2014.

Greenhouse Gas Regulations

International Agreements

The Montreal Protocol on Substances that Deplete the Ozone Layer is an international agreement which controls the phase-out of ozone-depleting compounds (ODCs). Under this international agreement, several organizations report on the science of ozone depletion, implement projects to help move away from ODCs, and provide a forum for policy discussions. The SCAQMD supports state, federal, and international policies to reduce levels of ozone depleting gases through its Global Warming Policy and rules. Further, SCAQMD has developed ODC Replacement Guidelines to facilitate transition from ODCs to substances that are the most environmentally benign (SCAQMD 2005).

Federal Regulations

The U.S. EPA has issued regulatory actions under the Clean Air Act and in some cases other statutory authorities to address issues related to climate change[3]. Most recently, on December 7, 2009, Administrator Lisa Jackson signed a final action, under Section 202(a) of the Clean Air Act, finding that six key well-mixed greenhouse gases constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to the climate change problem. Regulations, like those described below, that reduce motor vehicle emissions, will reduce Project-related emissions.

The U.S. EPA, under the Energy Independence and Security Act of 2007, is responsible for revising and implementing regulations to ensure that gasoline sold in the United States contains a minimum volume of renewable fuel. A Notice of Proposed Rulemaking for the Renewable Fuel Standard (RFS) program was published on May 26, 2009. The RFS program will increase the volume of renewable fuel required to be blended into gasoline from 9 billion gallons in 2008 to 36 billion gallons by 2022. The new RFS program regulations are being developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

On September 15, 2009, U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) proposed a new national program that would reduce GHG and improve fuel economy for all new cars and trucks sold in the United States. U.S. EPA proposed the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA proposed Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. This proposed national program would allow automobile manufacturers to

[3] http://www.epa.gov/climatechange/initiatives/index.html, accessed January 25, 2010.

build a single light-duty national fleet that satisfies all requirements under both Federal programs and the standards of California and other states.

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), U.S. EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. Signed by the Administrator on September 22, 2009, the rule requires in general that suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light duty sector, and facilities that emit 25,000 MT or more of GHGs per year to submit annual reports to U.S. EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

On September 30, 2009 U.S. EPA proposed new thresholds for GHG that define when Clean Air Act permits under the New Source Review and Title V operating permits programs would be required. The proposed thresholds would tailor these permit programs to limit which facilities would be required to obtain permits and would cover nearly 70 percent of the nation's largest stationary source GHG emitters—including power plants, refineries, and cement production facilities, while shielding small businesses and farms from permitting requirements. While this does not apply to the Project, it is provided for informational purposes.

State Regulations

Assembly Bill 1493

California Assembly Bill 1493 (Pavley), signed by Governor Gray Davis on July 22, 2002, requires CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce GHG emissions from the light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030. The U.S. EPA initially denied the Clean Air Act waiver required to implement AB 1493 on December 19, 2007. However, in January 2009, President Barack Obama issued a directive to the U.S. EPA to reconsider California's request for a waiver. The EPA granted California's request for a CAA waiver on June 30, 2009.

Executive Order S-3-05

In June 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. This Order calls for the following GHG emission reduction targets to be established: reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and reduce GHG emissions to 80 percent below 1990 levels by 2050. The Order also requires that the Secretary of the California Environmental Protection Agency shall coordinate oversight of the efforts made to meet the targets with: the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the Air Resources Board, Chairperson of the Energy Commission, and the

President of the Public Utilities Commission. The Secretary of CalEPA leads a "Climate Action Team" made up of representatives from the agencies listed above to implement global warming emission reduction programs and report on the progress made toward meeting the statewide greenhouse gas targets that were established in the executive order. Per the Executive Order, the first Climate Action Team report to the Governor and the Legislature was released in March 2006.

Assembly Bill 32, The California Global Warming Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 directs the CARB) to implement regulations for a cap on sources or categories of sources of GHG emissions. The bill requires that CARB develop regulations to reduce emissions with an enforcement mechanism to ensure that the reductions are achieved, and to disclose how it arrives at the cap. It also includes conditions to ensure businesses and consumers are not unfairly affected by reductions.

AB 32 requirements and milestones are as follows:

- June 30, 2007 – Identification of discrete early action greenhouse gas emissions reduction measures. Three early action measures were approved by CARB on June 21, 2007. Six other discrete early action measures were subsequently approved.
- January 1, 2008 – Establish a 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of mandatory reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.
- January 1, 2009 – Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, the CARB Board adopted the Climate Change Scoping Plan (Scoping Plan) at its meeting.
- January 1, 2010 – Adoption and enforcement of regulations to implement the "discrete" actions. The Board identified nine discrete early action measures including regulations affecting landfills, motor vehicle fuels, refrigerants in cars, tire pressure, port operations, and other sources in 2007 that included ship electrification at ports and reduction of high global warming potential (GWP) gases in consumer products. Regulatory development for the remaining measures is ongoing.
- January 1, 2011 – Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions.
- January 1, 2012 – GHG emissions limits and reduction measures adopted in 2011 became enforceable.

AB 32 codifies S-3-05's year 2020 goal by requiring that statewide GHG emissions be reduced to

1990 levels by the year 2020.

As noted above, CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various categories of emissions. CARB determined that achieving the 1990 emission levels would require a reduction of GHG emissions of by approximately 28.5 percent to achieve in 2020 emissions levels in the absence of new laws and regulations (referred to as "business as usual"). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. As stated in the Scoping Plan, the key elements for reducing California's GHG to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In May 2014, CARB approved the "First Update to the Climate Change Scoping Plan." The first update describes California's progress towards AB 32 goals, stating that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32." Specifically, "if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050."

<u>Senate Bill 1368, Electricity: emissions of greenhouse gases</u>

Also in September 2006, Governor Arnold Schwarzenegger signed Senate Bill (SB) 1368 which

calls for the adoption of a greenhouse gas (GHG) performance standard for in-state and imported electricity generators to mitigate climate change. On January 25, 2007, the California Public Utilities Commission adopted an interim GHG emissions performance standard. This standard is a facility-based emissions standard requiring all new long-term commitments for baseload generation to serve California consumers with power plants that have emissions no greater than a combined cycle gas turbine plant. The established level is 1,100 pounds of CO_2 per megawatt-hour.

Executive Order S-01-07

Executive Order S-01-07 was approved by the Governor on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It also requires that a Low Carbon Fuel Standard for transportation fuels be established for California.

Western Regional Climate Action Initiative

The Western Regional Climate Action Initiative was signed on February 26, 2007 by five states: Washington, Oregon, Arizona, New Mexico, and California. Utah, as well as Manitoba and British Columbia, Canada joined in April 2007. Montana joined in January 2008 and Quebec moved from Observer to Partner status in April 2008. Other United States and Mexican states and Canadian provinces have joined as observers. The Initiative plans on collaborating to identify, evaluate, and implement ways to reduce GHG emissions in the states collectively and to achieve related co-benefits. The Initiative announced recommendations for the design of a regional market-based cap and trade program in September 2008 and released their document "Background Document and Progress Report for Essential Requirements of Mandatory Reporting for the Western Climate Initiative, Third Draft" on January 6, 2009. In addition, a multi-state registry will track, manage, and credit entities that reduce GHG emissions.

Senate Bill 97

In August 2007, Governor Arnold Schwarzenegger signed Senate Bill (SB) 97, CEQA: greenhouse gas emissions. The bill required the OPR, by July 1, 2009, to prepare guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010. On June 19, 2008, OPR released an interim technical advisory for addressing climate change in CEQA documents (OPR 2008). The recommended approach is to identify and quantify Project-related GHG emissions; determine its significance; and if the impact is found to be potentially significant, implement mitigation measures or alternatives that will reduce the impact below significance. Further, the guidance states that the lead agency is not responsible for completely eliminating all Project-related GHG emissions. The approach used in this DEIR is consistent with the current OPR recommendations.

Pursuant to SB 97, OPR released and the Natural Resources Agency adopted CEQA Guideline Amendments (Adopted Amendments) addressing GHG emissions on December 30, 2009 (OPR 2009). The amended State *CEQA Guidelines* went into effect in March 2010. As a result, CEQA now requires a discussion of potential climate change impacts for projects that require environmental analysis. Lead agencies are now required to consider the adverse effects of a project's cumulative contribution to GHG emissions on the environment and determine if a project's climate change impact may be significant. The amended State CEQA Guidelines provide that significance thresholds may be quantitative, qualitative, or in the form of performance-based standards. Various agencies, including the CARB and SCAQMD, have been developing and drafting standards and guidelines for determining the cumulative significance of a project's GHG emissions on global climate change. However, there is currently no single accepted industry practice or methodology for analyzing GHG impacts under CEQA. The approach used in this analysis is to disclose the most recent regulatory activity. The Project's GHG emissions will be evaluated according to the draft thresholds proposed by SCAQMD, discussed in more detail below.

Senate Bill 375

On September 30, 2008, Governor Arnold Schwarzenegger signed Senate Bill (SB) 375 (Steinberg). SB 375 focuses on housing and transportation planning decisions to reduce fossil fuel consumption and conserve farmlands and habitat. This legislation is important to achieving AB 32 goals because greenhouse gas emissions associated with land use, which includes transportation, are the single largest source of emissions in California. SB 375 provides a path for better planning by providing incentives to locate housing developments closer to where people work and go to school, allowing them to reduce vehicle miles traveled (VMT) every year. However, SB 375 does not apply to this Project and is only discussed for informational purposes and is not discussed further.

CARB Draft GHG Thresholds Under CEQA

On October 24, 2008, CARB released the *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significant Thresholds for Greenhouse Gases under CEQA* recommending GHG-related significance thresholds which lead agencies can use in the significance determination pursuant to OPR's request (CARB 2008). The current recommendations are a sector-specific approach to develop threshold for project that result in a substantial portion of the state's GHG emissions. The preliminary interim thresholds are for two sectors: 1) industrial projects, and 2) residential and commercial projects. For industrial projects that do not qualify under existing CEQA statutory or categorical exemptions, CARB recommends that GHG-related impacts may be found to be insignificant if they: (1) meet interim performance standards for construction and transportation-related emissions; and (2) emit no more than 7,000 $MTCO_2E$ from non-transportation operational sources. CARB recommends that residential and commercial projects that do not qualify under existing CEQA statutory or categorical exemptions are presumed to have a less than significant impact related to climate change if: (1) construction activities meet an interim CARB performance standard for

construction-related emissions; (2) operational activities: i) meet the California Energy Commission's Tier II Energy Efficiency goal; ii) meet an interim CARB performance standard for water use; iii) meet an interim CARB performance standard for waste; and iv) meet an interim CARB performance standard for transportation; and (3) the project will emit no more than a "to be determined" limit for metric tons CO_2e per year. Although the CARB 2008 Draft Guidance indicated CARB's intent to provide final guidance to OPR before OPR issued its draft CEQA guidelines, CARB did not release final guidance before the *CEQA Guideline Amendments* were adopted by OPR in December 2009.

South Coast Air Quality Management District Regulations

In addition to current rules and regulations which also address GHG, SCAQMD plans to provide guidance to local lead agencies on determining significance for GHG in their CEQA documents by convening a *GHG CEQA Significance Threshold Working Group* to work with SCAQMD staff on developing GHG CEQA significance thresholds. The SCAQMD began hosting monthly working group meetings in April 2008. The result of the working group meeting on October 22, 2008 was a *Draft AQMD Staff CEQA Greenhouse Gas Significance Threshold* (SCAQMD 2008a) and the *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (SCAQMD 2008b). The Draft Threshold is intended to be interim guidance until statewide significance thresholds or guidance is established. The proposed significance threshold is a tiered approach which allows for flexibility by establishing multiple thresholds to cover a broad range of projects.

The SCAQMD proposal in October 2008 included three tiers of compliance that may lead to a determination that impacts are less than significant, including: (1) projects with greenhouse gas emissions within budgets set out in approved regional plans, to be developed under the SB 375 process; (2) projects with greenhouse gas emissions that are below designated quantitative thresholds: (i) industrial projects with an incremental greenhouse gas emissions increase that falls below (or is mitigated to be less than) 10,000 $MTCO_2e$ /yr; or (ii) commercial and residential projects with an incremental greenhouse gas emissions increase that falls below (or is mitigated to be less than) 3,000 $MTCO_2e$ /yr, provided that such projects also meet energy efficiency and water conservation performance targets that have yet to be developed; (3) projects that purchase greenhouse gas offsets which, either alone or in combination with one of the three tiers mentioned above, achieve the target significance screening level.

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. Currently, the Board has only adopted thresholds relevant to industrial (stationary source) projects.

Since December of 2008, the SCAQMD continued hosting the working group meetings and revised the draft threshold proposal several times although it did not officially provide these proposals in a subsequent document. The most recent working group meeting on September

28, 2010[4] proposed two options lead agencies can select from for GHG screening thresholds of significance in residential and commercial projects and proposes to expand the industrial GHG threshold for use by lead agency. Option 1 proposes a threshold of 3,000 $MTCO_2E$/year for all residential and commercial projects; Option 2 proposes a threshold value by land use type where the numeric threshold is 3,500 $MTCO_2e$/year for residential projects; 1,400 $MTCO_2E$/year for commercial projects; and 3,000 $MTCO_2E$/year for mixed use projects. Although both Options are recommended, a lead agency is advised to use only one Option, and to use it consistently. The project's GHG emissions will be compared to the Option 1 of the SCAQMD recommendations.

Design Considerations

Design considerations refer to ways in which the proposed Project will limit or mitigate for potential impacts to air quality or GHG, through the design of the Project. There are no specific design considerations related to construction of the Project that will reduce significant impacts related to air quality. However, the Riverside County Flood Control and Conservation District (District) will be responsible for the operation and maintenance of the Project. The District maintains its own fleet of vehicles and off-road equipment. All District off-road equipment engines are Tier 3 compliant which reduce emissions from engine exhaust. Ultra low sulfur fuel is also used.

Environmental Impacts Before Mitigation

Threshold: *Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation.*

Air quality impacts can be divided into short-term and long-term impacts. Short-term impacts are usually related to construction and grading activities. Long-term impacts are usually associated with build-out conditions and long-term operations of a project. The following information was derived from the AQIA which is found in Appendix C.

SCAQMD's Regional Significance Threshold (RST) Analysis

Short-Term Impacts – RST Analysis

Short-term emissions consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils,

[4] http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2

covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of this Project (moving approximately 4,624 cubic yards per day), a Fugitive Dust Control Plan or Large Operation Notification is not required.

The thresholds below are from the SCAQMD's *CEQA Handbook* and are the standard thresholds for determining significance under CEQA sanctioned by the SCAQMD. These regional significance thresholds were developed by SCAQMD based on the estimated daily emissions of a major stationary source.

Table III-2-C, SCAQMD CEQA Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_X	CO	SO_X	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operations	lbs/day	55	55	550	150	150	55

Short-term emissions were evaluated using the CalEEMod version 2013.2.2 program. The total estimated construction period for the proposed Project is 15 months, from approximately July 2016through September 2017.[5] The default parameters within CalEEMod were used and these default values reflect a worse-case scenario, which means that Project emissions are expected to be equal to or less than the estimated construction emissions. In addition to the default values used, several assumptions relevant to model inputs for short-term construction emission estimates are:

- The Project footprint is largely vacant. Minimal demolition is required for small buildings (i.e., restrooms) associated with the unimproved San Jacinto River Park. Relocation will not be required. However, the activities will occur concurrently with levee construction and not require additional equipment and thus were not modeled separately.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the mitigation option of watering the Project site three times daily which achieves a control efficiency of 61 percent for PM-10 and PM-2.5 emissions.
- The Project will be constructed in three consecutive phases, as follows.

[5] The construction period and start date are approximate. If construction was delayed, the resulting emissions would be lower as emissions regulations become stricter and technology improves. Although construction could potentially begin earlier in 2016, construction would not occur in 2015. The emissions estimates from construction earlier in 2016 would not result in a measurable change and the impacts would remain the same.

- The first eight months of construction will be used for excavating the borrow area and hauling and distributing that soil throughout the length of the levee alignments. Approximately 800,000 cubic yards of dirt will be excavated from the borrow area.
- Once the soil has been deposited and compacted it will take approximately four months for the cement mixers to construct the protective armoring which prevents levee washout and failure in extreme storm events. This protective armoring consists of a concrete lining that will line the river side of the levee and will extend below the existing ground. The access roads will be graded but not paved.
- The last three months of construction, after the concrete has been laid, 10,000 cubic yards of base material will be delivered and construction completed along the entire levee alignment.

The results of this analysis are summarized in **Table III-2-D**, below.

Table III-2-D
Estimated Daily Construction Emissions

Activity	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Borrow Area Excavation	23.32	262.10	219.55	0.30	34.48	18.78
Concrete Lining	0.64	6.71	8.12	0.02	1.70	0.38
Base Material Delivery	0.32	5.31	4.01	0.01	1.51	0.30
Maximum[1]	**23.32**	**262.10**	**219.55**	**0.30**	**34.48**	**18.78**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: See Appendix A of the AQIA for model output.
[1] Since each phase occurs separately, the maximum emissions are equal to the greater of each phase.

Evaluation of **Table III-2-D** indicates that emissions of criteria pollutants from construction of the Project are above the SCAQMD recommended regional thresholds for NO_X during the first eight months of construction consisting of borrow area excavation and soil hauling, but will be below the SCAQMD thresholds for all other pollutants during subsequent phases of construction.

Long-Term Impacts – RST Analysis

This Project involves the operation and maintenance of various segments of existing levees and riverine corridor as well as the proposed Project features. Long-term emissions from the operation of the Project are in the form of mobile source vehicular emissions from routine

maintenance of the levee using both on-road service trucks and off-road heavy-duty equipment. The District maintains its own fleet of vehicles and off-road equipment. All District off-road equipment engines are Tier 3 compliant to reduce engine exhaust emissions. Ultra low sulfur fuel is also used. The proposed Project includes three different maintenance zones with different maintenance activities allowed within each zone, as described in the AQIA. Typical maintenance activities include: vegetation control via mowing and herbicide application, sediment/debris removal, repair/rehabilitate/restore structures including floodwall repair and re-alignment of low-flow channels adjacent to levees, re-establish maintenance access roads, and annual slope tracking. Inspections are also part of the typical maintenance activities which include: weekly patrol of the facility by a service truck, quarterly levee inspections using a service truck, semi-annual inspections/control check by District survey crews using a service truck, monthly trips by Maintenance Supervisory staff using a service truck, and bi-monthly trips by Maintenance staff in response to complaints using a service truck.
The assumptions relevant to the aforementioned activities are:

<u>Vegetation Control/Mowing</u>

- Mowing will occur in the Structural Maintenance Zone that is approximately 52 acres. It is estimated to occur annually and disturb up to five acres per day. Mowing typically lasts for two weeks and includes a large mower (equivalent to a 255hp rubber tired dozer) that is transported to the site on a lowbed three-axle tractor-trailer (heavy-duty diesel truck). Daily vehicle miles traveled (VMT) is approximately 100. Currently, approximately 50 acres or less is mowed on an annual basis. It is anticipated that approximately 52 acres will be mowed annually once the Project is operational. The daily disturbance will still be five acres per day with the duration of mowing expected at two weeks per year.

<u>Vegetation Control/Herbicide application</u>

- Contact spray herbicide is generally applied between May and October. Maturing plants on the levee access roads, land side levee slope and specific areas within the channel, such as at outlets, are treated. Spraying occurs approximately two times per year for a total of two to four days using one three-axle truck with a 1,000 gallon tank. Daily VMT is approximately 100.

- Residual spray herbicide is applied in areas similar to contact spraying, but occurs during the wet season to arrest sprouting plants. Spraying occurs approximately three times per year for a total of three to six days using one three-axle truck with a 1,000 gallon tank. Daily VMT is approximately 100.

<u>Sediment/Debris removal</u>

- Sediment/debris removal typically occurs three days per year to remove excess sediment and tires, trash, etc., dumped/deposited in the channel rights-of-way. To ensure a worst-case analysis for the expanded riverine corridor, it is assumed to occur five days per year. Two dump trucks and one tracked loader transported to the site on a lowbed three-axle

tractor-trailer are used. One trip for each dump truck is assumed to travel to Lamb's Canyon Landfill (located eight miles away) each day to dispose of the debris. The loader is left on site during removal and the crew takes the dump trucks home. Daily VMT for each dump truck is approximately 132; the daily VMT for the tractor-trailer is approximately 100.

- Trim/haul vegetation includes trimming tree branches and brush that obstruct access roads or that compromise structures/slope protection. Removal occurs twice per year for a total of 20 days using one dump truck and one tracked loader transported to the site on a lowbed three-axle tractor-trailer. There are five trips to Lamb's Canyon Landfill (located eight miles away) each day to dispose of the vegetation. The loader is left on site during removal and the crew takes the dump truck home. Daily VMT for the dump truck is approximately 180; the daily VMT for the tractor-trailer is approximately 100.

Repair/Rehabilitate/Restore Structures

- Floodwall maintenance/repair will be infrequent and as needed if the floodwall is damaged. For a worst-case analysis, this activity can be assumed to occur once per year for 2 days. Typical equipment used for repairs include one cement truck (heavy-duty diesel truck), one loader transported to the site on a lowbed three-axle tractor-trailer, and one water truck. The loader is left on site and the crew takes the water truck home. Daily VMT for the tractor-trailer and water truck is approximately 100. The daily VMT for the cement truck is conservatively estimated to be 40 because it will be rented locally.
- Re-alignment of low-flow channels adjacent to/encroaching upon levees is also infrequent and performed on an as needed basis dependent on the frequency, duration, and velocity of storm events. For a worst-case analysis, this activity can be assumed to occur once per year for three days. Typical equipment used includes one tracked bulldozer and one loader transported to the site on a lowbed three-axle tractor-trailer, one light-duty service truck, and one water truck. The bulldozer and loader and left on site and the crew take the water truck home. Daily VMT is approximately 100.

Re-establishing maintenance access roads

- The access roads are graded as needed to maintain drivability of the earthen roads. Grading typically occurs three times per year for a total of six days. One water truck and one motor grader transported to the site on a lowbed three-axle tractor-trailer are used. The motor grader is left on site and the crew takes the water truck home. Daily VMT is approximately 100. Approximately 300 feet are graded per day.
- Fence repair/includes repairing cut or otherwise damaged chain link fence or reinstalling a length of fence. Repairs are needed approximately 8 to 10 days per year. To be conservative, 10 days per year was evaluated. One two-axle water truck is used and covers approximately 100 VMT per day.

Annual slope-tracking

- Annual slope tracking is prepared to repair, roughen, and inhibit growth on dry side levee slopes by running a tracked bulldozer up and down the slopes. Annual slope tracking lasts about 20 days using a one water truck and one tracked dozer transported to the site on a lowbed three-axle tractor-trailer are used. The tracked dozer is left on site and the crew takes the water truck home. Daily VMT is approximately 100.

Inspections

- The facility is patrolled on a weekly basis using a light-duty service truck. Daily VMT is approximately 100.
- The levee is inspected quarterly using a light-duty service truck. Daily VMT is approximately 100.
- On a semi-annual basis, District Survey crews perform inspections/control checks using a light-duty service truck. Daily VMT is approximately 100.
- Monthly trips are made by the Maintenance Supervisory staff using a light-duty service truck. Daily VMT is approximately 100.
- Bi-monthly trips are made by Maintenance staff in response to complaint calls/inquiries using a light-duty service truck. Daily VMT is approximately 100.

