Section 6.0 Annotated Draft SEIR/EIS

OPEN BOOKMARKS TO QUICKLY ACCESS SECTIONS LISTED IN THE TABLE OF CONTENTS.

FINAL Annotated
Draft Supplemental Environmental Impact Report/ Environmental Impact Statement

Riverside-Corona Feeder Project

State Clearinghouse No. 2003031121

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ABSTRACT

Project Description

The Riverside-Corona Feeder (RCF) project includes a large capacity, 28-mile long water pipeline ranging in diameter up to 78 inches, up to 20 new and existing wells, and appurtenant facilities associated with aquifer storage and recovery. The proposed project is an alternate alignment (herein "realignment") for the RCF previously evaluated in a Program Environmental Impact Report (PEIR) certified May 18, 2005. The RCF would deliver water from the San Bernardino Groundwater Basin (herein "Basin Area" aka "Bunker Hill") and Chino groundwater basin (herein "Chino Basin"). Imported water supplies would be recharged into the Bunker Hill basin area for later use, taking advantage of available storage capacity. The new alignment will not change the number of wells or the Bunker Hill groundwater extraction described in the 2005 PEIR. Groundwater supplies are also available to the RCF realignment from the Chino Basin under the Optimum Basin Management Plan from desalter facilities.

The purpose of the RCF is to increase firm water supplies, to improve water quality, and to reduce water costs. The project proposes to manage the groundwater levels through the construction of groundwater wells and pumps to deliver the groundwater supply to water users. The new water pipeline will serve portions of San Bernardino and Riverside counties and is sized to move up to 40,000 acre feet of water at 100 cubic feet per second (cfs). This system of storage, extraction and distribution will improve the reliability of WMWD's water supply through the managed storage and distribution of excess imported water and reduce possible water shortages during dry years. (**Figure 1, Regional Location)**

The project originally included eight segments, or "Reaches," referred to as A through H, as analyzed in the *Final Programmatic Environmental Impact Report for the Riverside-Corona Feeder* (SCH #2003031121) which was certified in May 2005.

The project, as currently proposed, includes a realignment of Reaches A through G, which are referred to as the Northern and Central Reaches, with Reach H remaining as proposed in the original project. Some additional "Connection" facilities were also added to the project in 2009 including a new well field for five (5) of the 20 wells, two (2) additional pump stations, one (1) five-million gallon reservoir, and connecting pipelines. The project currently includes the following segments and facilities from north to south. (**Figure 1.0-2, Realignment Alternative with Additional Connections Preferred Alternative,** pg 1.0-15)

- Central Feeder Connection
- Northern Reach
- Central Reach
- Clay Street Connection
- Mockingbird Connection (former Reach E)
- Reach F[1]
- Reach G[1]
- La Sierra Pipeline Connection
- Reach H

[1] Reaches E, F, and G were re-evaluated and **Reaches F and G** were refined slightly in 2007, as analyzed in the *Final Environmental Impact Report for the La Sierra Avenue Water Transmission Pipeline Project* (SCH #2006101152) which was certified by WMWD on February 20, 2008. The refined alignment for Reaches F and G will remain consistent with the approvals in this 2008 Refinement EIR.