Long-term emissions for typical maintenance activities from off-road equipment were evaluated using the CalEEMod program. The default parameters within CalEEMod were used and these default values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated operations and maintenance emissions. In addition to the default values used, several assumptions relevant to model inputs for long-term operation and maintenance emission estimates are:

- Due to the variability of extreme weather events and associated operations, only a typical maintenance routine was analyzed.
- The SCAQMD long-term thresholds of significance are based on maximum daily emissions. As such, a worst-case typical day under Project operation and maintenance would include: both sediment/debris removal activities (sediment/debris removal and trim/haul vegetation) and an inspection using a light-duty service truck.
- The assumed equipment list for a worst-case typical day includes: 1 service truck, 1 water truck, 2 tracked loaders, 3 dump trucks, and 2 tractor-trailers.
- The off-road equipment (tracked loaders) is assumed to operate for 8 hours a day. Worker commute trips are also included as part of the output and were assumed to travel 40 miles each way. The District's off-road equipment is Tier 3 compliant; therefore, the emissions shown below include CalEEMod's mitigation option for Tier 3engines.

- Light-duty service trucks and tractor-trailers were assumed travel approximately 100 miles per day. Daily VMT for the dump truck hauling vegetation is approximately 180 and daily VMT for the 2 dump trucks hauling sediment and debris is approximately 132 each.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the mitigation option of watering the Project site three times daily which achieves a control efficiency of 61 percent for PM-10 and PM-2.5 emissions.

The results of this analysis are summarized in **Table III-2-E,** and **Table III-2-F**, below.

Table III-2-E, Estimated Daily Project Operation Emissions (Summer)

Activity/Year	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Off-Road Diesel Equipment	0.38	7.30	8.18	0.02	0.49	0.30
On-Road Vehicles	0.45	9.54	4.51	0.03	1.13	0.44
Total	**0.83**	**16.84**	**12.69**	**0.05**	**1.62**	**0.74**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Table III-2-F, Estimated Daily Project Operation Emissions (Winter)

Activity/Year	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Off-Road Diesel Equipment	0.38	7.30	8.18	0.02	0.49	0.30
On-Road Vehicles	0.46	9.94	4.56	0.03	1.13	0.44
Total	**11.10**	**44.62**	**12.16**	**0.03**	**201.77**	**43.31**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Unmitigated emissions from worst-case typical daily operations of the Project will not exceed the SCAQMD regional thresholds for any criteria pollutant in either summer or winter.

RST Analysis Conclusion

Unmitigated emissions of criteria air pollutants from Project construction (short-term) will exceed the SCAQMD established regional thresholds of significance for NO_X. Unmitigated emissions from Project operation and maintenance (long-term) will not exceed the SCAQMD regional thresholds of significance. Therefore, without consideration of any mitigation measures, the Project will have a significant impact to air quality on a regional level during construction. Although implementation of the below-listed mitigation measures (**MM Air 1** through **MM Air 4**) will reduce Project-generated construction emissions, there is no change in terms of the thresholds of significance related to short-term emissions. The Project's short-term construction emissions will still exceed the SCAQMD significance thresholds on a regional level and will result in **significant impacts after incorporation of mitigation measures**.

Operational emissions will be **less than significant without the implementation of mitigation measures**.

SCAQMD's Localized Significance Threshold (LST) Analysis

Recently, as part of the SCAQMD's environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST) methodology (SCAQMD 2008) that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (both short-term and long-term). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). This Project is located in SRA 28.

Methodology

The pollutants analyzed under the LST methodology are NO_2, CO, PM-10, and PM-2.5. According to SCAQMD LST methodology (SCAQMD 2008), only on-site emissions need to be analyzed. SCAQMD has provided LST lookup tables and sample construction scenarios[6] to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the Project site is larger than five acres, the maximum emissions are still below the applicable thresholds.[7] Therefore, the sample construction scenario for the five-acre site was modified using Project-specific information such as the construction equipment usage information.

[6] http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

[7] http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2

Short-Term Impacts – LST Analysis

For short-term localized construction emissions, the maximum daily construction emissions estimated from SCAQMD's sample construction scenarios were used in this analysis (Appendix B). As stated above, only on-site emissions need to be analyzed. On-site construction emissions do not include worker trips, vendor trips, or on-road diesel emissions. SCAQMD has provided LST lookup tables and sample construction scenarios to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although each analyzed construction phase is larger than five acres, **Table III-2-G,** below, shows that the maximum construction-related emissions are still below the applicable thresholds. This also evaluates a worst-case scenario since the thresholds are linear and would be higher for a larger site. Therefore, the LST lookup tables were used for construction emissions.

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the project to the nearest sensitive receptors (in meters). The LST lookup tables only provide thresholds for distances of 25, 50, 100, 200, and 500 meters away from the Project boundary. Two of the three Project construction phases were evaluated: borrow area excavation and concrete lining activities. The third phase, base material delivery, was not evaluated because it resulted in fewer delivery trips than the concrete lining phase and also did not include off-road construction equipment; thus, it would have fewer emissions than the phases that are evaluated.

The disturbance area for the borrow area was assumed to be no more than five acres per day. The closest sensitive receptors to the borrow area are a few residences north of the river off of Soboba Road and east of State Street, approximately 130 meters north from the borrow site. To be conservative, a receptor distance of 100 meters was used. However, it should be noted that the majority of the borrow area is not within 500 meters of sensitive receptors.

A southern portion of the levee, southeast of State Street will be constructed adjacent to an existing mobile home park. For this reason, a distance of 25 meters was chosen. To estimate localized emissions from the two phases, SCAQMD's sample construction scenario worksheets were modified to fit the Project variables. The estimated daily disturbance area for the construction of the levee is 6.89 acres (details in Appendix A of the AQIA) so the 5-acre construction area threshold was used. The estimated daily disturbance areas for the excavation of the borrow area is five acres, which is added to the levee disturbance area of 6.89 acres to provide a worst-case scenario. The results of both Project components are summarized in **Table III-2-G, LST Results for Construction Emissions.**

Table III-2-G, LST Results for Construction Emissions

Pollutant (lbs/day)	Distance	NO_X	CO	PM-10	PM-2.5
5-Acre LST Threshold	**100 meters**	**520**	**4,282**	**59**	**16**
Borrow Area Excavation		283.3	131.5	17.1	12.9
Exceeds Threshold?		**No**	**No**	**No**	**No**
5-Acre LST Threshold	**25 meters**	**371**	**1,965**	**13**	**8**
Levee Construction (concrete lining)		18.3	5.6	0.9	0.8
Exceeds Threshold?		**No**	**No**	**No**	**No**

Evaluation of the table above indicates that emissions from Project construction will not exceed the SCAQMD established LST.

Long-Term Impacts – LST Analysis

This Project involves the operation and maintenance of a river levee. The long-term emissions, as discussed previously, from the operation of the levee are in the form of vehicular mobile source emissions from routine maintenance, without any stationary sources present. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed Project does not include such uses. However, because off-road equipment will be operating in areas along the river in close proximity to existing sensitive receptors (residents), an operational LST analysis was prepared.

The long-term LST analysis was also performed by using the LST look-up tables and sample construction scenarios provide by SCAQMD using the assumptions previously described for a worst-case typical day of operations and maintenance. The worst-case typical day includes the removal of debris and sediment from the channel as well as trimming and hauling of vegetation on a total of approximately 10 acres. However, the following analysis shows that the localized concentrations are below the applicable thresholds. A worst-case receptor distance of 25 meters was chosen because there are existing residents in close proximity to the Project site near State Street.

Table III-2-H, LST Results for Operational Emissions

Pollutant (lbs/day)	Distance	NO_X	CO	PM-10	PM-2.5
5-Acre LST Threshold	**25 meters**	**371**	**1,965**	**4**	**2**
Project Maintenance		26.2	12.3	2.2	1.5
Exceeds Threshold?		**No**	**No**	**No**	**No**

Evaluation of the table above indicates that emissions from Project operations and maintenance will not exceed the SCAQMD established LST.

LST Analysis Conclusion

Based on the LST analysis of the proposed Project, the short-term construction and the long-term operation will not result in an exceedance of the LST at the nearest sensitive receptor f Therefore, the localized air quality impacts from the Project construction and operation are considered **significant without implementation of mitigation measures**.

Threshold Conclusion

The above analysis demonstrates that after implementation of mitigation measures **MM Air 1** through **MM Air 4-5**, the projected short-term emissions from construction of the Project are above the applicable SCAQMD regional threshold for NO_X. The short-term emissions do not exceed SCAQMD's localized significance thresholds without mitigation. Therefore, **the impacts to air quality from construction of this Project are considered regionally significant, but not on a localized level.**

Unmitigated emissions from Project operation and maintenance (long-term) will not exceed the SCAQMD regional thresholds of significance. The long-term operation of the Project will not result in any localized air quality impacts to sensitive receptors in the Project vicinity and will not result in significant localized impacts. Therefore, operational emissions will be **less than significant without implementation of mitigation measures**.

Threshold: *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.*

The portion of the South Coast Air Basin (Basin) within which the Project is located is designated as a non-attainment area for ozone and PM-2.5 under both state and federal standards and for PM-10 under state standards.

SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same (SCAQMD 2003). Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. The SCAQMD regional significance

thresholds for NO_X, are exceeded during the Project's short-term construction. Thus, the Project would have a cumulatively considerable increase in emissions due to construction-related NO_X. In terms of localized air quality impacts, construction of the Project would not have a cumulatively considerable impact due to criteria pollutant emissions. However, the Project's operational emissions would not exceed the SCAQMD's regional threshold for any criteria pollutant. Thus, the Project would not have a cumulatively considerable increase in long-term emissions.

Therefore, the Project is considered to have a cumulatively considerable net increase, albeit short-term, in non-attainment pollutants in the region under both state and federal standards and the impact is considered **significant and unavoidable after implementation of mitigation measures**.

Threshold: *Expose sensitive receptors to substantial pollutant concentrations.*

The closest existing sensitive receptors are located adjacent to a portion of the southern levee alignment generally located southeast of State Street, as previously stated. Short-term emissions will only be generated in the Project area during construction of the Project and as discussed above have been found to be less than significant on a localized level. Additionally, as discussed above, no long-term localized impacts will occur as a result of the operation and maintenance of this Project. Therefore, the Project will not expose sensitive receptors in the Project vicinity to substantial pollutant concentrations during construction or operation. **Hence, the impact is considered less than significant without implementation of mitigation measures.**

Threshold: *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.*

It should be noted that the release of GHG in general and CO_2 specifically into the atmosphere is not of itself an adverse environmental affect. It is the affect that increased concentrations of GHG including CO_2 in the atmosphere has upon the Earth's climate (i.e., climate change) and the associated consequences of climate change that results in adverse environmental affects (e.g., sea level rise, loss of snowpack, severe weather events). Although air quality modeling can estimate a project's incremental contribution of CO_2 into the atmosphere, it is not feasible to determine whether or how an individual project's relatively small incremental contribution (on a global scale) might translate into physical effects on the environment. Since the Earth's climate is determined by the complex interaction of different components of the Earth and its atmosphere, it is not possible to discern whether the presence or absence of GHG emitted by the Project would result in any measurable impact that would cause climate change. Nonetheless, GHG emissions resulting from the Project were quantified and evaluated pursuant to CEQA

The following project activities were analyzed below for their contribution to global GHG emissions:

Short-Term Emissions:

Construction-Related Activities

The CalEEMod model calculates GHG emissions from fuel usage by construction equipment and construction-related activities, like worker trips, for a given project. The CalEEMod estimate does not analyze emissions from construction-related electricity or natural gas. Construction-related electricity and natural gas emissions vary based on the amount of electric power used during construction and other unknown factors which make them too speculative to quantify.
The following table summarizes the CalEEMod output results and presents the GHG emissions estimates for the Project in metric tonnes per year (MT/yr) for CO_2, CH_4, N_2O, and CO_2E.[8]

Table III-2-I, Project Construction Equipment GHG Emissions

Year	Metric Tons per year (MT/yr)			
	Total CO_2	Total CH_4	Total N_2O	Total CO_2E
2016	1,773.72	0.32	0.00	1,780.41
2017	673.68	0.10	0.00	675.84
Total	**2,447.40**	**0.42**	**0.00**	**2,456.25**
			Amortized	**81.88**

Note: Emissions reported as zero are considered below the reporting level and not necessarily equal to zero.

Evaluation of **Table III-2-I, Project Construction Equipment GHG Emissions**, above indicates that the construction of the Project, spanning 15 months, will result in an estimated 2,456 $MTCO_2E$. The draft SCAQMD GHG threshold Guidance document released in October 2008 (SCAQMD 2008b, page 3-8) recommends that construction emissions be amortized for a project lifetime of 30 years to ensure that GHG reduction measures address construction GHG emissions as part of the operational reduction strategies. Therefore, the Project's total construction emissions were spread evenly over 30 years and included in the analysis of the Project's total operational emissions below in **Table III-2-K**.

Long-Term Emissions:

Mobile Source Emissions

The following emissions estimates from Project operations and maintenance were based on all of assumptions beginning on pages III-2-30 for all of the District's operations and maintenance activities occurring in a worst-case typical year. Unlike the long-term RST analysis which analyzed worst-case daily emissions for each criteria pollutant, the GHG analysis is based on annual emission estimates. **Table III-2-J, Mobile Source GHG Emissions**, shows the Project's

[8] CO_2E is the sum of CO_2 emissions estimated plus the sum of CH_4 and N_2O emissions estimated multiplied by their respective GWP.

annual related mobile source emissions.

Table III-2-J, Mobile Source GHG Emissions

Activity	Metric Tons per year (MT/yr)			
	Total CO_2	Total CH_4	Total N_2O	Total CO_2E
Off-Road Diesel Equipment (and associated worker trips)	27.33	0.01	0.00	27.49
On-Road Service Trucks and Diesel Trucks	31.76	0.00	0.00	31.77
Total	**59.09**	**0.01**	**0.00**	**59.26**

The table above indicates that Project-related GHG emissions from mobile sources during typical maintenance activities are approximately 59.26 $MTCO_2E$ annually.

Total Project-Related GHG Emissions

As shown in **Table III-2-K, Annual Project-Related Operational GHG Emissions**, using all the emissions quantified above, the Project's total operational GHG emissions are approximately 141 $MTCO_2E$ per year which includes construction-related emissions amortized over a typical project life of 30 years.

Table III-2-K, Annual Project-Related Operational GHG Emissions

Source	Annual GHG Emissions ($MTCO_2E$)
Construction Emissions[1]	81.88
Mobile Source Operations	59.26
Total	**141.14**

Note: [1] Construction emission amortized over 30 years, per Table III-2-I.

The proposed Project does not fit into the categories provided (industrial, commercial, and residential) in the draft thresholds from SCAQMD (discussed above under Related Regulations, page III-2-26); however, the Project's emissions are still below the draft threshold of 3,000 $MTCO_2E$ for residential and commercial projects. Therefore, the Project will not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; thus, impacts will be **less than significant without mitigation required**.

Threshold: *Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

There are no applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions (i.e., Climate Action Plan) for a linear flood control project such as this. Additionally, the Project will not generate GHG that will cause a significant impact on the environment.

Further, the Project will not obstruct implementation of any plan, policy, or regulation adopted for the purpose of reducing GHG emissions and will be subject to future applicable regulations once adopted. Therefore, **impacts are considered less than significant**.

Proposed Mitigation Measures

An Environmental Impact Report is required to describe feasible mitigation measures which could minimize significant adverse impacts (*CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts related to air quality or to reduce impacts to below the level of significance. The following is a list of the relevant and feasible mitigation measures that the Project will utilize.

In order to reduce NO_X emissions from construction of the Project, the following mitigation measures shall be implemented:

MM Air 1: During construction, mobile construction equipment will be properly maintained according to manufacturers' specifications at an off-site location, which includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on site during construction.

MM Air 2: During construction, all vehicles shall be prohibited from idling in excess of five minutes, both on and off site.

MM Air 3: Construction parking shall be configured to minimize traffic interference.

MM Air 4: The Project shall be required by contract specification to include construction equipment engines that meet or exceed Tier 3 standards. Consideration will be given to contractor's that provide proof that SCAQMD's SOON Program (and/or other applicable grant programs) have been applied for funding. Contract specifications shall be included in project construction documents, which shall be reviewed by the City prior to awarding the construction contract. A copy of each unit's certified tier specification, best available control technology (BACT) documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable piece of equipment.

MM Air 5: All dump trucks used for soil hauling during Project construction shall comply with either 2007 or 2010 engine emission standards pursuant to Title 13, Section 2025(d). Contract specifications shall be included in Project construction documents, which shall be reviewed by the City prior to awarding the construction contract.

Summary of Environmental Effects After Mitigation Measures are Implemented

In an effort to reduce estimated emissions from construction activities, the mitigation measures listed above were considered. Although implementation of the mitigation measures **MM Air 1**

through **MM Air 3** and **MM Air 5** will reduce Project -generated emissions, there are no distinct, SCAQMD-established quantitative reductions associated with them in CalEEMod; therefore, to be conservative, there is no change in the estimated construction emissions from these measures. **MM Air 4** is recommended to reduce NO_X emissions from off-road construction equipment and is quantifiable in CalEEMod. The results of the mitigated regional threshold analysis are shown in **Table III-2-L**, on the following page.

Table III-2-L, Mitigated Estimated Daily Construction Emissions

Activity/Year	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Borrow Area Excavation	9.56	128.77	176.53	0.30	28.43	13.47
Concrete Lining	0.64	6.71	8.12	0.02	1.70	0.38
Base Material Delivery	0.32	5.31	4.01	0.01	1.51	0.30
Maximum [1]	**9.56**	**128.77**	**176.53**	**0.30**	**28.43**	**13.47**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: See Appendix A for model output.
[1] Since each phase occurs separately, the maximum emissions are equal to the greater of each phase.

Although mitigation reduced the NO_X emissions from Project construction, there is no change in terms of the thresholds of significance related to short-term emissions. The Project's short-term construction emissions will still exceed the SCAQMD significance thresholds for NO_X on a regional level after implementation of mitigation. However, the Project's construction emissions do not exceed the LST. Therefore, **the impacts to air quality from construction of this Project are considered regionally significant and unavoidable, but not on a localized level.**

The Project's long-term operation and maintenance emissions do not exceed the SCAQMD's regional or localized significance thresholds and thus the impact is less than significant.

The Project will not generate GHG, either directly or indirectly, that will cause a significant impact on the environment nor will it conflict with or obstruct implementation of any future plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

III-3 BIOLOGICAL RESOURCES

The focus of the following discussion is related to 1) compliance with provisions of an adopted Habitat Conservation Plan (HCP), Natural Conservation Community Plan (NCCP), or other approved local, regional, or state conservation plan, 2) adverse effects, either directly or through habitat modifications, on any species identified as candidates, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service, 3) adverse effects, on riparian habitat or other sensitive natural community, 3) adverse effect on federally protected wetlands, 4) if the project will impede wildlife corridors or the use of a native wildlife nursery, and 5) if the project will conflict with policies protecting biological resources.

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

CH2MHILL	CH2MHILL, *San Jacinto River Levee Project: Biological Resources and Constraints Study*, March 2002. (Available at the City of San Jacinto.)
COR SJVAP	County of Riverside, *County of Riverside General Plan, San Jacinto Valley Area Plan*, October 2003, updated October 2011. (Available at http://planning.rctlma.org/Portals/0/genplan/general_plan_2013/3%20Area%20Plan%20Volume%202/San%20Jacinto%20Valley%20AP.pdf, accessed on September 22, 2014.)
GLA(a)	Glenn Lukos Associates, Inc., *Analysis of Impacts to MSHCP Non-Covered Special-Status Species for the San Jacinto River Levee Stage Four Project, City of San Jacinto, Riverside County, California*, September 12, 2014. (Appendix C)
GLA(b)	Glenn Lukos Associates, Inc., *Determination of Biologically Equivalent or Superior Preservation (DBESP) Analysis For Impacts to the Los Angeles Pocket Mouse, San Jacinto River Levee Stage 4 Project*, July 28, 2014. (Appendix C)
GLA(c)	Glenn Lukos Associates, Inc., Determination of Biologically Equivalent or Superior Preservation (DBESP) Analysis For Impacts to MSHCP Riparian/Riverine Areas, San Jacinto River Levee Stage 4 Project, June 30, 2014. (Appendix C)
GLA(d)	Glenn Lukos Associates, Inc., Jurisdictional Delineation Report, February 23, 2011. (Appendix C)
GLA(e)	Glenn Lukos Associates, Inc., MSHCP Compliance Report, August 1, 2014. (Appendix C)
MSHCP	County of Riverside, *Western Riverside County Multiple Species Habitat Conservation Plan*, Adopted June 17, 2003. (Available at http://www.wrc-rca.org/library.asp#id190, accessed on October 20, 2014.)

RCA	Western Riverside County Regional Conservation Authority, *RCA Joint Project Review, San Jacinto River Levee Project (JPR # 10-04-05-02)*, Revised October 6, 2014. (Appendix C)
SJ GP	City of San Jacinto Planning Department, *City of San Jacinto Draft General Plan*, adopted May 4 2006, Amended October 19, 2012. (Available at http://www.ci.san-jacinto.ca.us/city-govt/general-plan.html, accessed on April 3, 2014.)
SJGP DEIR	City of San Jacinto Planning Department, *San Jacinto General Plan Draft EIR*, April 2006 2006. (Available at http://www.ci.san-jacinto.ca.us/city-govt/general-plan-EIR.html, September 22, 2014.)

Setting

The following discussion of plant and animal species on and around the Project site is based on the project-specific biological evaluations and surveys identified above.

Vegetation

The Project footprint includes the San Jacinto River channel bounded by the existing north and south levees together with adjacent floodplain areas. Outside of the existing levees, the Project area includes additional riparian habitats, as well as disturbed/ruderal areas, and agricultural areas. A large extent of the existing riverbed consists of a largely unvegetated and usually dry streambed. Areas of riparian vegetation located within the existing riverbed, as well as outside of the levees, include scattered cottonwoods and willows, southern willow scrub, mule fat scrub, mature cottonwood/willow riparian forest, and non-native grassland. The Project area also contains exotic and ruderal vegetation, including eucalyptus, tamarisk, pepper trees, and tree tobacco. (GLA(a) See **Figure III-3-1 Vegetation Map**, for mapped vegetation types within the Project footprint[1]. Refer to **Table III-3-A, Mapped Vegetation**, for the approximate acreage of vegetation by type mapped within the Project footprint.

[1] The Project boundary includes a conservation area, approximately 75.5 acres in size, located at the downstream end of the Project area in Reach 1, between the proposed new southern levee and the low flow diversion structure. There are no facilities proposed to be constructed in this area and this area does not include structural or riverine maintenance activities. A conservation easement will be placed over this area and will be grazed in order to manage the vegetation cover. The conservation area is included in the Project boundary as it will be acquired as a part of this Project but it is not included in the Project footprint impacts from construction and maintenance. This area is currently used for agriculture.

Table III-3-A, Mapped Vegetation

Mapped Vegetation Type	Acreage
Agriculture	303
Cottonwood	7
Cottonwood/Willow	9.6
Cottonwood/Willow/Mulefat Scrub	8.6
Disturbed/Developed	54
Exotic	1.8
Mulefat Scrub	7.7
Non-native Grassland/Ruderal	18
Riparian Scrub	27
Riparian Woodland	9
Riversidean Sage Scrub/Non-Native Grassland	0.1
Ruderal	72.7
Sycamore	0.3
Unvegetated riverine	51.8
Willow	0.7
Willow/Mulefat Scrub	1.5

Wildlife

During the on-site biological field evaluations conducted for the proposed Project over a span of nearly a decade (2003-2012), common species of birds, mammals, and reptiles were observed, including those species that are more accustomed to human presence and/or non-native species.

Native and non-native birds observed in the Project area include (but are not limited to):

- Allen's hummingbird (*Selasphorus sasin*)
- American kestrel (*Falco sparverius*)

- American crow (*Corvus brachyrhynchos*)
- Anna's hummingbird (*Calypte anna*)
- ash-throated flycatcher (*Myiarchus cinerascens*)
- barn owl (*Tyto alba*)
- black phoebe (*Sayornis nigricans*)
- Brewer's blackbird (*Euphagus cyanocephalus*)
- brown-headed cowbird (*Molothrus ater*)
- bushtit (*Psaltriparus minimus*)
- California quail (*Callipepla californica*)
- California towhee (*Pipilo crissalis*)
- cinnamon teal duck (*Anas cyanoptera*)
- Costa's hummingbird (*Calypte costae*)
- common raven (*Corvus corax*)
- common yellowthroat (*Geothlypis trichas*)
- downy woodpecker (*Picoides pubescens*)
- european starling (*Sturnus vulgaris*)
- great blue heron (*Ardea herodias*)
- greater roadrunner (*Geococcyx californianus*)
- horned lark (*Eremophila alapestris*)
- house wren (*Troglodytes aedon*)
- house sparrow (*Passer domesticus*)
- house finch (*Carpodacus mexicanus*)
- killdeer (*Charadrius vociferous*)
- lesser nighthawk (*Chordeiles acutipennis*)
- mallard duck (*Anas platyrhynchos*)
- marsh wren (*Cistothorus palustris*)
- mourning dove (*Zenaida macroura*)
- northeren mockingbird (*Mimus polyglottos*)
- Nuttaill's woodpecker (*Picoides nuttallii*)
- olive-sided flycatcher (*Contopus cooperi*)
- red-shouldered hawk (*Buteo lineatus*)
- red-tailed hawk (*Buteo jamaicensis*)
- rock dove (*Columba livia*)
- spotted towhee (*Pipilo maculates*)
- turkey vulture (*Cathartes aura*)
- western kingbird (*Tyrannus verticaulis*)
- western meadowlark (*Sturnella neglecta*)
- white crowned sparrow (*Zonotrichia leucophyrs*)
- white tailed kite (*Elanus leucurus*).

Common small mammals that were either observed directly or indirectly through tracks or droppings, included (but are not limited to):

- Audubon's cotton tail (*Sylvilagus audubonii*)
- Botta's pocket gopher (*Thomomys bottae*)
- Black-tailed jackrabbit (*Lepus californicus*)
- cactus mouse (*Peromyscus eremicus*)
- California ground squirrel *(Spermophilus beecheyi)*
- coyote (*Canis latrans*)
- deer mouse (*Peromyscus maniculatus*)
- desert woodrat (*Neotomoa lepida*)
- Dulzura kangaroo rat (*Dipdomys simulans*)
- Northwestern San Diego pocket mouse (*Chaetodippus fallax fallax*)
- raccoon (*Procyon lotor*)
- striped skunk (*Mephitis mephitis*)
- western harvest mouse (*Reithrodontomys megalotis*).

Reptiles and amphibians observed include (but are not limited to):

- coachwhip (*Masticophis flagellum*)
- coastal whiptail (*Cnemidophorus tigris multiscutatus*)
- gopher snake (*Pituophis melanoleucucs*)
- San Diego horned lizard (*Phrynosoma coronatum blainvillei*)
- side-blotched lizard (*Uta stansburiana*)
- southern pacific rattlesnake (*Cortalus viridis helleri*)
- western fence lizard (*Sceloporus occidentialis*)
- western toad (*Bufo boreas*).

Special-Status Species

<u>Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Narrow Endemic Plant Species</u>

The temporary staging and access area at the downstream portion of the Project is located within the Narrow Endemic Plant Species Survey Area (NEPSSA) Number 3. The target species are associated with Narrow Endemic Plant Species Survey Area 3 (and included in **Table III-3-B, MSHCP NEPSSA Species and Non-MSHCP Special-Status Plants** with

Potential to Occur in Project Vicinity below:

- California Orcutt grass (*Orcuttia californica*)
- Munz's onion (*Allium munzii*)
- Many-stemmed dudleya (*Dudleya multicaulis*)
- San Diego ambrosia (*Ambrosia pumila*)
- Spreading navarretia (*Navarretia fossalis*)
- Wrights's trichocoronis (*Trichocoronis wrightii* var. *wrightii*).

However, the Project footprint does not provide suitable habitat for these species. (GLA (e))

MSHCP Non-Covered Special Status Plant Species

Special status plant species that are not covered under the MSHCP were evaluated and based on two factors: 1) species identified in the California Natural Diversity Database (CNDDB) and the California Native Plant Society's Inventory of Rare and Endangered Plants of California as occurring (either currently or historically) on or in the vicinity of the Project footprint, and 2) any other special-status plants that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs within the Project footprint. The special-status plants evaluated include:

- California satintail (*Imperata brevifolia*)
- chaparral sand-verbena (*Abronia villosa* var. *aurita*)
- paniculate tarplant (*Deinandra paniculata*)
- prairie wedge grass (*Sphenopholis obtusata*)
- Robinson's pepper grass (*Lepidium virginicum* var. *robinsonii*)
- salt spring checkerbloom (*Sidalcea neomexicana*)
- San Bernardino aster (*Symphyotrichum defoliatum*).

These are included in **Table III-3-B, MSHCP NEPSSA Species and Non-MSHCP Special-Status Plants with Potential to Occur in Project Vicinity** on the following page. (GLA(a))

Table III-3-B, MSHCP NEPSSA Species and Non-MSHCP Special-Status Plants with Potential to Occur in Project Vicinity

Species Name	Status	Habitat Requirements	
California Orcutt grass *Orcuttia californica*	Federal: FE State: SE CNPS: Rank 1B.1 MSHCP: Covered	Vernal pools	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
California satintail *Imperata brevifolia*	Federal: None State: None CNPS: Rank 2B.1 MSHCP: Not Covered	Mesic soils in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
Chaparral sand-verbena *Abronia villosa var. aurita*	Federal: None State: None CNPS: Rank 4.2 MSHCP: Not Covered	Sandy soils in chaparral, coastal scrub, and desert dunes.	Occurs. Detected in focused survey.
Many-stemmed dudleya *Dudleya multicaulis*	Federal: None State: None CNPS: Rank 1B.2 MSHCP: Covered	Vernal pools and depressions	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
Munz's onion *Allium munzii*	Federal: FE State: ST CNPS: Rank 1B.1 MSHCP: Covered	Mesic/clay soils in chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
Paniculate tarplant *Deinandra paniculata*	Federal: None State: None CNPS: Rank 4.2 MSHCP: Not Covered	Usually in vernally mesic and sometimes sandy soils located in coastal scrub, valley and foothill grassland, and vernal pools	Potential to occur onsite based on suitable habitat, however presence/absence was not confirmed.
Prarie wedge grass *Sphenopholis obtusata*	Federal: None State: None CNPS: List 2B.2 MSHCP: Not Covered	Mesic soils in cismontane woodland, and meadows and seeps	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	Federal: None State: None CNPS: Rank 4.3 MSHCP: Not Covered	Chaparral, coastal scrub	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
Salt Spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CNPS: Rank 2B.2 MSHCP: Not Covered	Alkaline, mesic soils in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.

Species Name	Status	Habitat Requirements	
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None CNPS: Rank 1B.2 MSHCP: Not Covered	Near ditches, streams, and springs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland (vernally mesic)	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
San Diego ambrosia *Ambrosia pumila*	Federal: FE State: None CNPS: Rank 1B.1 MSHCP: Covered	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. Often in disturbed habitats.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
Spreading navarretia *Navarretia fossalis*	Federal: FT State: None CNPS: Rank 1B.1 MSHCP: Covered	Vernal pools, playas, chenopod scrub, marshes and swamps (assorted shallow freshwater).	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	Federal: None State: None CNPS: Rank 2B.1 MSHCP: Covered	Alkaline soils in meadows and seeps, marshes and swamps, riparian scrub, vernal pools.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.

Federal
FE – Federally Endangered
FT – Federally Threatened

State
SE – State Endangered
ST – State Threatened

CNPS List

Rank 1B – Plants rare, threatened, or endangered in California and elsewhere.
Rank 2A – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 – Plants about which more information is needed.
Rank 4 – Plants of limited distribution (a watch list).

CNPS Threat Code Extensions
0.1 – Seriously endangered in California
0.2 – Fairly endangered in California
0.3 – Not very endangered in California

Wildlife

The Project footprint contains riparian and riverine areas pursuant to the MSHCP Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*. The Project footprint is also located in the Burrowing Owl Survey Area and the Mammal Species Survey Areas for Los Angeles pocket mouse and the San Bernardino kangaroo rat, Section 6.3.2, *Additional Survey Needs and Procedures*. As outlined in Sections 6.1.2 and 6.3.2 of the MSHCP, focused surveys are required for the following species if suitable habitat is present and not being avoided:

- burrowing owl (*Athene cunicularia hypugaea)*
- least Bell's vireo (*Vireo bellii pusillus*)
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)
- Riverside fairy shrimp (*Streptocephalus woottoni*)
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*)

- Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*)
- southwestern willow flycatcher (*Empidonax traillii extimus*)
- vernal pool fairy shrimp (*Branchinecta lynchi*)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). (GLA(e))

These species are included in **Table III-3-C, MSHCP Wildlife Species and Non-MSHCP Special-Status Wildlife with Potential to Occur in Project Vicinity**.

Special status wildlife species that are not covered under the MSHCP were evaluated and based on two factors: 1) species identified in the CNDDB as occurring (either currently or historically) on or in the vicinity of the Project footprint, and 2) any other special-status wildlife that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs within the Project footprint. The special-status wildlife species evaluated include:

- American badger (*Taxidea taxus*)
- coast patch-nosed snake (*Salvadora hexalepis*)
- long-eared owl (*Asio otus*)
- pallid bat (*Antrozous pallidus*)
- pocketed free-tailed bat (*Nyctinomops femorosaccus*)
- rosy boa (*Charina trivirgata*)
- San Bernardino ringneck snake (*Diadiphis punctatus modestus*)
- southern California legless lizard (*Anniella stebbinsi*)
- southern grasshopper mouse (*Onychomys torridus ramona*)
- two-striped garter snake (*Thamnophis hammondii*)
- western mastiff bat (*Eumops perotis californicus*)
- western red bat (*Lasiurus blossevillii*)
- western snowy plover (*Charadrius alenxandrinus nivosus*)
- western yellow bat (*Lasiurus xanthinus*).

These species are included in **Table III-3-C, MSHCP Wildlife Species and Non-MSHCP Special-Status Wildlife with Potential to Occur in Project Vicinity** below. (GLA(a))

Table III-3-C, MSHCP Wildlife Species and Non-MSHCP Special-Status Wildlife with Potential to Occur in Project Vicinity

Species Name	Status	Habitat Requirements	Potential for occurrence
American badger *Taxidea taxus*	Federal: None State: SSC MSHCP: Not Covered	Most abundant in drier open stages of most scrub, forest, and herbaceous habitats, with friable soils.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
burrowing owl *Athene cunicularia hypugaea*	Federal: None State: SSC MSHCP: Covered	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures, such as culverts and underpasses.	Suitable habitat present within Project footprint. Focused survey results were negative.
coast patch nosed snake *Salvadora hexalepis*	Federal: None State: SSC MSHCP: Not Covered	Occurs in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE CDFG: None MSHCP: Covered	Dense riparian shrubbery, preferably where flowing water is present.	Occurs. Detected in focused surveys.
Long-eared owl *Asio otus*	Federal: None State: SSC MSHCP: Not Covered	Riparian habitats are required by the long-eared owl, but it also uses live-oak thickets and other dense stands of trees.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	Federal: None State: None CDFG: CSC MSHCP: Covered	Fine, sandy soils in coastal sage scrub and grasslands.	Occurs. Detected in trapping study.
pallid bat *Antrozous pallidus*	Federal: None State: SSC MSHCP: Not Covered	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Potential to occur onsite based on suitable habitat, however presence/absence was not confirmed.
pocketed free-tailed bat *Nyctinomops femorosaccus*	Federal: None State: SSC MSHCP: Not Covered	Rocky areas with high cliffs in pine-juniper woodlands, desert scrub, palm oasis, desert wash and desert riparian.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.

Species Name	Status	Habitat Requirements	Potential for occurrence
Riverside fairy shrimp *Streptocephalus woottoni*	Federal: FE State: None MSHCP: Covered	Stock ponds, ephemeral pools, prefer warm-water pools that have low to moderate dissolved solids, are less predictable, and remain filled for extended periods of time.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
Rosy boa *Charina trivirgata*	Federal: FE State: SSC MSHCP: Not Covered	Coastal sage scrub, chaparral, or mixed habitats, commonly with rocky soils and outcrops. Also in Oak woodlands and riparian areas bordering scrub habitats	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
San Bernardino kangaroo rat *Dipodomys merriami parvus*	Federal: FE State: None MSHCP: Covered	Typically found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and floodplains, and along washes with nearby sage scrub.	Suitable habitat present within Project footprint. Focused survey results were negative.
San Bernardino ringneck snake *Diadiphis punctatus modestus*	Federal: FE State: None MSHCP: Not Covered	Moist habitats including woodlands, forest, grasslands, chaparral, farms, and gardens.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
Santa Rosa Plateau fairy shrimp *Linderiella santarosae*	Federal: None State: None MSHCP: Covered	Restricted to seasonal southern basalt flow vernal pools with cool clear to milky waters that are moderately predictable and remain filled for extended periods of time. Known only from vernal pools on the Santa Rosa Plateau.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
Southern California legless lizard *Anniella stebbinsi*	Federal: None State: SSC MSHCP: Not Covered	Occurs primarily in areas with sandy or loos organic soil, or where there is plenty of leaf litter. Associated with coastal sage scrub, chaparral, coastal dunes, valley/foothill grasslands, oak woodlands, and pine forest.	Potential to occur onsite based on suitable habitat, however presence/absence was not confirmed.
southern grasshopper mouse *Onychomys torridus ramona*	Federal: None State: SSC MSHCP: Not Covered	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE MSHCP: Covered	Breeds in dense riparian habitats along rivers, streams, or other wetlands.	Suitable habitat present within Project footprint. Focused survey results were negative.
two-striped garter snake *Thamnophis hammondii*	Federal: None State: SSC MSHCP: Not Covered	Aquatic snake typically associated with wetland habitats such as streams, creeks, and pools.	Not expected to occur onsite due to low habitat quality, however, absence

Species Name	Status	Habitat Requirements	Potential for occurrence
			cannot be ruled out.
vernal pool fairy shrimp *Branchinecta lynchi*	Federal: FT State: None MSHCP: Covered	Restricted to seasonal vernal pools, prefers cool-water pools that have low to moderate dissolved solids, are less predictable, and often short lived.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.
western mastiff bat *Eumops perotis californicus*	Federal: None State: SSC MSHCP: Not Covered	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Potential to occur onsite based on suitable habitat, however presence/absence was not confirmed.
western red bat *Lasiurus blossevillii*	Federal: None State: SSC MSHCP: Not Covered	Typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).	Potential to occur onsite based on suitable habitat, however presence/absence was not confirmed.
western snowy plover *Charadrius alenxandrinus nivosus*	Federal: FT State: SSC MSHCP: Not Covered	Sandy of gravelly beaches along the coast, estuarine salt ponds, alkali lakes, and at the Salton Sea.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
western yellow bat *Lasiurus xanthinus*	Federal: None State: SSC MSHCP: Not Covered	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Not expected to occur onsite due to low habitat quality, however, absence cannot be ruled out.
western yellow billed cuckoo *Coccyzus americanus*	Federal: None State: SE CDFG: None MSHCP: Covered	Prefers moist thickets, willows, overgrown pastures, and orchards.	Project footprint does not contain suitable habitat. No additional focused surveys or conservation required per the MSHCP.

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FSC – Federal Species of Concern

State
SE – State Endangered
ST – State Threatened
SSC – Species of Special Concern
CFP – California Fully-Protected Species

MSHCP Riparian, Riverine, and Vernal Pool Areas

The Project footprint contains approximately 71 acres of riparian areas and 51.6 acres of unvegetated riverine areas as defined by the MSHCP. The Project footprint does not contain vernal pools. (GLA(c))

Jurisdictional Resources

As outlined in the Project specific Jurisdictional Delineation Report (GLA(d)), the Project footprint contains the San Jacinto River, which is regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act and by the California Department of Fish and Wildlife (CDFW[2]) pursuant to Sections 1600–1603 of the California Fish and Game Code. The majority of USACE jurisdiction in the Project footprint consists of the San Jacinto River, which is considered relatively permanent water (RPW) by the USACE. The San Jacinto River is a tributary to Lake Elsinore, which is a tributary to Temescal Creek, which is a tributary to the Santa Ana River, which is a tributary to the Pacific Ocean. In addition to the San Jacinto River, an adjacent wetland and single agricultural drainage ditch were also identified and delineated, both of which are located on the outside of the levee from the main river channel. The San Jacinto River consists of an ephemeral to intermittent drainage exhibiting an ordinary high water mark (OHWM) through signs of an incised channel, the presence of litter and debris, shelving, and sediment deposits. The adjacent wetland is located outside of the existing levee and has no surficial connection to the San Jacinto River or other waters of the U.S. The agricultural ditch conveys flows in an easterly direction, terminating without any surficial connection to the San Jacinto River or other waters of the U.S. The USACE jurisdiction in the Project footprint totals approximately 87.5 acres, none of which consist of jurisdictional wetlands.

All of the drainage features within the Project area have been determined to be USACE jurisdictional waters subject to regulation pursuant to Section 401 and 404 of the Clean Water Act and do not need to be addressed separately pursuant to Section 13260 of the State of California Water Code, the Porter-Cologne Act. Section 401 of the Clean Water Act requires any applicant for Section 404 permit to obtain certification from the State that the discharge will comply with the applicable effluent limitation and water quality standards. In California this certification is obtained from the Regional Water Quality Control Board (RWQCB). (GLA(d)) See **Figure III-3-2, USACE/RWQCB Jurisdictional Areas** and for mapped jurisdictional areas within the Project footprint.

The CDFW jurisdiction in the Project footprint consists of the San Jacinto River and associated riparian habitat. CDFW jurisdiction within the Project footprint totals approximately 124.5 acres, of which approximately 71 acres consists of vegetation riparian habitat. (GLA(d)) See

[2] Effective January 1, 2013, the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW), although its services and purpose has not changed. This document includes several references to CDFG and the Fish and Game Code, all of which coincide with the services, purpose and mission of the CDFW. Because applicable statues have not yet been updated, this document and related technical reports refers, in some instances, to the CDFW as the CDFG.

Figure III-3-3, CDFW Jurisdictional Areas for mapped jurisdictional areas within the Project footprint.

Thresholds of Significance

The City of San Jacinto has not established local CEQA significance thresholds as described in Section 15064.7 of the State *CEQA Guidelines*. However, the City of San Jacinto's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to biological resources may be considered potentially significant if the project would:

- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan;
- 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 the California Department of Fish and Game or the U.S. Fish and Wildlife Service;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to: marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or establish native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.

Related Regulations

Federal Endangered Species Act (ESA)

The Federal Endangered Species Act of 1973 (16 U.S.C. 1531–1543) and subsequent amendments, provide for the conservation of endangered and threatened species and the habitats on which they depend. A federally-endangered species is a species facing extinction throughout all or a significant portion of its geographical range. A federally-threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federally-threatened or endangered species on a site generally imposes severe constraints on development; particularly if development would result

in a “take” of the species or its habitat. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct. Harm in this sense can include any disturbance to habitats used by the species during any portion of its life history.

California Endangered Species Act (CESA)

California (Fish and Game Code 2050 *et seq.*) establishes that it is the policy of the state to conserve, protect, restore, and enhance Threatened or Endangered species and their habitats. CESA mandates that state agencies should not approve projects which would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. CESA requires state lead agencies to consult with the CDFG during the CEQA process to avoid jeopardy to threatened or endangered species. CESA prohibits any person from taking or attempting to take a species listed as endangered or threatened (Fish and Game Code Section 2080). Section 2080 of the Fish and Game Code, provides the permitting structure for CESA. The “take” of a state-listed Endangered or Threatened species or Candidate species, will require incidental take permits as authorized by CDFW.

California Fish and Game Code Sections 1600–1603

Pursuant to Division 2, Chapter 6, Sections 1600–1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFW Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways...
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by [CDFW] as natural waterways...
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions...

Thus, CDFW jurisdictional limits closely mirror those of the USACE. Exceptions are CDFW's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition

of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

Clean Water Act Section 404

Pursuant to Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in USACE regulations at 33 CFR Part 328.3(a) as:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or
(iii) Which are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;
(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

(8) Waters of the United States do not include prior converted cropland.

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes for the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual and Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands);
- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the take, possession, or destruction of any birds, their nests or eggs. The proposed Project will be required to comply with the MTBA and California Fish and Game Code, which prohibits the take of migratory and native bird species or their nests.

Multiple Species Habitat Conservation Plan (MSHCP)

The MSHCP serves as a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP), pursuant to Section (a)(1)(B) of the ESA, as well as a Natural Communities Conservation Plan

(NCCP) under the State NCCP Act of 2001. The MSHCP constitutes a Special Purpose Permit under the MBTA. The plan encompasses all 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, Wildomar, Menifee, Canyon Lake, Norco, Eastvale, Jurupa Valley, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. The overall biological goal of the MSHCP is to conserve covered species and their habitats, as well as maintain biological diversity and ecological processes while allowing for future economic growth within a rapidly urbanizing region.

Federal and state wildlife agencies approved permits required to implement the MSHCP on June 22, 2004. Implementation of the MSHCP will conserve approximately 500,000 acres of habitat, including land already in public or quasi-public ownership, and about 153,000 acres of land in private ownership that will be purchased or conserved through other means. The money for purchasing private land will come from development mitigation fees, other local sources, as well as state and federal funds.

The MSHCP includes a program for the collection of development mitigation fees; policies for the review of projects in areas where habitat must be conserved; and policies for the protection of riparian areas, vernal pools, and narrow endemic plants. It also includes a program for performing plant, bird, reptile, and mammal surveys.

The intent of the MSHCP is to ensure the survival of a range of plants and animals and avoid the cost and delays of mitigating biological impacts on a project-by-project basis. It would allow the incidental take (for development purposes) of species currently listed and their habitat. It would also allow the incidental take of some species that are currently not listed, but which might be listed in the future.

As the proposed Project is not a development project (residential, commercial, industrial), but a public works/infrastructure project it is not subject to conservation land acquisition through the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process. However, the proposed Project is a public project located within the Criteria Area and is thus required to go through the Joint Project Review (JPR) process.

Design Considerations

The staging area located adjacent to State Street was initially located on the east side of State Street. The staging area was relocated to the west side of State Street to reduce impacts to sensitive habitats and species associated with the San Jacinto River, including riparian vegetation.

The existing southern levee was not proposed to be maintained but to be allowed to erode away from future storm events and flows down the river corridor. To a great extent the existing earthen southern levee provides live-in and refugia habitat for Los Angeles pocket mouse

(LAPM). The revised proposal calls for the existing southern levee to be built back up following storm events that largely or completely erode them in order to continue to provide habitat for LAPM.