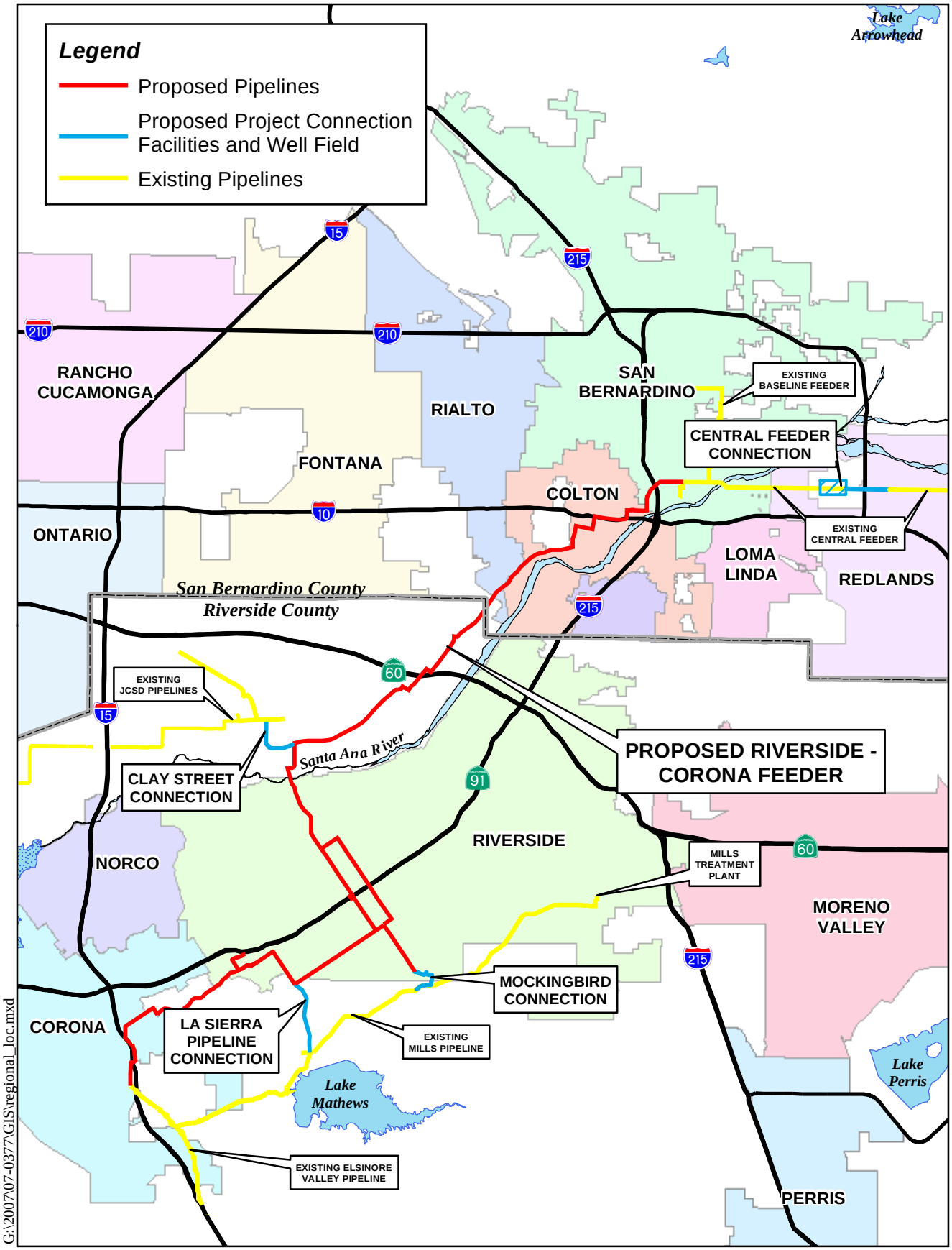

Legend
Proposed Pipelines
Proposed Project Connection Facilities and Well Field
Existing Pipelines
Lake Arrowhead
RANCHO CUCAMONGA
RIALTO
SAN BERNARDINO
EXISTING BASELINE FEEDER
CENTRAL FEEDER CONNECTION
FONTANA
COLTON
ONTARIO
EXISTING CENTRAL FEEDER
LOMA LINDA
REDLANDS
San Bernardino County
Riverside County
EXISTING JCSD PIPELINES
Santa Ana River
PROPOSED RIVERSIDE - CORONA FEEDER
CLAY STREET CONNECTION
RIVERSIDE
NORCO
MILLS TREATMENT PLANT
MORENO VALLEY
MOCKINGBIRD CONNECTION
CORONA
LA SIERRA PIPELINE CONNECTION
EXISTING MILLS PIPELINE
Lake Mathews
Lake Perris
EXISTING ELSINORE VALLEY PIPELINE
PERRIS
G:\2007\07-0377\GIS\regional_loc.mxd
N
W
E
S
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2
4
6
Miles

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Albert A. Webb Associates, *Acoustical Impact Analysis, Riverside-Corona Feeder Project,* October 29, 2009.