Although segments of the existing southern levee will need to be removed (as shown in **Figure I-2-6, Proposed Project Features**), an additional segment in Reach 2, just upstream of Sanderson Avenue bridge was initially proposed for removal. This segment was re-evaluated and determined that it could remain in place in order to reduce impacts to sensitive habitats and species associated with the San Jacinto River including riparian habitat associated with CDFG streambeds and habitat for LAPM.

Installation and maintenance of sandy low-slope ramps along the existing Potrero Debris Basin spillway was added to the proposed Project to allow for better passage by Los Angeles pocket mouse between Potrero Basin and the existing river corridor.

Acquire and manage the approximately 75.5 acre triangle area between the proposed southern levee and the low flow diversion structure at the downstream extent of the Project area. This area does not need to be acquired for the construction of facilities and is not included within the proposed Structural or Riverine Maintenance Zones. It will be acquired and the growth of vegetation managed by grazing so that it may have some value to LAPM as refugia.

In the initial Project proposal the entire Riverine Maintenance Zone (RMZ) within each reach was to be mowed annually. The maintenance protocol was modified to reduce impacts in the following ways:

- The RMZ in Reach 1 in the existing river corridor was shortened by approximately 7,000 feet;
- In Reach 1 only a 50-foot-wide strip between the existing levees would be allowed to be mowed annually. This would be a continuation of the present maintenance regime in that reach and would foster the continued recover of habitat for the least Bell's vireo (LBV);
- In Reach 2, and in the RMZ of Reach 1 between the low flow diversion structure and the existing southern levee, vegetation would be managed by grazing instead of mowing. Moreover, grazing would alternate between the northern-half and the southern-half of the reach every year. Compared with mowing, the District's current maintenance method to managing vegetation in the Project area, grazing would minimize potential impacts to sensitive mammals and their burrows.
- The RMZ upstream of the State Street Bridge (Reach 3) was removed from the proposed Project altogether to reduce impacts to riparian habitat, including occupied LBV and LAPM habitat.
- A 233-foot wide riparian corridor encompassing 77.8 acres was added to the Project in Reaches 1 & 2. More vegetation increases flood depths between the levees, therefore the height of the levee was raised to accommodate the greater flood depths.

Environmental Impacts Before Mitigation

Threshold: *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

Western Riverside County MSHCP

The proposed Project and was reviewed by the Regional Conservation Authority (RCA) through the JPR process. Extensive consultation with the RCA and Wildlife Agencies (CDFW and USFWS) was conducted during the JPR process from April 2010 to October 2014. At the completion of JPR the RCA found that "the proposed Project demonstrates consistency with the requirements of the MSHCP" (RCA).

MSHCP Conservation Area

The MSHCP establishes Criteria Area boundaries in order to facilitate the process by which properties are evaluated for inclusion in the MSHCP Conservation Area. The Criteria Area is an area significantly larger than what may be needed for inclusion in the MSHCP Conservation Area. Proposed projects within the Criteria Area are evaluated using MSHCP Conservation Criteria. The Criteria Area is an analytical tool, which assists in determining which properties require conservation under the MSHCP.

The Project Site is located within the San Jacinto Valley Area Plan (Subunit 1: Gilman Springs/Southern Badlands). The Project Site is located within or spans the following Criteria Cells and Cell Groups: Cells 2170 and 2264 of Cell Group J, Cell 2265 of Cell Group K, Cells 2266 and 2363 of Cell Group L, Cell 2364 of Cell Group M, Cell 2463 of Cell Group Q, Cell 2570 of Cell Group T, Cell 2675 of Cell Group W, Cell 2893 of Cell Group Z, and independent Cells 2365, 2461, 2462, 2568, 2569, and 2674 that are not associated with a Cell Group (see **Figure 3.3-4, MSHCP Criteria Area**).

Section 7.3.7 of the MSHCP states that "Within the Criteria Area, flood control facilities (improvements and new construction) that are undertaken by a Permittee are Covered Activities." The proposed Project includes modification and improvements to the existing levees and riverbed as well as new construction of a southern levee in order to provide 100-year flood control protection to the Project area. Based on this, the Project is considered a Covered Activity. The Project alignment does extend through the Criteria Area, including areas that are described for Conservation. However, since the nature of the Project is to construct facilities that when completed will not hamper or conflict with the overall Reserve Assembly goals of the area, and since the construction itself will be temporary in nature, the implementation of the Project will not adversely affect the Reserve Assembly goals of the MSHCP. (RCA)

Public/Quasi-Public (PQP) Lands are existing conservation lands under the MSHCP (see **Figure 3.3-4, MSHCP Criteria Area**). The Project boundary includes a small 6.42 acre overlap with the PQP lands just east of Sanderson Avenue and in the southern/upstream portion of the Project. The PQP land east of Sanderson Avenue is owned by the County of Riverside and includes the

Protero Basin outlet structure and access roads. The proposed levee improvements do not directly affect existing PQP land and the construction of sandy ramps for connectivity will improve reserve function. The PQP land at the upstream end of the Project is also owned by Riverside County. The overlap affects an existing access road associated with existing levee maintenance on the south edge of the San Jacinto River. The construction of the levee along the PQP lands would not affect the conservation value of these PQP lands, and therefore no PQP replacement is required. (RCA)

Cores and Linkages

As outlined in the MSHCP Compliance Report for this Project (GLA(e)), the Cells and Cell Groups associated with the Project footprint target lands in order to conserve lands for Existing Constrained Linkage C (middle reach of the San Jacinto River) and Proposed Core 5 (upper reach of San Jacinto River).

Existing Constrained Linkage C consists of the middle segment of the San Jacinto River, starting just west of State Street and extending to the downstream end of the Project footprint. This Linkage connects Proposed Core 5 in the east (upper San Jacinto River area) with Proposed Constrained Linkage 20 to the west. It is also connected to Proposed Core 3 (Badlands/Potrero area) via Proposed Constrained Linkage 21. Existing Constrained Linkage C is constrained on all sides by existing development, has large amounts of area potentially affected by edge (approximately 240 acres of the total 245 acres), and possesses a high perimeter-to-area (P/A) ratio (230 feet per acre). However, this Constrained Linkage is largely surrounded by an open space/conservation planned land use. Therefore, edge effects may not affect the Linkage to such a strong degree. The MSHCP states that the maintenance of existing floodplain processes along the San Jacinto River is important for a number of the Narrow Endemic Plant Species identified as Planning Species for the Linkage.

Planning Species associated with Existing Constrained Linkage C include arroyo toad, LAPM, mountain plover, white-faced ibis, and six Narrow Endemic Plant Species. The Project footprint does not occur within the MSHCP survey area for the arroyo toad, and as such there are no project-specific requirements for the arroyo toad. Though the riverbed does provide the opportunity for dispersal of arroyo toad, the Project footprint does not contain suitable breeding habitat for arroyo toads.

A portion of the temporary construction staging area occurs within the NEPSSA, however, the portion of the Project within the NEPSSA does not contain suitable habitat for the Narrow Endemic Plant Species. The Project footprint does not contain suitable breeding habitat for white-faced ibis, however, the agricultural areas located within the proposed riverine corridor expansion area have the potential to support foraging individuals and groups of ibises. The agricultural areas also represent potential winter foraging habitat for the mountain plover.

The Project footprint contains habitat with long-term conservation value (LTCV) for LAPM. Implementation of the Project will widen the river corridor for the majority of the length of

Existing Constrained Linkage C within the Project boundary, resulting in approximately 296 acres of expanded riverine corridor ("expanded riverine corridor" does not include the approximate 78 acre riparian corridor to be created/restored as this area would not be expected to provide suitable LAPM habitat due to the vegetation make up and thickness). This will increase the amount of available habitat for LAPM as well as lower the perimeter to area (P/A) ratio by increasing the inner acreage. As such, the Project will help to support the MSHCP goals for Existing Constrained Linkage C.

Proposed Core 5 is comprised of the portion of the upper San Jacinto River extending from the San Jacinto Mountains to just west of State Street. It is contiguous with Core Areas in the San Jacinto Mountains and areas downstream along the San Jacinto River. Planning Species for which habitat is provided within this Core include mountain yellow-legged frog, arroyo toad, LBV, southwestern willow flycatcher (SWWF), San Bernardino kangaroo rat (SBKR), LAPM, yellow warbler, Cooper's hawk, bobcat, and mountain lion. Maintenance of floodplain processes and water quality of the San Jacinto River is important for these species, as well as maintenance of habitat quality. This Core likely provides for movement of mammals such as mountain lion and bobcat, connecting to Core Areas in the San Jacinto Mountains, Lake Perris, and San Jacinto Wildlife Refuge.

The portion of the Project within Proposed Core 5 does not contain suitable habitat for mountain yellow-legged frog or arroyo toad, and is not within the MSHCP survey areas for these species, and as such there are no project-specific requirements for these species. As discussed above, the Project footprint does contain habitat with LTCV for LBV and LAPM. The majority of suitable habitat for these species in Proposed Core 5, upstream of State Street will not be adversely affected by the Project.

The Project will not affect the corridor function of the San Jacinto River for large mammals such as the mountain lion and medium-size mammals, such as the bobcat. The Project will substantially widen the riverine corridor within Existing Constrained Linkage C (and the downstream end of Proposed Core 5), which will increase the corridor function for the San Jacinto River for LAPM and other species.

As a result of the Project design, including the avoidance of important riparian and riverine habitat, expansion of the riverine corridor, and the maintenance of the movement corridor for larger mammals, the Project will support the MSHCP goals for Proposed Core 5.

Biological Issues and Considerations

The MSHCP identifies four biological issues/considerations for the San Jacinto Valley Area Plan (Subunit 1) that are applicable to the Project, including:

- Maintain Core Area for bobcat
- Maintain Core and Linkage Habitat for mountain lion
- Maintain Core Area for the San Bernardino kangaroo rat

- Determine presence of potential Core Area for the Los Angeles pocket mouse along the San Jacinto River and its tributaries

The Project will maintain the corridor function of the San Jacinto River for bobcat and mountain lion, and will enhance the function by widening the river corridor by as much as 600 feet downstream of State Street. As such, the Project will support the applicable biological issues and considerations for the portions of the San Jacinto River within the Project footprint.

In accordance with the MSHCP, the proposed Project was also reviewed for consistency with the MSHCP Section 6.1.2 (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), Section 6.1.3 (Protection of Narrow Endemic Plant Species), Section 6.1.4 (Guidelines Pertaining to the Urban/Wildlands Interface) and Section 6.3.2 (Additional Survey Needs and Procedures). The proposed Project's consistency with these MSHCP sections is discussed below.

Consistency with MSHCP Section 6.1.2

Volume I, Section 6.1.2 of the MSHCP describes the process through which the protection of Riparian/Riverine Areas and Vernal Pools shall occur within the MSHCP Plan Area. The purpose is to ensure that the biological functions and values of the riparian/riverine and vernal pool habitat areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSHCP Conservation Area are maintained.

<u>Riparian Areas</u>
Volume I, Section 6.1.2 of the MSHCP defines Riparian/Riverine Areas as follows:

> *Riparian/Riverine Areas are lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend on soil moisture from a nearby fresh water source.*
>
> *With the exception of wetlands created for the purpose of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.*

As outlined in the MSHCP Compliance Report (GLA(e)), the Project footprint, including both the construction footprint and the three maintenance zones, contains approximately 71 acres of riparian habitat and 51.6 acres unvegetated riverine areas as defined by the MSHCP. Construction of the Project and frequent structural maintenance will result in unavoidable permanent impacts to approximately 22 acres of riparian vegetation and 1 acre of unvegetated riverine areas. Construction-related impacts include the construction of the new levees, reconstruction/enhancement of existing northern levee segments, the removal of existing levee segments, construction staging and access, excavation at the State Street Bridge (i.e., State Street Bridge Treatment), and the borrow area. In addition to the permanent impacts, the

Project will temporarily impact approximately 10.4 acres of riparian habitat and 44.8 acres of unvegetated riverine areas. The temporary impacts to riparian habitat are attributed to the Riverine Maintenance Zone (RMZ), where vegetation will be impacted by grazing maintenance. Temporary impacts to unvegetated riverine areas are attributed to temporary construction activities, structural maintenance, and riverine maintenance, and will not result in the permanent loss of non-habitat riverine functions.

Least Bell's Vireo, Southwestern Willow Flycatcher, Yellow-billed Cuckoo

Suitable habitat for the LBV occurs at the Project site within riparian forest, woodland, and scrub habitats along the San Jacinto River. Riparian forest/woodland occurs in open and dense stands within the riverbed and along the existing levees, and are composed predominantly of Fremont's cottonwood (*Populus fremontii*) and willow (*Salix* spp.), with a riparian scrub understory of mule fat (*Baccharis salicifolia*) and willow. Riparian scrub habitat occurs in varying density and maturity within the existing riverbed. Dense riparian scrub with a riparian forest overstory exhibits the most optimal breeding and foraging conditions for LBV. Moderate density riparian scrub also provides potential breeding and foraging habitat, however low density, open riparian scrub generally does not provide habitat for this species. Focused LBV surveys were conducted. Survey methods followed the 2001 U.S. Fish and Wildlife Service (USFWS) protocol for this species. LBV was detected in Reach 1 and Reach 3. Reach 2 generally does not provide suitable vegetated habitat to support LBV.

The MSHCP species objectives for LBV states that "if survey results are positive, 90 percent of the occupied portions of the property that provide for long-term conservation value (LTCV) for the vireo shall be conserved in a manner consistent with conservation of the vireo." Based on the positive detections of LBV within the Project footprint (including the Limited Maintenance Zone), approximately 50.2 acres of riparian habitat is considered habitat with LTCV for LBV. The current habitat mapping is a snapshot in time, and due to cycles of scouring and re-vegetation (including habitat restoration), the extent and location of suitable LBV habitat will vary over time.

Of the approximate 22 acres of permanent impacts to riparian habitat, approximately 11.6 acres consists of habitat with LTCV for LBV. In addition, of the 10.4 acres of temporary impacts, approximately 2.8 acre consists of LBV habitat. The Project will not remove entire patches of LBV habitat with LTCV, and will generally not fragment occupied habitat. Impacts will consist of the removal of vegetation along the edges of more extensive occupied habitat for purposes of levee construction and enhancement, and Riverine Maintenance.

Additional temporary indirect impacts to LBV could occur if construction and maintenance of the proposed Project occurs during the breeding season (generally mid-April to August). Noise associated with heavy equipment near riparian vegetation has the potential to affect foraging and/or nesting activities, including breeding success. However, implementation of the

avoidance and minimization measures contained in Section 7.5.3 and Appendix C of the MSHCP could reduce such impacts.

The MSHCP requires focused surveys for the SWWF within areas of suitable riparian habitat. There are three subspecies of willow flycatcher known from southern California, of which only the SWWF (*Empidonax traillii extimus*) is a resident during the breeding period. The other two subspecies (*E. t. adastus* and *E. t. brewsteri*) pass through southern California during the spring and fall migrations, but are not residents. Because it is extremely difficult to distinguish the three subspecies from each other, a technical determination of SWWF is made when a willow flycatcher is detected at any time during the third survey period, regardless of whether any evidence of breeding is observed, or if willow flycatchers are detected earlier exhibiting behaviors of courtship and/or nesting. If no willow flycatchers are detected during the third survey period, and none are detected during an earlier survey period exhibiting courtship/nesting behaviors, then it can be determined that SWWF is absent.

The SWWF breeds in dense riparian habitats along rivers, streams, or other wetlands. An important characteristic of SWWF habitat is the presence of dense vegetation (often described as thickets), usually throughout all vegetation layers. Nearly all SWWF breeding habitat is associated with (or in proximity to) standing/flowing water or very saturated soil. Although these conditions are not typical of the Project site, discrete areas exist within the Project Site (upstream of State Street) with the potential to support SWWF, particularly during wetter years.

Within and adjacent to the Project footprint, potential habitat (i.e., suitable vegetation structure) for SWWF occurs primarily within riparian forest/woodland and riparian scrub habitats upstream of State Street, including within the riverbed and adjacent floodplain terraces. Riparian forest areas are composed predominantly of cottonwood and arborescent willows with a riparian scrub understory of mule fat and willow shrubs. Riparian scrub habitat occurs in varying density and maturity within the existing riverbed.

Focused SWWF surveys were conducted in the Project footprint. Survey methods followed the U.S. Fish and Wildlife Service (USFWS) protocol for this species. Three willow flycatchers (*E. traillii*) were detected during second survey period approximately three quarters of a mile west of the Sanderson Avenue Bridge; however, willow flycatchers were not detected during the third survey period. No willow flycatchers were detected upstream of State Street during any of the survey visits. As such, it was determined that willow flycatchers detected were spring migrants. Based on the lack of positive detections of SWWF in 2008 or 2012, the Project footprint does not contain habitat with LTCV for the SWWF as defined by the MSHCP. No additional surveys, analysis, or conservation are required under Section 6.1.2 of the MSHCP for SWWF.

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is usually found in riparian areas. The species requires dense riparian woodlands with a well-developed understory. Breeding is restricted to river bottomland and other habitats where there is a dense understory associated with slow moving water. Willow is almost always a dominant component of the vegetation. The western yellow-billed cuckoo requires fairly large areas of riparian habitat, usually adjacent to agricultural lands for breeding. The Project footprint does not contain suitable habitat for the western yellow-billed cuckoo. No additional surveys, analysis, or conservation are required under Section 6.1.2 of the MSHCP for the western yellow-billed cuckoo.

Vernal Pools and Fairy Shrimp

Volume I, Section 6.1.2 of the MSHCP defines vernal pools as: "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, drainage characteristics, uses to which it has been subjected, and weather and hydrologic records." The Project footprint does not contain any vernal pools as defined by the MSHCP, or any other seasonal ponding features with the potential to support listed fairy shrimp. Therefore, the Project will not impact vernal pools, and as such will be compliant with Volume I, Section 6.1.2 as it pertains to vernal pools.

Volume I, Section 6.1.2 of the MSHCP requires the mapping of suitable habitat for three species of listed fairy shrimp, including the Riverside fairy shrimp (*Streptocephalus woottoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), and the Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*). Suitable habitat includes stock ponds, ephemeral pools, and other features as determined appropriate by a qualified biologist. Within suitable habitat, focused surveys are to be conducted following USFWS survey protocols.

Riverside fairy shrimp are restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds. Riverside fairy shrimp prefer warm-water pools that have low to moderate dissolved solids, are less predictable, and remained filled for extended periods of time. All known habitat lies within annual grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.

Santa Rosa Plateau fairy shrimp are restricted to seasonal southern basalt flow vernal pools with cool clear to milky waters that are moderately predictable and remain filled for extended periods of time. The Santa Rosa Plateau fairy shrimp is known only from vernal pools on the Santa Rosa Plateau.

Vernal pool fairy shrimp are restricted to seasonal vernal pools. The vernal pool fairy shrimp prefers cool-water pools that have low to moderate dissolved solids, are less predictable, and often short lived. In Western Riverside County, the vernal pool fairy shrimp is currently known from three locations: Skunk Hollow, the Santa Rosa Plateau, and at Salt Creek. Vernal pool fairy shrimp is most abundant on the Santa Rosa Plateau.

The Project footprint does not contain suitable habitat for the Riverside, Santa Rosa Plateau, or vernal pool fairy shrimp. No additional surveys, analysis, or conservation are required under Section 6.1.2 of the MSHCP for fairy shrimp.

Determination of Biologically Equivalent or Superior Preservation

The Project is required by the MSHCP to provide biologically equivalent or superior preservation such that the habitat values for riparian species are maintained, with an emphasis on the species identified under "Purpose" in Section 6.1.2 of the MSHCP, which includes LBV. The measures outlined below were identified as necessary to provide superior preservation as compared to the existing condition, as outlined in the Determination of Biologically Equivalent or Superior Preservation prepared for Riparian and Riverine Areas and LBV (Appendix C), and are also outlined as **Mitigation Measures MM Bio 1-4** below. The Project will establish a 77.86-acre riparian corridor (average width of 233 feet) beginning downstream of State Street and extending to the downstream limits of Reach 1. The acreage of the riparian is based on the replacement of permanent impacts to riparian habitat and riverine areas. As part of the 77.86-acre riparian corridor, the Project will create 43.8 acres of riparian habitat suitable for least Bell's vireo nesting, to offset impacts to riparian habitat due to construction and structural maintenance. The created riparian habitat will consist of cottonwood/willow/mule fat scrub and forest habitats. The riparian habitat will be created in two strips on either side of the overall riparian corridor, with the middle of the corridor (the low portion of the created channel) left alone for natural recruitment. The created habitat shall include native container plants, cuttings/poles, and/or seed mix throughout the 43.8 acres. The mitigation program shall include the removal of non-native plant species, trash and debris during implementation and in perpetuity. The riparian creation/restoration area shall be monitored and maintained for a minimum of five years, with reports submitted annually, to ensure successful establishment of the habitat to the agreed upon performance standards. Groundwater monitoring wells will be used within the riparian creation/restoration area (Reach 1 and 2) as well as within existing riparian habitat to be avoided (Reach 1). The riparian creation/restoration area will not be subject to any maintenance for flood control purposes and shall only receive maintenance consistent with a habitat conservation area, such as the removal of non-native plants, trash and debris, and replacement of native plant species as necessary to

achieve performance standards. The riparian creation/restoration area shall be protected in perpetuity with a conservation easement. The 38.62 acres of existing riparian habitat within the Limited Maintenance Zones (LMZ) will be protected in perpetuity with a conservation easement. The LMZ areas will not be subject to flood control maintenance, except as described above. The 38.62 acres of riparian habitat within the LMZ will not be actively enhanced, i.e., it will be allowed to vegetate passively, but it will be subject to the removal of non-native vegetation as is proposed for the riparian creation/restoration corridor. The construction of the proposed southern levee, together with the direct removal of portions of the existing southern levee, will expand the riverine corridor by approximately 295.86 acres (Figure 6 – Expanded Riparian/Riverine Corridor), which together with the 77.86-acre riparian corridor, 38.62 acres of avoided riparian habitat (LMZ), 7.81 acres of avoided riverine areas (LMZ), and 44.83 acres of temporary impacts to riverine areas, will result in a post-project total of approximately 464.98 acres of riparian/riverine areas as compared with the 122.57 acres of riparian/riverine areas that exists in the Project footprint today.

In addition to the creation/restoration of the proposed riparian corridor and avoidance of additional riparian habitat within the LMZ areas, the Project includes general enhancement within the overall post-project boundary (Reach 1 and 2) of the San Jacinto River, in perpetuity. Enhancement activities shall include the removal of specified exotic plant species (i.e., woody non-native species), the removal of trash and debris, and the management of non-native bird species (e.g., Brown-headed Cowbirds, European Starlings, and English Sparrows). Enhancement will also occur within Reach 3 (upstream of State Street), to be separately addressed in a long-term maintenance agreement (LTMA) between the District and CDFW. The following table summarizes the mitigation components to offset impacts to riparian habitat, including LBV habitat with long-term conservation value and unvegetated riverine areas.

Table III-3-D, MSHCP Summary of Riparian/Riverine Mitigation

Mitigation Type	Acreage
Riparian Corridor	77.86 acres (including 43.80 acres of suitable LBV habitat)
Avoided Riparian Habitat (LMZ)	38.62 acres
Avoided Riverine Areas (LMZ)	7.81 acres
Temporary Riverine Impacts	44.83 acres
Expanded Riverine Corridor	295.86 acres
General Enhancement	Throughout Project footprint in perpetuity
Conservation Easement (RMZ)	257.50 acres
Conservation Easement (LMZ)	155.58 acres

A Determination of Equivalent or Superior Preservation (DBESP) was prepared for the Project to address potential impacts to riparian-riverine areas and habitat for the least Bell's vireo. The DBESP was reviewed by the RCA, USFWS, and CDFW and revisions incorporated to address their comments. With the proposed features and mitigation measures and with a Habitat Mitigation and Monitoring Plan (HMMP) that will be provided to the RCA for approval (with copy the Wildlife Agencies), as well as execution of the conservation easements and enhancement activity plans prior to construction start, the Project demonstrates consistency with Section 6.1.2 of the MSHCP. (GLA(e), RCA)

Consistency with MSHCP Section 6.1.3

Volume I, Section 6.1.3 of the MSHCP requires that within identified Narrow Endemic Plant Species Survey Areas (NEPSSA), site-specific focused surveys for Narrow Endemic Plant Species will be required for all public and private projects where appropriate soils and habitat are present. Surveys are to be conducted in the appropriate season, in accordance with established protocols (for species for which protocols have been established). However, this area does not contain suitable habitat for the target Narrow Endemic Plant species, and as such focused surveys are not required for NEPSSA species. The Project will be compliant with Volume I, Section 6.1.3.

Consistency with MSHCP Section 6.1.4

The MSHCP Urban/Wildlands Interface Guidelines (*MSHCP Volume I, Section 6.1.4*) are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area. As the MSHCP Conservation Area is assembled, development is expected to occur adjacent to the Conservation Area. Future development in proximity to the MSHCP Conservation Area may result in edge effects with the potential to adversely affect biological resources within the Conservation Area. To minimize such edge effects, the guidelines shall be implemented in conjunction with review of individual public and private development projects in proximity to the MSHCP Conservation Area and address the following:

- Drainage
- Toxics
- Lighting
- Noise
- Invasives
- Barriers
- Grading/Land Development

The Project will not result in any long-term edge effects to adjacent Conservation Areas. The Project will reduce edge effects to existing habitat within the San Jacinto River by relocating portions of the south levees to the landward side of existing riparian habitat, and by expanding the riverine corridor by as much as 600 feet in width downstream of State Street. The riverine

corridor expansion will increase the interior acreage of the channel and lower the Perimeter/Area (P/A) ratio of the San Jacinto River within the Project footprint.

The Project incorporates, as applicable, the guidelines related to controlling adverse effects from development adjacent to the MSHCP Conservation Area, and as such will be compliant with *Volume I, Section 6.1.3*.

Consistency with MSHCP Section 6.3.2

Volume I, Section 6.3.2 of the MSHCP states that, in addition to the Narrow Endemic Plant Species addressed in *Volume I, Section 6.1.3*, surveys may be needed for other certain plant and animal species in conjunction with MSHCP implementation in order to achieve full coverage for these species. Within areas of suitable habitat, focused surveys are required for additional plant species if a project site occurs within a designated Criteria Area Plant Species Survey Area. The Project is not located within the CAPSSA.

Burrowing Owl
The Project footprint occurs within the MSHCP burrowing owl survey area **(Figure 3.3-6, MSHCP Wildlife Species Survey Areas)** and contains suitable habitat. Focused burrowing owl surveys were conducted for the Project; however, no burrowing owls were detected within the Project footprint. As the site contains suitable habitat for burrowing owl, a pre-construction survey shall be conducted prior to initiation of project construction activities. Objective 6 of the MSHCP species-specific burrowing owl objectives states that pre-construction presence/absence surveys for the burrowing owl will be conducted where suitable habitat is present. Surveys will be conducted within 30 days prior to disturbance. If burrowing owls are detected, then passive relocation (use of one-way doors and collapse of burrows) will occur outside the nesting season. Take of active nests will be avoided.

The Project footprint also occurs within the survey areas for LAPM and SBKR (see **Figure 3.3-6, MSHCP Wildlife Species Survey Areas**).

Los Angeles Pocket Mouse
The LAPM is a MSHCP Covered Species. The San Jacinto River, including the Project footprint, is inhabited by one of the key populations of LAPM within the MSHCP Plan Area. As noted above, the proposed Project is located within Subunit 1 (Gilman Springs/Southern Badlands) of the San Jacinto Valley Area Plan. LAPM is a Planning Species for the subunit, with one of the biological issues/considerations to determine the presence of a potential Core Area for LAPM along the San Jacinto River and its tributaries. LAPM were captured throughout the Project footprint. Besides the common deer mouse (*Peromyscus maniculatus*), LAPM was the second most commonly captured species.

Volume I, Section 6.3.2 of the MSHCP requires projects to designate areas with “habitat with long-term conservation value” (LTCV) for LAPM based on detections of the species within the

MSHCP LAPM survey area. Furthermore, the MSHCP requires that 90% of the areas providing habitat with LTCV shall be avoided until it is demonstrated through the MSHCP that the conservation goals for LAPM have been met. As outlined in the MSHCP Compliance Report (GLA(e)), based on the locations of LAPM captures and habitat suitability within the Project footprint approximately 160.6 acres of LAPM habitat with LTCV within the Project footprint was identified. The current habitat mapping is a snapshot in time, and due to cycles of scouring and re-vegetation (including habitat restoration), the extent and location of suitable LAPM habitat will vary over time.

Construction activities will result in approximately 19.75 acres of impacts to LAPM habitat with LTCV, of which 5.28 acres would be considered a permanent impact. Temporary impacts (14.47 acres) are attributed to the removal of existing levee segments and the proposed State Street Bridge Treatment.

Project construction negative impacts will consist of substrate disturbances from various types of vehicles, and various types and intensities of associated human activity, in specific work areas, at various staging areas, and along access roads leading to staging areas and construction zones. Specific construction disturbances are predicted to primarily include or be associated with intensive grading activity, with its expected attendant effects such as vegetation removal, substrate compaction, vehicle noise, ground vibration, and the presence of humans. Construction is anticipated to occur over a period of 15 months. There will be no nighttime construction or corresponding need for nighttime lighting.

Most construction work, and access to construction sites, will occur in disturbed areas, including along the tops of existing levees that are not useful to the target species, and in lands lying southward (outside) of the south levee. However, some substrate disturbance is expected to occur in portions of the riverbed, which may on occasion be occupied by LAPM. Extensive levee removal will occur upstream and downstream from the State Street Bridge. Removal of a section of the existing south levee near the eastern end of the Project Area, and the installation of a new levee in this area, will occur in habitats with known LAPM populations. Thus, some incidental take of this species will be unavoidable, although the level of such take would be difficult to quantify. Nonetheless, the Project was designed to minimize the impacts to the existing river corridor and southern levee to the greatest extent feasible, thereby minimizing impacts to LAPM habitat.

Structural maintenance along the levees will permanently impact approximately 13.28 acres of LAPM habitat. See **Figure 14, Impacts to Existing LAPM Habitat with LTCV**. Maintenance will be periodically required at the various levees in the Project Area. Such maintenance will require the use of heavy equipment and the disturbance of habitats that may be occupied by LAPM. The south levee west of State Street, and the south levee west of Sanderson Avenue, exhibited numerous LAPM captures, indicating that this habitat area is generally well occupied by this pocket mouse. Thus, grading may result in the loss of some individuals of this species. No

positive impacts are expected from this activity, except possibly where grading may reduce vegetation cover that has gotten excessively dense, and where an increase in open ground would serve to expand the number of LAPM able to utilize a particular area.
Bridge underpasses and approaches will be kept open of flood-inhibiting features, to insure the necessary hydraulic capacity of the river system. Also, structural integrity of bridges and other hard structures will be maintained as needed. Activities will involve the removal of trees and shrubs/sediments/debris by mowing/hauling/herbicide use/grazing/etc., and access road construction/maintenance. However, grasses and forbs will not be removed or prevented from growing in the river corridor under the bridges. Sediment or debris removal activities involving heavy equipment would be expected to crush burrow systems in sandy substrates. Since LAPM were captured at or near the edges of bridges, periodic maintenance activities in these areas are likely to occasionally kill some individuals of this species. It is anticipated that expansive areas of bare ground (devoid of all vegetation) would preclude or significantly reduce travel of LAPM under the bridges. Therefore, grasses and forbs, and possibly low amounts of shrub cover, will be allowed to grow in these areas in order to provide vegetation cover that will encourage LAPM to continue to utilize underpasses as movement corridors.

Roads will be maintained at the bases of all levees and bridges, to allow for the regular repair and maintenance of these structures over time. Since LAPM were captured at the edges of the active river channel adjacent to bridges and levees in some locations, this road maintenance activity would likely lead to the occasional loss of individuals of this species. Nonetheless, LAPM would be expected to readily negotiate narrow dirt maintenance roads, if suitable cover is present on either side of the roads.

The use of herbicides to control vegetation is proposed on an as-needed basis along the structural maintenance roads along the inside of the proposed southern levee armored slope, on the top of the levee, and along the maintenance road on the outside (non-riverward side) of the levee. Herbicides such as Roundup and Fusilade have been used to kill herbaceous vegetation in endangered species habitat. Thus, negligible negative effects from these chemicals are anticipated on the target species.

The proposed riverine (grazing) maintenance will result in temporary impacts to approximately 53.57 acres of habitat with LTCV. Vegetation grazing within Reaches 1 and 2 of the Riverine Maintenance Zone (RMZ) will occur on an alternating basis from one side of the RMZ (lengthwise) to the other. Half of the RMZ will be grazed up to once a year, the other half the following year. Sediment and debris removal would be conducted on an as needed basis determined by the depth of accumulated sediment that would compromise the designed hydraulic capacity.

The use of sheep grazing may be preferable to mowing because of the relatively light body weights of sheep. This method of maintaining low vegetation cover has been successfully used by the Center for Lands Management in Riverside County to manage Stephens' kangaroo rat

habitat in upland habitats, at March Air Force Base and at the Crown and Round Valley portion of the Southwestern Riverside County Multispecies Reserve. It is likely that sheep grazing would be quite useful in managing riparian vegetation growth in the river corridor of the Project Area. The relatively low weight of sheep is likely lower than the per square inch weight of mechanical mowers. However, flocks of many sheep if used, with the effect of myriad flocking hooves on burrows in sand, might be destructive as well. The relative effect of sheep grazing versus mowing on resident small mammals in sandy substrates is not known. The relative impacts of these two methods of vegetation control on LAPM may be found to be similar and could be determined through a well-designed field study.

Although the effect of grazing will be considered a permanent impact to riparian vegetation, the effects of riverine maintenance is considered an ongoing temporary impact to LAPM habitat with LTCV, since the RMZ is expected to continue to support LAPM (and therefore provide habitat with LTCV).

The Project footprint is located almost entirely within the existing 100-year floodplain. Consequently, the existing LAPM LTCV area is almost entirely located within the existing 100-year floodplain. Of the 160.60 acres of existing LAPM LTCV area, 158.0 acres of it is modeled to be inundated in a 100-year storm event. After implementation of the Project, 152.6 acres of the total existing LAPM LTCV Area is modeled to be inundated in a 100-year storm event. However, the existing LAPM LTCV Area that is removed from the 100-year floodplain is largely located in the construction footprint (northern levee enhancement) and would no longer be considered LAPM LTCV, as it is the existing earthen levee that will be reconstructed with concrete armoring at that location. The existing LAPM LTCV Area inundated in a 100-year storm event is essentially unchanged with implementation of the Project.

Measures are proposed to offset permanent and temporary impacts to 86.6 acres of LAPM habitat with LTCV, in order to ensure that the Project will result in a biologically equivalent or superior alternative to the 90% avoidance threshold. <u>The measures outlined below were identified as necessary to provide superior preservation as compared to the existing condition, as outlined in the Determination of Biologically Equivalent or Superior Preservation prepared for LAPM (Appendix C), and are also outlined as **Mitigation Measures MM Bio 5-11** below.</u>

The following is a summary of the proposed measures:

- Acquire/expand existing LAPM habitat with LTCV within the Project area by approximately 239.9 acres, and implement an adaptive management program of riverine maintenance to minimize impacts to LAPM habitat (including 68.04 acres of existing LAPM habitat within the RMZ), for a total of 307.94 acres. The program includes the maintenance of one half of each reach per year, and vegetation maintenance achieved through grazing in lieu of mechanical mowing;
- Acquire 4.7 acres of LAPM refugia habitat. The 4.7-acre area will be managed by the District;

- Manage 33.1 acres in the District's Potrero Debris Basin, an additional 49.0 acres associated with an existing RCA easement within Potrero, and the 4.7-acre property for LAPM LTCV/refugia habitat. Management activities for refugia for the benefit of target species should include once-a-year monitoring of vegetation cover and conditions (including native and non-native grasses and shrubs) by a qualified biologist. Maintenance should include the removal of grasses and grass mats, the deposition of sand if necessary, and/or shrub plantings, as needed to provide the appropriate vegetation cover and overall conditions required by LAPM. Dense grass cover can be reduced or essentially eliminated over a relatively short period of time with the use of gramicides (i.e. grass herbicides such as Fusilade and/or Envoy). Potrero Debris Basin is owned by the District and will be managed by the District. The 4.7-acre property will be acquired and managed by the District. Activities within Potrero Debris Basin (including the existing RCA easement) and the 4.7-acre property will be reported to the RCA annually;
- Manage a 75.5-acre area (the "triangle area") located between the proposed low flow diversion structure and the western terminus of the proposed southern levee. Management within this area will be limited to grazing;
- Avoid 74.00 acres of LAPM habitat with LTCV within the Project's Limited Maintenance Zone (LMZ) areas. The LMZ areas will be protected in perpetuity with a conservation easement. During maintenance activities, temporary fencing and/or GPS systems will be used to ensure avoidance of LMZ/Conservation Easement areas;
- Install sandy low slope ramps (Potrero Basin spillway and low flow diversion structure) as well as rebuild the existing southern levee affected by erosion due to storm events. The ramps and remnant southern levee sections will be maintained in perpetuity. Scattered vegetation will be allowed to grow on the ramps to provide cover for LAPM; and
- Develop a long-term management plan (LTMP) for the in-perpetuity management for all LAPM mitigation lands, including the Potrero Debris Basin, the Driscoll property, the triangle area, and existing/expanded LAPM habitat within the Project footprint. Management of lands within the triangle area will be limited to grazing. Management of all remaining lands will include, at a minimum, the management of non-native plant species (methodology, frequency, and disposal to be included in the LTMP); vegetation monitoring protocols (methodology and frequency of data collection to be included in LTMP); vegetation data analysis (methodology and frequency), small mammal monitoring protocols (methodology and frequency of data collection); proposed adaptive management strategies (including when adaptive management will be implemented); and the minimum qualifications of the land management entity proposed to manage the LAPM mitigation lands.

A Determination of Equivalent or Superior Preservation (DBESP) was prepared for the Project to address potential impacts to habitat for the LAPM. The DBESP was reviewed by the RCA, USFWS, and CDFG and revisions incorporated to address their comments. Altogether the

Project will provide 544.24 acres of mitigation for LAPM. With the proposed features and mitigation measures and with the Conservation Easements and management and maintenance plans provided to the RCA and copied to the Wildlife Agencies prior to construction start, the Project demonstrates consistency with Section 6.3.2 of the MSHCP. (GLA(e), RCA) *San Bernardino Kangaroo Rat*

The SBKR is a Covered Species under the Western Riverside County MSHCP. The estimated historical distribution of this species included all of the part of the San Jacinto River containing the Project footprint. As with the LAPM, the SBKR is a Planning Species for Subunit 1 of the San Jacinto Valley Area Plan, and one of biological goals for Subunit 1 is to maintain the Core Area for SBKR.

No SBKR were trapped within the Project footprint during the 2012 trapping survey. Many locations trapped during the 2012 survey occurred in the same sites that had yielded SBKR in 2006 trapping efforts, suggesting that the low numbers of this species noted in those previous surveys were no longer present or were present in undetectably low numbers. Reasons for the 2012 apparent absence of SBKR at scattered locations that harbored very low numbers of this species in previous trapping surveys are not obvious but may be related to the well-known problems with the long-term persistence of small populations. In contrast to the absence of SBKR in the 2012 trapping survey, LAPM were common in all reaches of the Project area, and very common in Reaches 1 and 2. A variety of field surveys for SBKR have been conducted in the lands upstream (offsite) from the Project footprint. The species occurs in good numbers in the general area upstream from the Lake Park Drive Bridge, where it has been reported for many years. Trapping surveys for the Hemet-San Jacinto Integrated Recharge and Recovery Program Project located upstream of Lake Park Drive Bridge have recorded SBKR across several hundreds of acres at various densities ranging from 0.2-16.3/acre. These results contrast strongly with those reported for trapping surveys conducted within the Project footprint.

Based on the lack of SBKR captures within the Project area the Project area is not considered to support a viable population of SBKR and is therefore not considered occupied and the Project is not required to designate habitat with LTCV for SBKR pursuant to Volume I, Section 6.3.2 of the MSHCP.

With implementation of mitigation measure **MM Bio 12,** the completion of a pre-construction burrowing owl survey and passive relocation or avoidance of any active nests, the Project will be compliant with *Section 6.3.2* of the MSHCP.

<u>Stephens' Kangaroo Rat (SKR)</u>

The proposed Project is located within the boundary of the Riverside County Habitat Conservation Agency Habitat Conservation Plan (HCP) for the SKR. The SKR HCP establishes a mechanism for the long-term conservation of the species. Potential impacts to the SKR are mitigated on a regional basis through compliance with the MSHCP and the SKR HCP. The proposed Project is not located within a Core Reserve of the SKR HCP and does not require

replacement of habitat pursuant to the SKR HCP. Implementation of the Project will not conflict with provisions of the SKR HCP.

During the 2012 trapping survey for LAPM and SBKR a single female SKR was captured in the Potrero Debris Basin. The Project footprint does not contain open grassland habitat that is suitable for SKR. The areas adjacent to the existing San Jacinto River corridor are largely used for agriculture and are routinely disturbed from cropping and discing activities or used for dairies. SKR were not captured in the San Jacinto River corridor and Project implementation would not result in the loss of habitat suitable for SKR and would not likely result in a loss of a significant number of individuals. However, Project construction could result in the loss of individuals of SKR if they occur in the area at that time. SKR is covered species under the MSHCP. SKR is adequately conserved without additional survey and conservation requirements under the MSHCP. Payment of the MSHCP mitigation fee and compliance with the requirements of the MSHCP are intended to provide full mitigation under CEQA, the National Environmental Policy Act (NEPA), Federal Endangered Species Act, and California Endangered Species Act (CESA) for the impacts to the species and habitats covered by the MSHCP (MSHCP, Vol. I, p. 6-3). The Project is in compliance with the MSHCP. Potential impacts to the SKR are mitigated on Project specific loss of suitable habitat and regional basis through compliance with the MSHCP and payment of the MSHCP mitigation fee. Although Project impacts to SKR are mitigated through compliance with the MSHCP the Project may still require Take Authorization for SKR. "The Long Term SKR HCP provides Take Authorization for SKR within its boundaries. The MSHCP will provide Take Authorization for SKR outside the boundaries of the SKR HCP" (MSHCP, Vol. I, Section 9, p. 9-106). Thus, the SKR HCP will provide any required Take Authorization as the Project is located within the SKR HCP boundaries.

With implementation of **Mitigation Measures MM Bio 1** through **MM Bio 13** Project implementation will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan and therefore, impacts are **less than significant.**

Threshold: *Adversely effect, either directly or through habitat modifications, any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*

MSHCP Covered Species

As outlined above only a small portion of the Project footprint (temporary staging area and access north of Ramona Expressway) is located within the MSHCP Narrow Endemic Plant Species Survey Area (NEPSSA). A habitat assessment was conducted for this area and it was determined the Project footprint does not contain suitable habitat for these species. No additional focused surveys or conservation is required per the MSHCP. The proposed Project will not adversely effect, either directly or through habitat modifications, sensitive plant species covered under the MSHCP.

As outlined above the Project footprint contains suitable habitat for the following MSHCP covered species with additional survey requirements pursuant to Sections 6.1.2 and 6.3.2 of the MSHCP: burrowing owl, least Bell's vireo, Los Angeles pocket mouse, San Bernardino kangaroo rat, and southwestern willow flycatcher. Focused surveys were conducted and based on the results portions of the Project footprint are considered occupied by least Bell's vireo and Los Angeles pocket mouse. Although the Project will adversely effect, directly and through habitat modifications, Determinations of Equivalent or Superior Preservation (DBESP) were prepared for the Project to address potential impacts to Riparian/Riverine areas and habitat for the LBV and LAPM. The DBESPs were reviewed by the RCA, USFWS, and CDFG and revisions incorporated to address their comments. The Project would be biologically superior to the existing condition for riparian/riverine areas and LBV habitat with the implementation of avoidance and mitigation measures including the expansion of the existing riverine corridor and creation of a riparian corridor, improving an existing MSHCP linkage, increasing water quality benefits, expanding habitat for MSHCP target species, including providing connectivity of LBV habitat between Reach 1 and Reach 3 by establishing suitable habitat within Reach 2, and providing and overall mitigation package that will enhance the existing biological functions and values within the Project footprint. (GLA(c)) The Project would be biologically superior to the existing condition for LAPM as it will ultimately enhance and contribute to the management of key Core Areas for LAPM through the expansion of the San Jacinto River riverine corridor, conservation of existing LAPM habitat within the designated LMZ, acquisition and management of adjacent LAPM refugia/LTCV habitat, and implementation of an adaptive management program for maintenance within the designated RMZ. (GLA (b))

As outlined in the MSHCP, Volume I, Section 6 (p. 6-3) "payment of the mitigation fee and compliance with the requirements of Section 6.0 [of the MSHCP] are intended to provide mitigation under the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Federal Endangered Species Act, and the California Endangered Species Act for impacts to the species and habitats covered by the MSHCP, pursuant to agreements with the U.S. Fish and Wildlife Service, the CDFG and/or any other appropriate participating regulatory agencies and as set forth in the Implementing Agreement for the MSHCP." Therefore, impacts to MSHCP Covered Species from Project implementation do not require additional mitigation under CEQA.

With project design, compliance with the MSHCP, and implementation of mitigation measures **MM Bio 1** through **13**, the Project will not result in significant impacts to burrowing owl, least Bell's vireo, and Los Angeles pocket mouse, species covered under the MSHCP.