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2. Albert A Webb Associates, *Addendum to Traffic Impact Study Report, Riverside-Corona Feeder Realignment Project,* October 2009.

Appendix J - 2008 Reaches E, F and G Refinement EIR

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   - FEIR La Sierra Consultation Summary, certified 2-20-08
   - Cultural Report-La Sierra Wtr Trans
   - Cultural Addendum-La Sierra Wtr Trans

Abbreviated Terms and Acronyms	
2005 Certified Program EIR	2005 PEIR
Air Quality Impact Analysis	AQIA
Air Quality Management Plan	AQMP
Air Resources Board	ARB
Ambient air quality standards	AAQS
Area of Historic High Groundwater	AHHG
Best Management Practices	BMPs
California Air Resources Board	CARB
California Code of Regulations	CCR
California Energy Commission	CEC
California EPA	Cal/EPA
California gnatcatchers	CAGN
California Historical Resources Information System	CHRIS
California Integrated Waste Management Board	CIWMB
California Native Plant Society	CNPS
California Natural Diversity Database	CNDDB
Clean Air Act	CAA
Clean Water Act	CWA
Code of Federal Regulations	CFR
Compensation and Liability Information System	CERCLIS
Comprehensive Environmental Response, Compensation, and Liability Act	CERCLA
Council on Environmental Quality	CEQ
Delhi sands flower-loving fly	DSF
Department of Fish and Game	DFG
Department of Toxic Substances Control	DTSC
Department of Transportation	DOT
Dry-Year Yield Program Expansion	DYYP Expansion
Environmental Data Resources, Inc.	EDR
Environmental Protection Agency or U.S. EPA	EPA, US EPA
Environmental Site Assessment	ESA
Facility Index System	FINDS
Farmland Protection Policy Act	FPPA
Federal Aviation Administration	FAA
Federal Aviation Regulations	FAR
Federal Emergency Management Agency	FEMA
Greenhouse Gas	GHG
Habitat Conservation Plan	HCP
Hazardous and Solid Waste Amendments Act	HSWA
Hazardous Waste and Substances List	List
Hazardous waste manifests	HAZNET
Highway Capacity Manual	HCM
Historical UST Registered Database	HIST UST
Inland Empire Utilities Agency	IEUA

Abbreviated Terms and Acronyms	
Integrated Regional Water Management Plan	IRWMP
Large Quantity Generators	LQGs
Leaking Underground Storage Tank	LUST
Least Bell's vireo	LBV
Level of Service	LOS
Localized Significance Threshold	LST
Manual on Uniform Control Devices	MUTCD
maximum contaminant level	MCL
Most Likely Descendent	MLD
National Ambient Air Quality Standards	NAAQS
National Environmental Protection Agency	NEPA
National Pollutant Elimination System	NPES
National Priority List	NPL
Native American Heritage Commission	NAHC
N-nitrosodimethylamine	NDMA
Non-point Source	NPS
Notice of Preparation	NOP
Occupational Safety and Health Administration	OSHA
Office of Environmental Health Hazards Assessment	OEHHA
Ozone depleting compound	OPC
Particulate matter	PM
Prado Basin MZ	PBMZ
Reactive organic gas	ROG
Regional Conservation Authority	RCA
Resource Conservation and Recovery Act	RCRA
Resource Conservation and Recovery Act	RCRA
Riverside Transit Agency	RTA
Riverside-Corona Feeder	RCF
Riverside-Corona Feeder Project	2005 Project Alignment
Runway protection zones	RPZs
Safe Drinking Water act	SDWA
San Bernardino Archaeological Information Center	SBAIC
San Bernardino Basin Area	Basin Area
San Bernardino County Museum	SBCM
Santa Ana River	SAR
Santa Ana Watershed Project Authority	SAWPA
Small Quantity Generators	SQGs
Solid Waste Landfill Facilities	SWLF
Source Receptor Area	SRA
Southern California Air Quality Management District	SCAQMD
Southwestern willow flycatcher	SWWF
State Implementation Plan	SIP
State Water Project	SWP
State Water Resources Control Board	SWRCB