Species Not Covered Under the MSHCP

Chaparral sand verbena (*Abronia villosa var. aurita*) was detected in 2003 within the Project footprint. Chaparral sand verbena is designated by CNPS as a Rank 1B.1 species, referring to plants that are rare, threatened, or endangered in California or elsewhere. The sand verbena is not federally or state listed. Chaparral sand verbena is associated with sandy soils in chaparral, coastal scrub, and on sand dunes. Within the current Project area, potential habitat for the sand verbena is limited to sandy soils associated with the earthen levees and portions of the river channel. Outside of the levees, the Project area is disturbed and not expected to support the sand verbena. The Project site also has the potential to support the paniculate tarplant (*Deinandra paniculata*). The tarplant is designated by CNPS as a Rank 4.2 species. Rank 4 plants have a relatively low sensitivity, with Rank 4 representing a watch list for plants of limited distribution. The paniculata tarplant is primarily associated with sage scrub and valley and foothill grassland habitats, oftentimes areas that have been subject to past disturbance. Portions of the Project site have a potential to support the paniculate tarplant, including areas located outside of the river channel that have not been too heavily disturbed by agricultural practices. (GLA(a))

Although the chaparral sand verbena was detected in the Project footprint and the paniculate tarplant has the potential to occur, the majority of the Project area is not expected to support these species due to the level of disturbance from existing land uses, or due to a lack of suitable habitat within the river channel. Potential impacts, if any, could occur as a result of the enhancement of the existing northern levee, removal of existing levee segments, or other construction activities within the footprint of the existing river channel. Future maintenance activities may have the potential to impact the plant species, including riverine (grazing) maintenance, though these impacts would be limited. Based on the limited potential distribution of the species within the Project area, and/or the general low level of sensitivity, impacts to "non-covered" special-status plants would be less than significant. (GLA(a))

The Southern California legless lizard is designated as a CDFW California Species of Special Concern. The legless lizard occurs primarily in areas with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, or pine-oak woodland; or sycamores, cottonwoods, or oaks that grow on stream terraces. The legless lizard can often be found under surface objects such as rocks, logs, sheets of cardboard and plywood, carpet, etc. The legless lizard has a potential to occur within the Project footprint, though most likely limited to leaf litter areas outside of the existing southern levee, primarily upstream of State Street. The Project footprint has the potential to support several bat species for foraging, including the pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus*

blossevillii), and western yellow bat (*Lasiurus xanthinus*), all of which are designated as CDFW California Species of Special Concern. Bats generally have the potential to forage onsite, and may have the potential to roost in structures such as the Sanderson Avenue Bridge and State Street Bridge if adequate crevices exist to support bat roosting. (GLA(a))

Potential impacts to the legless lizard from construction may be attributed to the construction of the new southern levee; however, impacts are not expected to occur from the enhancement of the existing northern levee, removal of existing levee segments, or other construction activities, due to the general lack of suitable habitat in these areas. Future maintenance activities are generally not expected to impact the legless lizard. Structural maintenance zones will be maintained with a frequency such that the legless lizard would generally not be expected to establish in these areas. Potential impacts to the legless lizard would be less than significant. (GLA(a))
Potential direct impact to bats would generally be limited to the removal of foraging habitat associated with riparian vegetation to be impacted. Bats are generally not expected to roost in the vegetation to be removed, although larger trees with cavities, such as cottonwoods and sycamores may have the potential to support limited roosting. However, impacts to larger trees from Project implementation would be limited. If bats roost within the Project footprint, they would likely be limited to crevices within structures, including under the Sanderson Avenue Bridge and State Street Bridge. However, the Project would not result in any direct impacts to the bridges. Potential indirect effects could occur due to temporary construction noise, though these effects would be very limited. Post-construction, there would not be any direct or indirect impacts to special-status bats. Potential impacts to special-status bats would be less than significant. (GLA(a))

Potential adverse effects to sensitive species, including California legless lizard pallid bat pat, western mastiff bat, western red bat, and western yellow bat from Project implementation are **less than significant**.

Threshold: *have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.*

As outlined above, the Project footprint includes areas that meet the definition of riparian and riverine areas pursuant to Section 6.1.2 of the MSHCP and Project implementation will adversely affect some of these areas. However, a Determination of Equivalent or Superior Preservation (DBESP) was prepared for the Project to address potential impacts to riparian-riverine areas and habitat for the least Bell's vireo. The DBESP was reviewed by the RCA, USFWS, and CDFG and revisions incorporated to address their comments. With the proposed features and mitigation measures and with a Habitat Mitigation and Monitoring Plan (HMMP) provided to the RCA for approval with copy the Wildlife Agencies, as well as execution of the

conservation easements and enhancement activity plans prior to construction start, the Project demonstrates consistency with Section 6.1.2 of the MSHCP. (GLA(c & e), RCA)

A jurisdictional delineation was prepared for the Project footprint to determine CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. CDFW jurisdiction associated with the Project totals 124.57 acres, of which 70.93 acres consist of vegetated riparian habitat. The San Jacinto River within the Project footprint is divided into three reaches by Sanderson Avenue and Bridge Street. Vegetation within Reach 1 (downstream of Sanderson Avenue) includes mulefat, narrow-leaved willow, Fremont's cottonwood, and black willow, with an understory dominated by ripgut brome, Russian thistle, and red brome. Vegetation within Reach 2 (between Sanderson Avenue and State Street) includes mulefat, narrow-leaved willow, Fremont's cottonwood, and black willow, with an understory dominated by ripgut brome, Russian thistle, and red brome. Vegetation within Reach 3 (upstream of State Street) includes mulefat, narrow-leaved willow, Fremont's cottonwood, and black willow, with an understory dominated by ripgut brome, Russian thistle, and red brome. (GLA(d))

The construction phase will result in the permanent removal of 14.67 acres of CDFW riparian habitat due to the enhancement of the existing northern levee, the removal of existing southern levee segments, construction of the Metropolitan Water District (MWD) grout curtain, excavation of sediment and debris under and around the State Street Bridge, and the removal of sediments from borrow sites. Construction will also result in the permanent modification of 1.0 acre of unvegetated streambed due to the enhancement of the northern levees. An additional 1.95 acres of unvegetated streambed would be temporarily modified as a result of the removal of existing southern levee segments, excavation, and borrow activities. (GLA(d))

Table III-3-E, Construction Impacts to CDFW Jurisdiction (Acres)

	Riparian Vegetation	Unvegetated Streambed	Total
Permanent Impacts	14.67	1.00	**15.67**
Temporary Impacts	0	1.95	**1.95**
Total	**14.67**	**2.95**	**17.62**

The Project area will be divided into three maintenance zones following the completion of construction activities, including the SMZ, RMZ, and LMZ. Table III-3-E below summarizes the amount of CDFW jurisdiction within each maintenance zone. Approximately 14.47 acres of CDFW jurisdiction occur within the SMZ, including 7.23 acres of riparian habitat and 7.24 acres of unvegetated streambed. The removal of riparian vegetation due to Structural Maintenance activities is considered a permanent impact. Structural Maintenance activities will not result in a loss of streambed, but will prevent the long-term term establishment of riparian vegetation within the SMZ due to frequent mowing, sediment/debris removal, etc. (GLA(d))

Approximately 46.05 acres of CDFW jurisdiction occur within the RMZ, including 10.41 acres of

riparian habitat and 35.64 acres of unvegetated streambed. The primary Riverine Maintenance activity will consist of grazing, which would impact saplings (and herbaceous vegetation) in order to preclude the establishment of new woody vegetation, but would not remove existing mature woody vegetation. Sediment/debris removal will occur as needed within the RMZ, which could result in the removal of riparian vegetation and/or a temporary modification to streambed. (GLA(d))

Approximately 46.43 acres of CDFW jurisdiction occur within the LMZ, including 38.62 acres of riparian habitat and 7.81 acres of unvegetated streambed. Impacts to CDFW jurisdiction within the LMZ would occur infrequently, and only for purposes of temporary emergency maintenance. A Conservation Easement with the RCA will be established for the LMZ. Terms and conditions to be negotiated include the following topics: a change in Federal regulations regarding the levee, urgent maintenance deemed by the Chief Engineer for woody debris and sediment removal, and use of mechanized equipment. (GLA(d))

Table III-3-F, Summary of CDFW Jurisdiction by Maintenance Zone (Acres)

Maintenance Zone	Riparian Habitat	Unvegetated Streambed	Total CDFW Jurisdiction
Structural Maintenance Zone	7.23	7.24	**14.47**
Riverine Maintenance Zone	10.41	35.64	**46.05**
Limited Maintenance Zone	38.62	7.81	**46.43**
Total	**56.26**	**50.69**	**106.95**

As outlined above, a Determination of Equivalent or Superior Preservation (DBESP) was prepared for the Project to address impacts to riparian/riverine areas and habitat for the least Bell's vireo. The DBESP was reviewed by the RCA, USFWS, and CDFG and revisions incorporated to address their comments. The mitigation developed through consultation with the wildlife agencies and identified in the Riparian/Riverine DBESP was also developed for a Streambed Alteration Agreement, pursuant to Section 1600 of the Fish and Game Code. With the proposed features and mitigation measures and with a Habitat Mitigation and Monitoring Plan (HMMP) provided to the RCA for approval with copy the Wildlife Agencies, as well as execution of the conservation easements and enhancement activity plans prior to construction start, the Project demonstrates consistency with Section 6.1.2 of the MSHCP. (GLA(c & e), RCA)

The Project footprint does not contain vernal pools. The site does not contain any other sensitive natural community. By design (expanding the existing San Jacinto River corridor by approximately 374 acres) and compliance with the MSHCP, the Project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community and therefore, impacts are **less than significant.**

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

A jurisdictional delineation was prepared for the Project footprint to determine CDFW jurisdiction pursuant USACE jurisdiction pursuant to Section 404 of the Clean Water Act. USACE jurisdiction associated with the Project area totals approximately 87.51 acres, none of consists of jurisdictional wetlands. (GLA(d))

Vegetation within Reach 1 (downstream of Sanderson Avenue) consists of riparian scrub and woodland, including mulefat (*Baccharis salicifolia*), narrow-leaved willow (*Salix exigua*), Fremont's cottonwood (*Populus fremontii*), and black willow (*Salix gooddingii*), with an understory dominated by ripgut brome (*Bromus diandrus*), Russian thistle (*Salsola tragus*), and red brome (*Bromus madritensis* ssp. *rubens*). Reach 1 was evaluated for the presence of wetlands, though wetlands do not occur within this reach due to an absence of hydric soils. The river channel supports a predominance of hydrophytic vegetation, and exhibits indicators of wetland hydrology (surface soil cracks, sediment deposits, drift deposits, and drainage patterns), but does not exhibit hydric soil characteristics as confirmed by a single soil pit excavated in a representative portion of the river channel. (GLA(d))

Nearly the entirety of Reach 2 (between Sanderson Avenue and State Street) consists of unvegetated streambed. Scattered vegetation is present growing along the base of the existing levee or on the levee itself. Vegetation consists of mulefat, narrow-leaved willow, Fremont's cottonwood, and black willow, with an understory dominated by ripgut brome, Russian thistle, and red brome. Reach 2 was evaluated for the presence of wetlands, though wetlands do not

occur within this reach due to an absence of hydric soils and a predominance of hydrophytic vegetation since nearly the entire streambed is unvegetated. No soil pits were excavated within Reach 2. (GLA(d))

An agricultural ditch (Ditch A) is located within Reach 2, outside of the southern levee. USACE jurisdiction associated the ditch totals approximately 0.55 acres, which is included in the total acreage reported above for Reach 2. The ditch enters the Project area from the west and flows through a portion of the Project area in an east-southeast direction for approximately 1,961 linear feet before terminating at State Street. Vegetation within and adjacent to Ditch A includes arroyo willow (*Salix lasiolepis*), mulefat, Fremont's cottonwood, blue elderberry (*Sambucus nigra* ssp. *caerulea*), cheeseweed (*Malva parviflora*), London rocket (*Sisymbrium irio*), tree tobacco (*Nicotiana glauca*), dwarf nettle (*Urtica urens*), and red brome. No soil pits were excavated within Agricultural Ditch A. Agricultural Ditch A consists of an unvegetated sandy substrate that does not exhibit any hydrophytic vegetation within the channel bed. (GLA(d))

The majority of Reach 3 (upstream of State Street) consists of unvegetated streambed, with scattered patches of cottonwood woodland, including individual cottonwood trees, and cottonwoods associated with an understory of willows and/or mule fat. Reach 3 was evaluated for the presence of wetlands, though wetlands do not occur within the existing levees due to an absence of hydric soils, as confirmed by a single soil pit was excavated within a representative portion of the channel. Portions of the river channel support a predominance of hydrophytic vegetation, though the majority does not. Indicators of wetland hydrology included surface soil cracks, water-stained leaves, sediment deposits, drift deposits, and drainage patterns. (GLA(d))

All of the drainage features within the Project footprint have been determined to be USACE jurisdictional waters subject to regulation pursuant to Section 401 and 404 of the CWA and do not need to be addressed separately pursuant to Section 13260 of the State of California Water Code, the Porter-Cologne Act. (GLA(d)) A CWA Section 401 Water Quality Certification is required from the Regional Water Quality Control Board (RWQCB) for the USACE to issue a CWA Section 404 permit for the Project. **Table III-3-G** below provides a summary of impacts to USACE/RWQCB jurisdiction due to construction activities.

The construction phase will result in the loss of 1.45 acres of non-wetland waters of the United States due to the enhancement of the existing northern levees. Additional temporary impacts will occur to 2.96 acres of non-wetland waters due to the removal of existing levee segments, excavation, and sediment removal at borrow sites. (GLA(d))

Table III-3-G, Construction Impacts to USACE/RWQCB Jurisdictional Waters (Acres)

	Non-Wetland Waters	Wetlands	Total
Permanent Impacts	1.45	0	**1.45**
Temporary Impacts	2.96	0	**2.96**
Total	**4.41**	**0**	**4.41**

Following construction, the Project area will be divided into the three maintenance zones described above, including the Structural Maintenance Zone (SMZ), Riverine Maintenance Zone (RMZ), and Limited Maintenance Zone (LMZ). **Table III-3-H** provides a summary of USACE/RWQCB jurisdiction by maintenance zone.

Approximately 10.05 acres of non-wetland waters of the United States occur within the SMZ. Structural Maintenance activities will occur on a permanent basis, but resulting in re-occurring temporary discharges of native materials as a result of sediment/debris removal, maintenance of access roads, etc.

Approximately 41.72 acres of non-wetland waters of the United States occur within the RMZ. The primary Riverine Maintenance activity in all three reaches will consist of grazing, which would not result in a discharge of dredged or fill material, and therefore would not be an impact to waters of the United States. Sediment/debris removal will occur as needed within the RMZ, which could result in a temporary discharge of native materials.

Approximately 33.14 acres of waters of the United States (including 0.01 acre of wetland) occur within the LMZ. Impacts to waters of the United States within the LMZ would occur infrequently, and only for purposes of temporary emergency maintenance. A Conservation Easement with the Regional Conservation Authority (RCA) will be established for the LMZ. Terms and conditions to be negotiated include the following topics: a change in Federal regulations regarding the levee, urgent maintenance deemed by the Chief Engineer for woody debris and sediment removal, and use of mechanized equipment.

Table III-3-H, Summary of USACE/RWQCB Jurisdiction by Maintenance Zone (Acres)

Project Area	Non-Wetland Waters	Wetlands
Structural Maintenance Zone	10.05	0
Riverine Maintenance Zone	41.72	0
Limited Maintenance Zone	33.14	0
Total	**84.91**	**0**

The mitigation developed through consultation with the wildlife agencies and identified in the Riparian/Riverine DBESP was also developed to mitigate for impacts to waters of the United States from construction and maintenance. The mitigation includes creation of a riparian habitat corridor, avoidance of existing riparian habitat, expanded riverine corridor, general enhancements and a Habitat Mitigation and Monitoring Plan (HMMP), which are outlined in more detail below.

Riparian Corridor

To compensate for the loss of riparian habitat and riverine areas, the Project will designate a 77.86-acre area to function as a riparian corridor (average width of 233 feet) beginning downstream of State Street and extending to the downstream limits of Reach 1. As part of the 77.86-acre riparian corridor, 43.8 acres will be planted with riparian species to establish suitable habitat for least Bell's vireo nesting, to offset impacts to riparian habitat due to construction and structural maintenance. The created riparian habitat will consist of cottonwood/willow/mule fat scrub and forest habitats. The riparian habitat will be created in two strips on either side of the overall riparian corridor, with the middle of the corridor (the low portion of the created channel) left alone for natural recruitment. The mitigation program shall include the removal of non-native plant species, trash and debris during implementation and in perpetuity.

Additional excavation will occur to create the low flow channel for the proposed riparian corridor. Low flows from storm events and future non-storm water runoff (due to future storm drain connections through the new southern levee) will naturally concentrate within the riparian corridor channel as it will be the low point in the system in this stretch of the river (Reaches 1 and 2). Flows from larger storm events, 20-year and greater, are expected to cover all of the existing river channel and the expanded river corridor. Flows from smaller storm events and future non-storm water runoff are anticipated to provide adequate hydrology to support the riparian vegetation in the proposed riparian corridor. Moreover, tree cuttings will be planted so that they will be in contact with groundwater.

The riparian creation/restoration area shall be monitored and maintained for a minimum of five years, with reports submitted annually, to ensure successful establishment of the habitat to the agreed upon performance standards. Groundwater monitoring wells will be used within the riparian creation/restoration area (Reach 1 and 2) as well as within existing riparian habitat to be avoided (Reach 1). The riparian creation/restoration area will not be subject to any maintenance for flood control purposes and shall only receive maintenance consistent with a habitat conservation area, such as the removal of non-native plants, trash and debris, and replacement of native plant species as necessary to achieve performance standards. The riparian creation/restoration area shall be protected in perpetuity with a conservation easement.

Avoided Riparian Habitat

The Project will not disturb approximately 38.62 acres of riparian habitat within the designated Limited Maintenance Zone. The 38.62 acres of existing riparian habitat will be protected in perpetuity with a conservation easement. The LMZ areas will not be subject to flood control maintenance, except as described above. The 38.62 acres of riparian habitat within the LMZ will not be actively enhanced, i.e., it will be allowed to vegetate passively, but it will be subject to the removal of non-native vegetation as is proposed for the riparian creation/restoration corridor.

Expanded Riverine Corridor

The construction of the proposed southern levee, together with the direct removal of portions of the existing southern levee, will expand the riverine corridor by approximately 295.86 acres, which together with the 77.86-acre riparian corridor, 38.62 acres of avoided riparian habitat (LMZ), 7.81 acres of avoided riverine areas (LMZ), and 44.83 acres of temporary impacts to riverine areas, will result in a post-project total of approximately 464.98 acres of riparian/riverine areas as compared with the 122.57 acres of riparian/riverine areas that exists in the Project footprint today.

General Enhancement

In addition to the creation/restoration of the proposed riparian corridor and avoidance of additional riparian habitat within the LMZ areas, the Project includes general enhancement within the overall post-project boundary (Reach 1 and 2) of the San Jacinto River, in perpetuity. Enhancement activities shall include the removal of specified exotic plant species (i.e., woody non-native species), the removal of trash and debris, and the management of non-native bird species (e.g., Brown-headed Cowbirds, European Starlings, and English Sparrows). Enhancement will also occur within Reach 3 (upstream of State Street), to be separately addressed in a long-term maintenance agreement (LTMA) between the District and CDFW. Additional activities to be addressed in the LTMA will include the removal of wire revetment in the existing southern levee as it is exposed.

Habitat Mitigation and Monitoring Plan
A HMMP typically required and prepared during the regulatory permit process, will be prepared at a later date to provide specific details about the preparation, planting, maintenance, and monitoring of the riparian corridor. The HMMP will provide a detailed plant palette, planting specifications, and maintenance and monitoring schedules, and will identify specific success criteria. The mitigation site will be monitored for five years following the completion of mitigation installation unless final success criteria are met prior to this point in time. The monitoring program will consist of the measurement of performance indicators and the assessment of these indicators relative to established performance criteria. Annual reports will be prepared to document the progress of the mitigation area, and will assess both attainment of yearly target success criteria and progress toward final success criteria.

The Project will not result in impacts to federally protected wetlands as defined by Section 404 of the Clean Water Act**.**

By design (expanding the existing San Jacinto River corridor by approximately 374 acres) and compliance with the MSHCP and permit conditions issued by regulatory agencies the Project will not have a substantial adverse effect on CDFG streambeds and riparian habitat or USACE non-wetland waters and, therefore, impacts are **less than significant.**

Threshold: *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or establish native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*

As outlined above the MSHCP Compliance Report for this Project (GLA(e)), the Cells and Cell Groups associated with the Project footprint target lands in order to conserve lands for Existing Constrained Linkage C (middle reach of the San Jacinto River) and Proposed Core 5 (upper reach of San Jacinto River).

Existing Constrained Linkage C consists of the middle segment of the San Jacinto River, starting just west of State Street and extending to the downstream end of the Project footprint. This Linkage connects Proposed Core 5 in the east (upper San Jacinto River area) with Proposed Constrained Linkage 20 to the west. It is also connected to Proposed Core 3 (Badlands/Potrero area) via Proposed Constrained Linkage 21. Existing Constrained Linkage C is constrained on all sides by existing development, has large amounts of area potentially affected by edge (approximately 240 acres of the total 245 acres), and possesses a high perimeter-to-area (P/A) ratio (230 feet per acre). However, this Constrained Linkage is largely surrounded by an open space/conservation planned land use. Therefore, edge effects may not affect the Linkage to such a strong degree. The MSHCP states that the maintenance of existing floodplain processes along the San Jacinto River is important for a number of the Narrow Endemic Plant Species identified as Planning Species for the Linkage.

Implementation of the Project will widen the river corridor for the majority of the length of Existing Constrained Linkage C within the Project boundary, resulting in approximately 296 acres of expanded riverine corridor and an additional approximate 78 acres of proposed riparian corridor for a combined approximate 374 acres of additional corridor. This will lower the perimeter to area (P/A) ratio by increasing the inner acreage. As such, the Project will help to support the MSHCP goals for Existing Constrained Linkage C.

The Project will not affect the corridor function of the San Jacinto River for large mammals such as the mountain lion and medium-size mammals, such as the bobcat. The Project will substantially widen the riverine corridor within Existing Constrained Linkage C (and the downstream end of Proposed Core 5), which will increase the corridor function for the San Jacinto River for LAPM and other species.

As a result of the Project design, including the avoidance of important riparian and riverine habitat, expansion of the riverine corridor, and the maintenance of the movement corridor for larger mammals, the Project will support the MSHCP goals for Proposed Core 5.

Implementation of the Project will not interfere substantially with the movement of any fish or wildlife species or establish native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites and therefore, impacts are **less than significant**.
Threshold: *Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.*

The Riverside County San Jacinto Valley Area Plan (SJVAP) has the following applicable policies relating to the protection of biological resources:

SJVAP 3.3: Minimize the disruption of sensitive vegetation and species, as called out in the Floodplain and Riparian Area Management and Environmentally Sensitive Lands sections of the General Plan Multipurpose Open Space Element.

SJVAP 15.1 Protect sensitive biological resources in the San Jacinto Valley Area Plan through adherence to policies found in the General Plan Multipurpose Open Space Element.

SJVAP 15.2 Conserve Willow-Domino-Travers soils supporting plants such as spreading navarretia (core population), San Jacinto Valley crownscale (core population), Parish's brittlescale, Coulter's goldfields, vernal barley and Davidson's saltbush (core population).

SJVAP 15.3 Conserve clay soils intermixed with or near vernal pools occurring in the upper reaches of the San Jacinto River supporting California Orcutt grass and core populations of thread-leaved brodiaea.

SJVAP 15.4 Conserve alkaline soils associated with the upper San Jacinto River and Bautista Creek to support known populations of smooth tarplant and little mousetail.

SJVAP 15.5 Conserve clay soils in grasslands and open sage scrub supporting populations of small-flowered morning glory.

SJVAP 15.6 Conserve alluvial fan sage scrub and chaparral supporting slender-horned spineflower and Parry's spineflower, known to occur in the San Jacinto Valley Area Plan.

SJVAP 15.7 Conserve existing known populations of least Bell's vireo and southwestern willow flycatcher in the San Jacinto Valley Area Plan, including locations at the San Jacinto River and Bautista Creek. Maintain existing breeding habitat for these species at the San Jacinto River and Bautista Creek.

SJVAP 15.8 Conserve wetland habitats along the San Jacinto River including existing vernal pools and associated watersheds. Maintain watershed processes that enhance water quality and contribute to the hydrologic regime.

SJVAP 15.9 Maintain and enhance linkage value of the upper San Jacinto River including locations at the San Jacinto River and Bautista Creek for wildlife movement and live-in habitat.

SJVAP 15.10 Conserve intact upland habitat block, consisting of grasslands, open sage scrub, rangelands and chaparral, in the southern Badlands, Lakeview Mountains, and Mica Butte for the benefit of raptors, burrowing owl, orange-throated whiptail, and other MSHCP species.

SJVAP 15.11 Conserve large patches of undisturbed high quality scrub and chamise chaparral to support known populations of Bell's sage sparrow.

SJVAP 15.12 Conserve sufficient upland habitat in the southern Badlands, Lakeview Mountains, and Mica Butte to support known locations of gnatcatcher.

SJVAP 15.13 Conserve open grasslands and sparse shrublands that support populations of Stephens' kangaroo rat, with a focus on suitable habitat in the southern Badlands.

The City of San Jacinto General Plan has the following applicable policies relating to the protection of biological resources:

Policy 1.1: Conserve important natural resources such as mature trees, rock outcroppings, hills, ridges, and other prominent land forms, as open space.

Policy 1.2: Work closely with the County of Riverside to implement the Multiple Species Habitat Conservation Plan that meets the goal of preservation, but allows for economic development of the community.

Policy 1.3: Conserve and protect important plant communities and wildlife habitats, such as riparian areas, wetlands, vernal pools, oak woodlands and other significant tree stands, and rare and endangered species.

The Project footprint does not contain suitable habitat for narrow endemic plant species and would not adversely affect them. The proposed Project will not impact vernal pools or wetlands. The proposed Project does contain habitat with long-term conservation value for the least Bell's vireo and the Los Angeles pocket mouse. Implementation of the proposed Project will result in a long term benefit to habitat and species associated with the San Jacinto River by expanding the existing riverine corridor by approximately 374 acres within the Project footprint. The Project will widen the river corridor, reducing the P/A ratio. By design and compliance with the MSHCP the Project will not conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance and therefore, impacts are **less than significant**.

Proposed Mitigation Measures

An Environmental Impact Report is required to describe feasible mitigation measures which could minimize significant adverse impacts (*CEQA Guidelines*, Section 15126.4). Mitigation measures were evaluated for their ability to eliminate the potential significant adverse impacts related to biological resources or to reduce impacts to below the level of significance.

MM Bio 1: In order to reduce potential impacts to riparian and riverine areas and least Bell's vireo (LBV), the Project shall establish a 77.86-acre riparian corridor (average width of 233 feet) beginning downstream of State Street and extending to the downstream limits of Reach 1. As part of the 77.86-acre riparian corridor, the Project shall create 43.8 acres of riparian habitat suitable for least Bell's vireo nesting, to offset impacts to riparian habitat due to construction and structural maintenance. The created riparian habitat shall consist of cottonwood/willow/mule fat scrub and forest habitats. The riparian habitat shall be created in two strips on either side of the overall riparian corridor, with the middle of the corridor (the low portion of the created channel) left alone for natural recruitment. The created habitat shall include native container plants, cuttings/poles, and/or seed mix throughout the 43.8 acres. The mitigation program shall include the removal of non-native plant species, trash and debris during implementation and in perpetuity. The riparian creation/restoration area shall be monitored and maintained for a minimum of five years, with reports submitted annually, to ensure successful establishment of the habitat to the agreed upon performance standards. Groundwater monitoring wells will be used within the riparian creation/restoration area (Reach 1 and 2) as well as within existing riparian habitat to be avoided (Reach 1). The riparian creation/restoration area shall not be subject to any maintenance for flood control purposes and shall only receive maintenance consistent with a habitat conservation area, such as the removal of non-native plants, trash and debris, and replacement of native plant species as necessary to achieve performance standards. The riparian creation/restoration area shall be protected in perpetuity with a conservation easement.

MM Bio 2: In order to reduce potential impacts to riparian and riverine areas and least Bell's vireo (LBV), the Project shall avoid 38.62 acres of existing riparian habitat within the Limited Maintenance Zones (LMZ) and be protected in perpetuity with a conservation easement. The

LMZ areas will not be subject to flood control maintenance, except in emergencies as described in the Project Description. The 38.62 acres of riparian habitat within the LMZ will not be actively enhanced, i.e., it will be allowed to vegetate passively, but it will be subject to the removal of non-native vegetation.

MM Bio 3: The construction of the proposed southern levee, together with the direct removal of portions of the existing southern levee, will expand the riverine corridor by approximately 295.86 acres (Figure 6 – Expanded Riparian/Riverine Corridor), which together with the 77.86-acre riparian corridor, 38.62 acres of avoided riparian habitat (LMZ), 7.81 acres of avoided riverine areas (LMZ), and 44.83 acres of temporary impacts to riverine areas, will result in a post-project total of approximately 464.98 acres of riparian/riverine areas as compared with the 122.57 acres of riparian/riverine areas that exists in the Project footprint today.

MM Bio 4: The Project shall include general enhancement within the overall post-project boundary (Reach 1 and 2) of the San Jacinto River, in perpetuity. Enhancement activities shall include the removal of specified exotic plant species (i.e., woody non-native species), the removal of trash and debris, and the management of non-native bird species (e.g., Brown-headed Cowbirds, European Starlings, and English Sparrows). Enhancement will also occur within Reach 3 (upstream of State Street), to be separately addressed in a long-term maintenance agreement (LTMA) between the District and CDFW.

MM Bio 5: The Project shall acquire/expand existing LAPM habitat with LTCV within the Project area by approximately 239.9 acres, and implement an adaptive management program of riverine maintenance to minimize impacts to LAPM habitat for a total of 307.94 acres. The program shall include the maintenance of one half of each reach per year, and vegetation maintenance achieved through grazing in lieu of mechanical mowing.

MM Bio 6: Acquire 4.7 acres of LAPM refugia habitat. The 4.7-acre area will be managed by the District.

MM Bio 7: Manage 33.1 acres in the District's Potrero Debris Basin, an additional 49.0 acres associated with an existing RCA easement within Potrero, and the 4.7-acre property for LAPM LTCV/refugia habitat. Management activities for refugia for the benefit of target species should include once-a-year monitoring of vegetation cover and conditions (including native and non-native grasses and shrubs) by a qualified biologist. Maintenance should include the removal of grasses and grass mats, the deposition of sand if necessary, and/or shrub plantings, as needed to provide the appropriate vegetation cover and overall conditions required by LAPM. Dense grass cover can be reduced or essentially eliminated over a relatively short period of time with the use of gramicides (i.e. grass herbicides such as Fusilade and/or Envoy). Potrero Debris Basin is owned by the District and will be managed by the District. The 4.7-acre property will be acquired and managed by the District. Activities within Potrero Debris Basin (including the existing RCA easement) and the 4.7-acre property will be reported to the RCA annually.

MM Bio 8: The District shall manage a 75.5-acre area (the "triangle area") located between the proposed low flow diversion structure and the western terminus of the proposed southern levee. Management within this area will be limited to grazing.

MM Bio 9: The District shall avoid 74.00 acres of LAPM habitat with LTCV within the Project's Limited Maintenance Zone (LMZ) areas. The LMZ areas shall be protected in perpetuity with a conservation easement. During maintenance activities, temporary fencing and/or GPS systems will be used to ensure avoidance of LMZ/Conservation Easement areas.

MM Bio 10: Sandy low slope ramps (Potrero Basin spillway and low flow diversion structure) shall be installed. The existing southern levee affected by erosion due to storm events shall be rebuilt as needed. The ramps and remnant southern levee sections will be maintained in perpetuity. Scattered vegetation will be allowed to grow on the ramps to provide cover for LAPM.

MM Bio 11: A long-term management plan (LTMP) for the in-perpetuity management for all LAPM mitigation lands, including the Potrero Debris Basin, the Driscoll property, the triangle area, and existing/expanded LAPM habitat within the Project footprint shall be developed. Management of lands within the triangle area will be limited to grazing. Management of all remaining lands will include, at a minimum, the management of non-native plant species (methodology, frequency, and disposal to be included in the LTMP); vegetation monitoring protocols (methodology and frequency of data collection to be included in LTMP); vegetation data analysis (methodology and frequency), small mammal monitoring protocols (methodology and frequency of data collection); proposed adaptive management strategies (including when adaptive management will be implemented); and the minimum qualifications of the land management entity proposed to manage the LAPM mitigation lands.

MM Bio 12: A pre-construction burrowing owl survey will be conducted prior to initiation of Project construction activities within suitable habitat of the burrowing owl. Objective 6 of the MSHCP species-specific burrowing owl objectives states that pre-construction presence/absence surveys for the burrowing owl will be conducted where suitable habitat is present. Surveys will be conducted within 30 days prior to disturbance. If burrowing owls are detected, then passive relocation (use of one-way doors and collapse of burrows) will occur outside the nesting season. Take of active nests will be avoided.

MM Bio 13~~2~~: To reduce impacts associated with temporary construction activities on sensitive species and habitats, Standard Best Management Practices and Construction Guidelines, as outlined in Volume I Appendix C and Section 7.5.3 of the MSHCP, respectively, shall be implemented where technically feasible.

Summary of Environmental Effects After Mitigation Measures are Implemented

Based on Project design, compliance with the MSHCP and with implementation of the mitigation measures identified above, potential adverse impacts associated with special-status species and their habitat, riparian habitat, federally protected wetlands, or other sensitive natural communities are reduced to a less than significant level. The Project will not conflict with an adopted HCP, NCCP, ordinances or policies protecting biological resources. The Project will not impede a wildlife corridor or wildlife movement.

Figure III-3-1, Vegetation Map

Figure III-3-2, USACE Jurisdictional Areas

Figure III-3-3, CDFG Jurisdictional Areas

Figure III-3-4, MSHCP Criteria Area

Figure III-3-5, MSHCP Plant Species Survey Areas

Figure III-3-6, MSHCP Wildlife Species Survey Areas

III-9 NOISE

Potential impacts related to groundborne vibration or groundborne noise levels, permanent increase in ambient noise levels in the Project vicinity, and exposure to excessive noise levels from an airport were all deemed to have no impact or less than significant impact in the initial study prepared for this Project (Appendix A).The focus of the following discussion is limited to the potential impacts from the generation of noise levels in excess of standards established in the local general plan or noise ordinance and temporary increase in ambient noise levels in the Project vicinity which could result in significant environmental effects. In addition to other reference documents, the following references were used in the preparation of this section of the DEIR:

COR GP	County of Riverside, *Riverside County Integrated Project General Plan*, adopted October 7, 2003, Updated December 2008. (Available at the County of Riverside Planning Department at http://www.rcip.org/generalplan.htm, accessed on April 15, 2014.)
ORD 847	Riverside County, Ordinance No. 847 (as Amended Through 847.1), *An Ordinance of the County of Riverside Amending Ordinance No. 847 Regulating Noise.* (Available at http://www.clerkoftheboard.co.riverside.ca.us/ords/800/847.pdf, accessed on October 15, 2014.)
RCLIS	County of Riverside, *Geographic Riverside County Land Information System Database.* (Available at the County of Riverside Planning Department or at www.tlma.ca.riverside.ca.us/gis/gisdevelop.htmlhttp://tlmabld5.agency.tlma.co.riverside.ca.us/website/rclis/, accessed on April 15, 2014.)
SJ MC	City of San Jacinto, *An Ordinance of the City Council of the City of San Jacinto, California Amending Chapter 8.40 of the San Jacinto Municipal Code Relating to Noise Control San Jacinto Municipal Code Chapter 8.40 Noise Control*, September 2007. (Available at http://www.codepublishing.com/CA/SanJacinto/?f, accessed on October 16, 2014.)
SJGP	City of San Jacinto, *City of San Jacinto General Plan*, January adopted May 42006, amended October 19, 2012. (Available at http://www.ci.san-jacinto.ca.us/city-govt/general-plan.html, accessed on April 10, 2014.)

SJGP EIR City of San Jacinto, *City of San Jacinto General Plan Draft EIR*, January 2006. (Available at http://www.ci.san-jacinto.ca.us/city-govt/general-plan-EIR.html, accessed on April 10, 2014.)

TeNS California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol,* September 2013. (Available at http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf, accessed on October 15, 2014.)

WEBB(b) Albert A. Webb Associates, *Construction Noise Assessment for the San Jacinto River Levee Stage 4 Project Technical Memorandum,* October 3, 2014. (Appendix G)

Setting

Acoustical Analysis Background

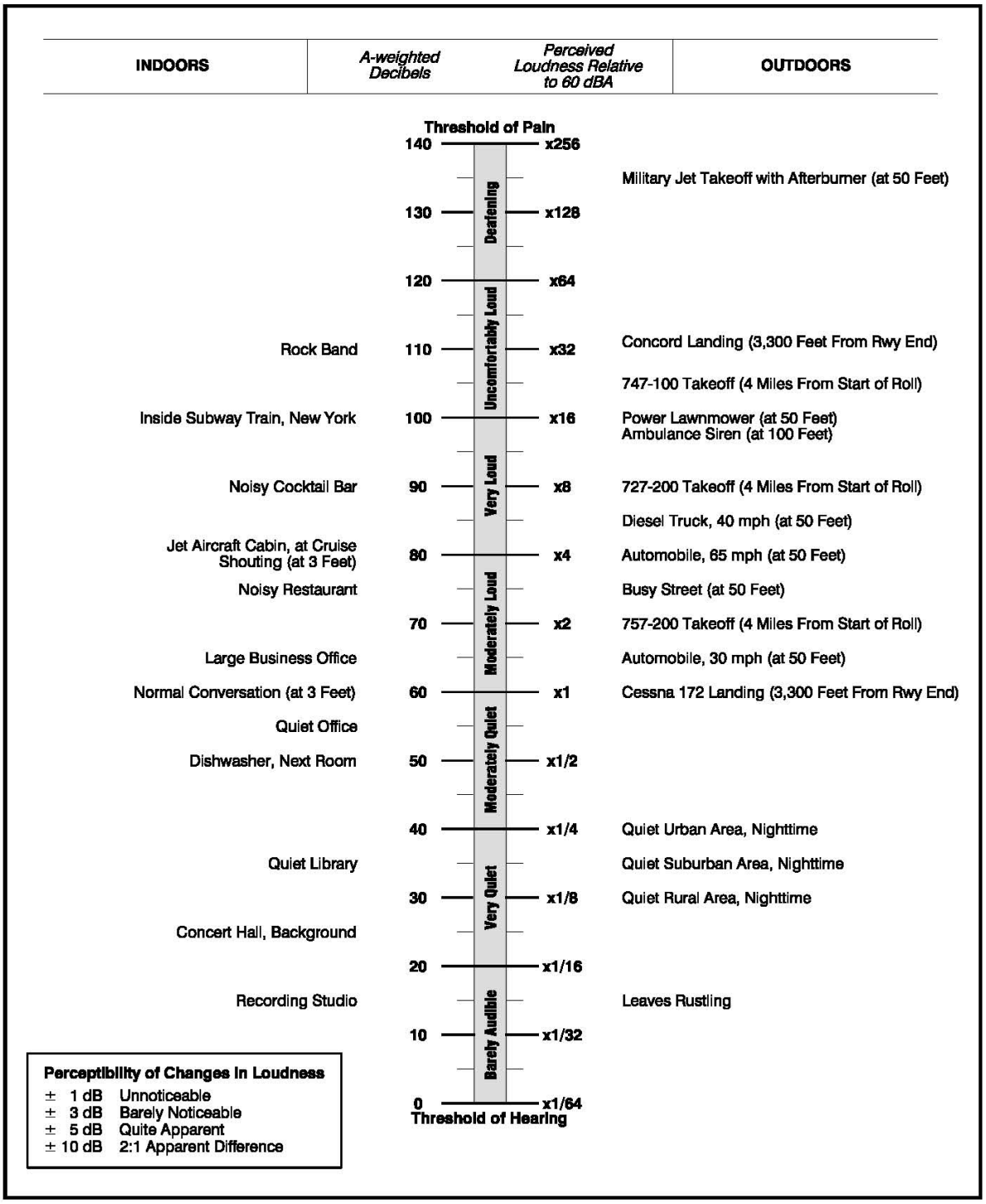
Noise is defined as unwanted or objectionable sound. The effect of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB (A) or dBA. Decibels are measured on a logarithmic scale which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling a traffic volume, would increase the noise level by 3 dBA; a halving of the energy would result in a 3 dBA decrease (TeNS, p. 2-11). It is widely accepted that the average healthy ear can barely perceive noise level changes of 3 dBA (TeNS, p. 2-44). **Figure III-9-1, Typical Decibel Level of Common Sounds**, shows the relationship of various noise levels to common noise events.

Noise sensitive land uses (i.e. sensitive receptors) are areas where humans are participating in activities that may be subject to the stress of significant interference from noise. Land uses associated with sensitive receptors include residential dwellings, mobile homes, hospitals, education facilities, and libraries (SJGP EIR, p. 5.10-1). Other receptors include office and industrial buildings, which are not considered as sensitive as residences, but are still protected by both County of Riverside and the City of San Jacinto land use compatibility standards.

Average noise levels over a period of minutes are usually expressed as dB L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq}(3)$ would represent a three-hour average. When no period is specified, a one-hour average is assumed. Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (L_{dn}). CNEL is a 24-hour weighted average measure of community noise. The computation of CNEL adds 5 dBA to the average hourly noise levels between 7 p.m.

and 10 p.m. (evening hours), and 10 dBA to the average hourly noise levels between 10 p.m. and 7 a.m. (nighttime hours) (TeNS, p. 8-3–8.4). This weighting accounts for the increased human sensitivity to noise in the evening and nighttime hours. L_{dn} is a very similar 24-hour weighted average which weights only the nighttime hours and not the evening hours (TeNS, p. 8-8). The L_{dn} and CNEL values are nearly identical for all but unusual noise sources (SJGP EIR, p. 5.10-1).

Figure III-9-1, Typical Decibel Level of Common Sounds



Existing Noise Levels

Existing sensitive receptors in the area include residential, agricultural farms, and the Golden Era Productions Campus, in addition to surrounding wildlife. The predominant noise characterizing the Project site and the surrounding area is vehicular noise from area streets including: Ramona Expressway, Sanderson Avenue, Record Road, State Street, and Gilman Springs Road. Ambient daytime noise levels were measured at the seven receiver locations shown on **Figure III-9-2, Construction Footprint and Noise Receptors.** The field monitoring results are presented in **Table III-9-A, Ambient Noise Level Measurement Results at Nearby Receptors**. Receiver locations 1 through 4, are areas that may be potentially impacted by construction activities taking place in and adjacent to the levee. Receiver locations 5 through 7 are representative of areas that may potentially be impacted by construction-related traffic on off-site area roadways.

Table III-9-A, Ambient Noise Level Measurement Results at Nearby Receptors

Noise Monitoring Position[a]	Existing Use	Monitored Ambient Noise Level (dBA)[b]				Comments
		L_{eq}	L_{max}[c]	L_{min}[d]	L_{90}[e]	
1	Vacant, no sensitive receivers at this location	44.8	63.8	32.0	35.6	No uncommon noise
2	Former Sleepy Hollow mobile home park on the north bank of the levee. A few vacant structures are remaining. No sensitive receivers at this location.	46.0	59.2	41.0	43.0	Uncommon noise included beeping from golf cart in reverse and yard workers at adjacent golf course
3	Country Lake Mobile Home Community. An age restricted (55+) mobile home park.	46.2	67.2	37.2	40.8	No uncommon noise.
4	Residence and dairy	53.8	70.6	37.7	40.2	Common activities at this site included children playing, miscellaneous activities at nearby residence and air conditioner. Uncommon noise included car alarm in distance.
5	Vacant, no sensitive receivers at this location	72.5	88.5	41.8	49.9	Receiver distance: 35 feet from the Ramona Expressway centerline.

Noise Monitoring Position[a]	Existing Use	Monitored Ambient Noise Level (dBA)[b]				Comments
		L_{eq}	L_{max}[c]	L_{min}[d]	L_{90}[e]	
6	Vacant, no sensitive receivers at this location	79.8	99.0	39.4	55.7	Receiver distance: 35 feet from the Ramona Expressway centerline.
7	Vacant, no sensitive receivers at this location	83.3	98.7	37.1	57.8	Receiver distance: 15 feet from the Ramona Expressway centerline.

Notes:

[a] Ambient measurement locations are indicated on Figure III-9-2. Receptors 1, 2, and 3 are within the unincorporated territory of Riverside County. Receptors 4, 5, 6, and 7 are within the City of San Jacinto.

[b] Noise measurements were taken at each location on July 31, 2007. Noise level measurements, were taken with a Larson Davis Model 840 SLM that was field calibrated with a Larson Davis Model CAL150 calibrator. Field notes are included in Attachment A of Appendix F. There has been no substantial change in land use or traffic since the noise measurements were taken.

[c] The single highest recorded noise level event measured.

[d] The single lowest recorded noise level event measured.

[e] The noise level exceeded for 90 percent of the time noise measurements were taken .

As previously stated, existing noise levels near the proposed Project are derived almost entirely from vehicular sources on the surrounding arterial roads. Currently, the roadway segment of Ramona Expressway between Sanderson Avenue and State Street (Monitoring Positions 4, 6, and 7 as shown on **Figure III-9-2**) experiences ambient noise levels above the 65 dBA exterior threshold for residential and commercial land uses set forth in the San Jacinto Municipal Code (SJMC, Sections 8.40.404 A and 8.40.050 A), due primarily to vehicular traffic.

Figure III-9-2, Construction Footprint and Noise Receptors

Thresholds of Significance

The City has not established local CEQA significance thresholds as described in Section 15064.7 of the State *CEQA Guidelines*. However, the City's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts related to noise may be considered potentially significant if the proposed Project would:

- expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Related Regulations

Federal

There are no federal noise regulations applicable to the proposed Project.

State

The California Government Code requires that a noise element be included in the General Plan of each county and city in the state. The Noise Element of the City of San Jacinto General Plan is intended to identify sources of noise and provide objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. It is a tool that City planners use to achieve and maintain compatible land uses with environmental noise levels.

Local

City of San Jacinto Noise Ordinance

The City of San Jacinto has established a section of the Municipal Code (Chapter 8.40), which provides controls for excessive and annoying noise from stationary sources, such as construction activity. The City's Noise Ordinance is designed to protect people from non-transportation noise sources such as construction activity; commercial, industrial, and agricultural operations; machinery and pumps; and air conditioners. Enforcement of the ordinance ensures that adjacent properties are not exposed to excessive noise from stationary sources. Enforcing the ordinance includes requiring proposed development projects to show compliance with the ordinance, including operating in accordance with noise levels and hours of operations limits placed on a project site. The City also requires construction activity to comply with established work schedule limits. The Noise Ordinance establishes allowable interior and exterior noise levels for residential and commercial areas. Specific standards for daytime and nighttime hours are also provided. Certain noise sources are prohibited and the ordinance establishes an enforcement process. The ordinance is reviewed periodically for adequacy and amended as needed to address community needs and development patterns. (SJGP EIR, p. 5.10-4) **Table III-9-B** summarizes the noise standards contained the City's Noise Ordinance.

Table III-9-B, San Jacinto Noise Standards[a]

Noise Zone	Land Use	Exterior		Interior	
		7 AM–10 PM	10 PM–7 AM	7 AM–10 PM	10 PM–7 AM
I	Single-Family Residential	65 dBA L_{eq}	45 dBA L_{eq}	45 dBA L_{eq}	40 dBA L_{eq}
II	Multifamily Residential, Mobile Home Parks	65 dBA L_{eq}	50 dBA L_{eq}	45 dBA L_{eq}	40 dBA L_{eq}
III	Commercial Property	65 dBA L_{eq}	60 dBA L_{eq}	Not specified	Not specified
IV	Residential Portion of Mixed Use	70 dBA L_{eq}	70 dBA L_{eq}	45 dBA L_{eq}	40 dBAL_{eq}
V	Manufacturing and Industrial, Other Uses	70 dBA L_{eq}	70 dBA L_{eq}	Not specified	Not specified

Notes:

[a] *San Jacinto Municipal Code*, Sections 8.40.040 A and 8.40.050 A

Construction noise in San Jacinto is regulated via Section 8.40.090 of the San Jacinto Municipal Code which states:

A. *Weekdays. No person, while engaged in construction, remodeling, digging, grading, demolition or any other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace officer, on any weekday except between the hours of seven-thirty a.m. and six p.m.*

B. *Weekends and Holidays. No person, while engaged in construction, remodeling, grading, demolition or other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace officer, on any weekend day or any federal holiday.*

C. *No landowner, construction company owner, contractor, subcontractor or employer shall permit or allow any person or persons working under their direction and control to operate any tool, equipment or machine in violation of the provisions of this section.*

Section 8.40.090 D of the San Jacinto Municipal Code identifies the following exemptions to the construction noise regulations.

1. *The provisions of this section shall not apply to emergency construction work performed by a private party when authorized by the city manager or his or her designee;*
2. *The maintenance, repair or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency; provided, however, this exception shall not apply to the City of San Jacinto, or its employees, contractors or agents, unless:*
    a. *The city manager or a department head determines that the maintenance, repair or improvement is immediately necessary to maintain public services, or*
    b. *The maintenance, repair or improvement is of a nature that cannot feasibly be conducted during normal business hours, or*
    c. *The city council has approved project specifications, contract provisions, or an environmental document that specifically authorizes construction during hours of the day that would otherwise be prohibited pursuant to this section;*
3. *Any construction that complies with the noise limits specified in Section 8.40.040 or 8.40.050. (Ord. 07-17 § 2 (part))*

San Jacinto Municipal Code Section 8.40.100 also exempts work by or under the direction of any other public agency or public or private utility company in cases of necessity of emergency.

Based on the above provisions, construction and maintenance of the Project is not subject to the noise limitations set forth in Sections 8.40.040 A and 8.40.050 A of the San Jacinto Municipal Code.

Riverside County Ordinance No. 847

County of Riverside Ordinance No. 847 addresses sound disturbances and sets various acceptable noise limits and establishes countywide standards regulating noise to protect the health, safety, and general welfare of Riverside County residents (ORD 847, Section 1).Noise standards applicable to the County area in vicinity of the Project site are summarized in **Table III-9-C**.

Table III-9-C, County of Riverside Noise Standards[b]

Foundation Component	Land Use	Exterior		Interior	
		7 AM–10 PM	10 PM–7 AM	7 AM–10 PM	10 PM–7 AM
Community Development	All General Plan Residential Land Use Designations	55 dB L_{max}	45 dB L_{max}	Not specified	Not specified
	All General Plan Commercial Land Use Designations	65 dB L_{max}	55 dB L_{max}	Not specified	Not specified
	All General Plan Industrial Land Use Designations	75 dB L_{max}	55 dB L_{max} for Light Industrial 75 dB L_{max} for Heavy Industrial	Not specified	Not specified
Rural Community	All General Plan Residential Land Use Designations	55 dB L_{max}	45 dB L_{max}	Not specified	Not specified

Notes:

[a] *County of Riverside Ordinance No. 847*, Section 4, Table 1

In addition to establishing countywide noise standards, Ordinance No. 847 exempts sound from a number of sources as being exempt from the provisions of the ordinance. Included among the exemptions are facilities owned or operated by or for a government agency and capital improvement projects of a governmental agency (ORD No. 847, Sections 2.a and 2.b). Construction, operation, and maintenance of the proposed Project is exempt from the County Noise Ordinance because: (i) it is a capital improvement project, (ii) the City of San Jacinto is a governmental agency under this ordinance; and (iii) maintenance will be performed by the Riverside County Flood Control and Water Conservation District.

Design Considerations

Because operation and maintenance of the levee will not generate substantial amounts of noise, the proposed Project does not include any design features specifically intended to reduce or eliminate impacts related to noise. The Project's construction haul route was selected to minimize the number of sensitive receptors potentially exposed to construction-related trips.

Environmental Impacts Before Mitigation

Threshold: *Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*

Noise impacts fall into two broad categories with respect to all types of projects: noise impacts from a project (including both temporary construction and ongoing operational activities) and noise impacts to a project's sensitive receptors from nearby sources. The first category represents noise created by the uses or traffic associated with a project. For the proposed Project, this would be noise generated during project construction. The second category of noise impacts represents noise created offsite that may cause unacceptable levels of noise at building interiors or outdoor areas within a proposed project site. Because: (i) the Project consists of flood control improvements; (ii) does not include existing or added sensitive receptors; and (iii) no standards or ordinances regulate noise impacts upon the Project's use or site, off-site sources of noise will not result in any adverse noise impacts to the Project. Therefore, with regard to established noise standards, **no impacts will occur** to the Project.

Once constructed, operation and maintenance of the proposed Project will not generate ongoing or permanent noise that would exceed noise standards at surrounding land uses. Equipment used during project construction will generate short-term noise levels that are anticipated to temporarily exceed noise standards set forth in the San Jacinto Municipal Code (Sections 8.040.040 A and 8.040.040 B) and Riverside County Ordinance No. 847 (see Table III-9-B and Table III-9-C) at some of the receptor locations[1] near the Project site (see **Figure III-9-2**). As previously discussed in the subsection named "Related Regulations," noise generated by the Project is exempt from the noise standards set forth in both the San Jacinto Municipal Code and Riverside County Ordinance No. 847. Therefore, construction and operation of the Project will not result in the generation of noise in excess of local standards, and impacts are considered less than significant. However, as discussed below under the threshold, *Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project*, because project construction will generate substantial noise, this impact is considered **significant and unavoidable.**

During construction, the Project will also generate temporary off-site noise impacts resulting from construction-related vehicles traveling on the construction haul route shown in **Figure III-9-2**. However, given the projected number of trips, the lack of sensitive receivers along the haul route, and that once construction is completed noise levels along the haul route will return to their ambient (i.e., without Project) levels; impacts from construction-related traffic will be **less than significant**.

Threshold: *Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*

Construction noise represents temporary rather than permanent changes in ambient noise levels. Construction noise levels can vary from hour to hour and day to day, depending upon the equipment in use and the operations being performed; however, will cease to occur once construction of the Project is completed. Actual construction noise levels and the impact to sensitive receptors will depend upon several factors: (i) the distance between the construction

[1] Identified as Monitoring Positions on Figure III-9-2

activity and the sensitive receptors; (ii) the types and quantities of equipment used, (iii) the size of the active construction zone; and (iv) the hours of construction, among others.

Project construction is anticipated to commence in 2016, take 15 months to complete, and occur in three non-overlapping periods (or phases) as follows:

Months 1 through 8: The first eight months of construction will be used for excavating the borrow area and hauling and distributing that soil throughout the length of the levee alignments. Approximately 800,000 cubic yards of dirt will be excavated from the borrow area.

Months 9 through 12: Once the soil has been deposited and compacted it will take approximately four months for the cement mixers to construct the protective armoring which prevents levee washout and failure in extreme storm events. This protective armoring consists of a concrete lining that will line the river side of the levee and will extend below the existing ground. The access roads will be graded, but not paved.

Months 13 through 15: The last three months of construction, after the concrete has been laid, 10,000 cubic yards of base material will be delivered and construction completed along the entire levee alignment.

Construction will entail the use of rubber tired loaders, rollers, scrapers, water trucks, rubber tired dozers, cement mixers, and semi-trucks in different combinations for each phase as shown in **Table III-9-D, Construction Equipment and Combined L_{max} by Phase**. No impact devices are expected to be used during Project construction.

Project-related construction noise was modeled for the seven receptor locations shown on **Figure III-9-2** for each construction phase using the Federal Highway Administration Construction Noise Model (FHWA-HEP-05-054) also known as the RCNM. Because the RCNM only allows the input of up to 20 pieces of equipment, L_{max} at 50 feet for each equipment type for each construction phase was calculated and the resulting totals shown in **Table III-9-D** were input into RCMN.

Table III-9-D, Construction Equipment and Combined L_{max} by Phase

Equipment	Months 1–8		Months 9–12		Months 13–15	
	Pieces Used	Combined L_{max} at 50 Feet[a]	Pieces Used	Combined L_{max} at 50 Feet[a]	Pieces Used	Combined L_{max} at 50 Feet[a]
Loader	5	86.0dBA	0	NA	0	NA
Roller	3	84.8dBA	0	NA	0	NA
Scraper	5	91.0dBA	0	NA	0	NA
Water Truck	3	78.8dBA	3	78.8 dBA	3	78.8dBA
Dozer	6	89.8dBA	0	NA	0	NA
Concrete Mixer	0	NA	40	95.0dBA	0	NA

Equipment	Months 1–8		Months 9–12		Months 13–15	
	Pieces Used	Combined L_{max} at 50 Feet[a]	Pieces Used	Combined L_{max} at 50 Feet[a]	Pieces Used	Combined L_{max} at 50 Feet[a]
Semi-Truck Delivery	0	NA	0	NA	40	100
Total[b]	**22**	**97 dBA**	**43**	**95 dBA**	**43**	**100 dBA**

Notes:

[a] Combined L_{max} calculated using the equation $SPL_{Total} = SPL_1 + 10 \text{ Log}_{10}(N)$, where SPL_1 is the Actual L_{max} for a single piece of equipment (per the RCNM)and N equals the number of pieces of equipment. The worksheet is included in Attachment B of Appendix F.

[b] Total L_{max} was approximated by combining the sound pressure levels (dBAs) per the methodology set forth on page 2-14 of the *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, published by California Department of Transportation. (Available at http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf, accessed October 1, 2014).

During the first eight months of construction, in addition to the construction equipment identified in **Table III-9-D,** heavy duty trucks will be driving along the five mile length of the levee picking up and depositing fill materials. Because these trucks will be in continuous motion, they are not anticipated to contribute to a perceptible increase over the noise levels reported in **Table III-9-D** and were not input in RCMN.

The results of the RCNM modeling are presented in **Table III-9-E, Construction Equipment and Predicted Construction Noise Levels**. This table identifies the distance from the construction area, the combined equivalent continuous noise level (L_{eq}) for all pieces of equipment assuming all equipment is operated simultaneously at the same location, and the total predicted L_{eq} at each modeled receptor location.[2]

Table III-9-E, Construction Equipment and Predicted Construction Noise Levels

Receptor No.[a]	Distance from Construction Area (Feet)	Combined L_{eq}(in dBA) per Construction Phase[b]		
		Months 1 – 8	Months 9 – 12	Months 13 – 15
1	205	78	79	79
2	5	111	111	110
3	151	81	82	81
4	1,749	60	60	59

[2] The RCMN Output is included in Appendix F.

Receptor No.[a]	Distance from Construction Area (Feet)	Combined L_{eq}(in dBA) per Construction Phase[b]		
		Months 1 – 8	Months 9 – 12	Months 13 – 15
5	2,318	57	58	57
6	3,178	55	55	54
7	4,055	52	53	52

Notes:

[a] Receptor location (noise monitoring position) as shown on Figure III-9-1, Construction Footprint and Noise Receptors. Receptors 1, 2, and 3 are within the unincorporated territory of Riverside County. Receptors 4, 5, 6, and 7 are within the City of San Jacinto.

[b] Combined L_{eq} per RCNM output included in Appendix F rounded to the nearest whole dBA

It is important to note that the results presented in the above table assume noise is being propagated and received in a flat plane with no obstructions. That is, any noise attenuation that would be provided by existing or future berms, walls, or other solid obstructions between the source and receptors is not taken into consideration. Berms, walls, or other solid obstructions would reduce the noise level at any given receptor significantly. For example, a masonry block wall that completely breaks the line-of-sight from noise source to receptor will typically provide a 5 dBA reduction; a dirt berm, given the same conditions, provides slightly more attenuation. The fact that large portion of the construction activity will occur on the riverward side of the levee, to some extent the sides of the levee will provide attenuation similar to an acoustical berm.

Multiple obstructions have cumulative attenuation effects, for example, a first row of houses with 40–90% coverage will reduce noise by 3 to 5 dBA and each successive row will reduce noise by an additional 1.5 dBA to a 10 dBA maximum (TeNS, p. 2-35). Thus, receptors not directly exposed (i.e., without a direct line-of-sight) to construction activity will experience substantially lower noise levels than those identified in **Table III-9-E**. The further away from the source of the noise-generating activity, the quantity of obstructions increase as does the potential for cumulative noise attenuation effects resulting from those obstructions. For these reasons the noise levels reported in **Table III-9-E** represent a worst case scenario at each receptor location assuming all equipment is operating simultaneously in the same location with no intervening structures, berms, or topography.

Table III-9-F, Worst Case Increases in Ambient Noise Levels Attributable to Project Construction presents the predicted worst-case temporary noise increases at each receptor location for each construction phase.

Table III-9-F, Worst Case Increases in Ambient Noise Levels Attributable to Project Construction

Receptor No.[a]	Ambient Noise[b] (dBA)	L_{eq} (in dBA) per Construction Phase[b]					
		Months 1 – 8		Months 9 – 12		Months 13 – 15	
		Const. Noise[c] (dBA)	Change (dBA)	Const. Noise[c] (dBA)	Change (dBA)	Const. Noise[c] (dBA)	Change (dBA)
1	45	78	33	79	34	79	34
2	46	111	65	111	65	110	64
3	46	81	35	82	36	81	35
4	54	60	6	60	6	59	5
5	73	57	NA[d]	58	NA[d]	57	NA[d]
6	80	55	NA[d]	55	NA[d]	54	NA[d]
7	83	52	NA[d]	53	NA[d]	52	NA[d]

Notes:

[a] Receptor location as shown on **Figure III-9-2, Construction Footprint and Noise Receptors**. Receptors 1, 2, and 3 are within the unincorporated territory of Riverside County. Receptors 4, 5, 6, and 7 are within the City of San Jacinto.

[b] L_{eq} from **Table III-9-B, Ambient Noise Level Measurement Results at Nearby Receptors** rounded to the nearest whole dBA.

[c] Combined L_{eq} per RCNM output included in Attachment C of Appendix F rounded to the nearest whole dBA

[d] Because construction noise is greater than 10 dB less than ambient noise the construction noise will not make a significant contribution (less than 0.5 dB) to the total noise level. (TeNS, p. 2-15)

As indicated in the above table, during construction, the predicted worst case increase in ambient noise at receptor locations 1, 2, and 3 would be from 33–65 dBA depending on the construction phase. A noise level change between 30 and 39 dBA would perceived as eight times as loud; noise level changes above 40 dBA would be perceived as 16 times as loud (TeNS, p. 2-45). It is important to note that of the three locations that will experience an increase in ambient noise as a result of construction, receptor 3, the Country Lake Mobile Home Community, is the only location with sensitive receivers.

In order for portions of construction work occurring within the City of San Jacinto limits to comply with the City's regulations, construction activities will be limited to between the hours of 7:30 a.m. and 6:00 p.m., on weekdays (Monday through Friday) and not allowed on weekends or federal holidays. However, even with limitations on construction hours, **noise**

sourced from temporary on-site construction activities will still have the potential to be significant.

Proposed Mitigation Measures

An Environmental Impact Report is required to describe feasible mitigation measures, which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4). While construction noise impacts to surrounding sensitive receptors cannot be eliminated by feasible mitigation, mitigation measures were evaluated and included for their ability to reduce the potential significant adverse impacts related to noise.

To reduce impacts associated with construction noise during the Project's anticipated 15 month construction period, the following mitigation measures shall be implemented:

MM Noise 1: To prevent construction-related noise, including that occurring within City of San Jacinto and unincorporated Riverside County jurisdictions, from disturbing sensitive receptors during the evening hours, the following restrictions shall be observed in accordance with the City of San Jacinto Municipal Code, Section 8.40.090, A & B, which states:

A. Weekdays. No person, while engaged in construction, remodeling, digging, grading, demolition, or any other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace officer, on any weekday except between the hours of 7:30 a.m. and 6:00 p.m.; and

B. Weekends and Holidays. No person, while engaged in construction, remodeling, digging, grading, demolition or any other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace office, on any weekend day or any federal holiday.

MM Noise 2: To minimize noise impacts resulting from poorly tuned or improperly modified vehicles and construction equipment, all vehicles and construction equipment shall be maintained in good condition and in proper tune per manufacturers' specifications, to the satisfaction of the District ~~City of San Jacinto~~. Equipment maintenance records and equipment design specification data sheets shall be kept on site during construction. Maintenance records shall be submitted monthly to the District ~~City of San Jacinto~~. Compliance with this measure shall be subject to periodic inspections by the District ~~City of San Jacinto~~.

MM Noise 3: To inform potential sensitive receptors of the pending project construction, the District~~City of San Jacinto~~ shall:

A. provide written notification to residents of the Country Lake mobile home parks and two nearby single family residences (or other sensitive receptor(s) at the time of construction) located within 1,400 feet of the project site, 30 days prior to the start of construction. The written notification shall include a tentative construction schedule and contact information for use by the public if specific noise issues arise; and

B. prior to commencement of construction, the District ~~City of San Jacinto~~ shall post contact information on the construction site for use by the public in the event specific noise issues arise. The contact information shall remain in place until construction is complete.

MM Noise 4: To reduce noise impacts associated with temporary diesel- or gasoline-powered generators, and where a portable diesel- or gas-powered generator is necessary, it shall have maximum noise muffling capacity and be located as far as technically feasible from noise sensitive uses.

MM Noise 5: To minimize or eliminate motor-derived noise from construction equipment, contractors shall utilize construction equipment that is either propane- or electric-powered, when technically feasible.

MM Noise 6: To minimize or eliminate noise from portable compressors, generators, and other such equipment, this equipment shall be covered, to the extent that it is technically feasible, with noise-insulating fabric that does not interfere with the manufacturer's guidelines for engine or exhaust operation.

MM Noise 7: To minimize noise from idling engines, all vehicles and construction equipment shall be prohibited from idling in excess of five minutes, when not in use.

MM Noise 8: Temporary noise control barriers (e.g., plywood walls, noise curtains/blankets) shall be utilized to reduce noise impacts when construction takes place near existing residences including two single family residences and the Country Lake Mobile Home Community, towards the southern end of the project's alignment. To be effective, the barrier/curtain must be located at the top of the highest point between the noise source and receptor, must physically fit in the available space, must completely break the line-of-sight between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source, and extend length-wise and vertically as far as feasibly possible to be most effective. If necessary and technically feasible, noise barriers should be tall enough to provide noise reduction for the upper-most stories of nearby sensitive receptors, though this may not always be achievable with abutting multi-story buildings.

Summary of Environmental Effects After Mitigation Measures are Implemented

Mitigation measures **MM Noise 1 through MM Noise 3**, and **MM Noise 7** are qualitative measures in that there are no quantifiable reductions associated with them. **MM Noise 1** limits the times during which construction may occur to the less noise sensitive daytime hours. **MM Noise 2** requires that all utilized construction equipment has properly working, factory-installed noise reduction devices. This will serve to ensure that the projected noise levels, based on manufacturer specifications and monitored levels of properly operating equipment, will not be exceeded. Mitigation measure **MM Noise 3** provides a mechanism for people to report potential exceedances in noise levels so that such exceedances may be properly addressed. **MM Noise 7** prohibits idling of construction related vehicles and equipment in excess of five

minutes, which will reduce the amount of noise generated by such vehicles and equipment, when not in use.

Reduction values associated with mitigation measures **MM Noise 4 through MM Noise 6, and MM Noise 8** can be roughly quantified. **MM Noise 4** requires temporary diesel- or gasoline-powered generators to have the maximum noise muffling capacity and greatest distance placed between it and sensitive receptors. **MM Noise 5** requires the use of propane- or electric-powered construction equipment, where technically feasible. Propane motors will produce marginally less noise; however, electric-powered equipment will eliminate any motor derived noise, the primary source, from the equipment since electric motors are essentially silent. **MM Noise 6** requires portable equipment, such as generators and welders, to be covered with noise insulating fabric (i.e., acoustical blankets) which provides a noise level reduction of 10 to 20 dBA. **MM Noise 8** requires, if technically feasible, that temporary noise barriers be utilized at two locations where construction activity will take place closest to sensitive receptors. This method of attenuation can reduce noise levels by as much as 12 dBA in ideal situations and when applied properly. Many practical considerations must be evaluated before a noise barrier/curtain can be deemed technically feasible, as listed in the mitigation measure. Indeed the limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In these cases, the barrier/curtain system must either be very tall or have some form of roofed enclosure to protect upper-story receptors. **Table III-9-G, Worst Case Increases in Ambient Noise Levels Attributable to Project Construction After Mitigation** presents the predicted worst-case temporary noise increases assuming 12 dBA noise reduction from mitigation measures **MM Noise 4 through MM Noise 6, and MM Noise 8** at each receptor location for each construction phase.

Table III-9-G, Worst Case Increases in Ambient Noise Levels Attributable to Project Construction After Mitigation

Receptor No.[a]	Ambient Noise[b] (dBA)	L_{eq} (in dBA) per Construction Phase[b]					
		Months 1 – 8		Months 9 – 12		Months 13 – 15	
		Const. Noise after Mitigation[c] (dBA)	Change (dBA)	Const. Noise after Mitigation[c] (dBA)	Change (dBA)	Const. Noise after Mitigation[c] (dBA)	Change (dBA)
1	45	66	21	67	22	67	22
2	46	99	53	99	53	98	52
3	46	69	23	70	24	69	23
4	54	48	NA[d]	48	NA[d]	47	NA[d]

Receptor No.[a]	Ambient Noise[b] (dBA)	L_{eq} (in dBA) per Construction Phase[b]					
		Months 1 – 8		Months 9 – 12		Months 13 – 15	
		Const. Noise after Mitigation[c] (dBA)	Change (dBA)	Const. Noise after Mitigation[c] (dBA)	Change (dBA)	Const. Noise after Mitigation[c] (dBA)	Change (dBA)
5	73	45	NA[d]	46	NA[d]	45	NA[d]
6	80	43	NA[d]	43	NA[d]	42	NA[d]
7	83	40	NA[d]	41	NA[d]	40	NA[d]

Notes:

[a] Receptor location as shown on **Figure III-9-2, Construction Footprint and Noise Receptors**. Receptors 1, 2, and 3 are within the unincorporated territory of Riverside County. Receptors 4, 5, 6, and 7 are within the City of San Jacinto.

[b] L_{eq} from **Table III-9-B, Ambient Noise Level Measurement Results at Nearby Receptors** rounded to the nearest whole dBA.

[c] Construction Noise L_{eq} from **Table III-9-F, Worst Case Increases in Ambient Noise Levels Attributable to Project Construction** less 12 dBA reduction for mitigation.

[d] Because construction noise is greater than 10 dB less than ambient noise the construction noise will not make a significant contribution (less than 0.5 dB) to the total noise level. (TeNS, p. 2-15)

As shown in the above table, with the preceding mitigation measures in place, noise impacts associated with the Project's construction activities will be eliminated at receptor location 4 and substantially reduced at all other receptor locations. Even with mitigation, construction sourced noise at receptors 1, 2, and 3 may result in a 21 dBA to 53 dBA temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. Thus impacts in this regard remain **significant and unavoidable.**