Abbreviated Terms and Acronyms	
Storm Water Pollution Prevention Plan	SWPPP
Superfund Amendments and Reauthorization Act	SARA
Three Valleys Municipal Water District	TVMWD
Toxic Chemical Release Inventory	TRIS
U.S. Bureau of Reclamation	USBR
U.S. Environmental Protection Agency	USEPA
U.S. Geological survey	USGS
Underground Storage Tanks	USTs
Vehicle miles traveled	VMT
volatile organic compounds	VOCs
Voluntary Cleanup Priority List	VCP
Western Municipal Water District	WMWD

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1. 0 SUMMARY

This Supplemental Environmental Impact Report/Environmental Impact Statement (SEIR/EIS) has been prepared for the Riverside-Corona Feeder Pipeline project ("proposed project" or "project"). The proposed project is an alternate alignment for the Riverside-Corona Feeder Project previously evaluated in a Program Environmental Impact Report (PEIR) certified May 18, 2005. The new alignment will not change the Bunker Hill groundwater extraction described in the 2005 PEIR, although updated groundwater modeling has been evaluated in this SEIR/EIS to determine if potential impacts under current dryer conditions remain less than significant. A summary of the 2005 discussion is included in Section 4.6.2 and evaluation of the new groundwater modeling is included in Sections 4.6 and 4.7.

The environmental impact report is prepared pursuant to the California Environmental Quality Act (CEQA) as a **Supplemental** EIR to augment the analysis in the already certified EIR for this revision to the proposed project. The EIS is prepared pursuant to the National Environmental Policy Act (NEPA) and covers the proposed project's effects in their entirety.

The Initial Study/NOP (Appendix A) concluded that the project would not deplete groundwater supplies, interfere with groundwater recharge, create a net deficit in aquifer volume, lower local groundwater table levels, or create undesirably high groundwater levels in the Bunker Hill basin. The San Bernardino Municipal Water Department and the City of Colton raised concerns over groundwater levels in their scoping comments, so these issues are further discussed in Section 4.6.

1.1 INTRODUCTION

The Riverside-Corona Feeder would deliver water from the San Bernardino Basin Area and Chino Basin. Imported water supplies would be recharged into the Basin Area for later use, taking advantage of available storage capacity. Groundwater supplies are also available to Western Municipal Water District (WMWD) from the Chino Basin under the Optimum Basin Management Plan (OBMP) from the desalting facilities.

The project is proposed to store excess imported water when it is available to increase firm water supplies, to improve water quality, and to reduce water costs. The project proposes to manage the groundwater levels through the construction of groundwater wells in the San Bernardino Basin Area and pumps to deliver the treated groundwater supply to water users. The project will also include a new potable water pipeline system to connect to existing water facilities in ~~serve~~ portions of San Bernardino and Riverside counties. This system of storage, extraction, treatment, and distribution will improve the reliability of WMWD's water supply through the managed storage and distribution of excess imported water and reduce possible water shortages during dry years through reduced dependence on imported water during dry year conditions. To achieve this purpose, the RCF project replenishes excess State Water Project (SWP) water supplied by Metropolitan Water District of Southern California (MWD) into the San Bernardino Groundwater Basin, and extracts, treats, and moves water throughout the region by way of interconnections between local groundwater basins.

The proposed project includes a large capacity water pipeline, and related facilities associated with aquifer storage and recovery. The pipeline is approximately 28-miles long and ranges up to 78 inches in diameter. Up to a total of 20 new and existing groundwater wells may be installed/utilized within the San Bernardino Groundwater Basin ("Basin Area") in San Bernardino County. Existing recharge basins will be used to spread imported water in the San Bernardino Groundwater Basin. The completed project is to be located primarily underground within existing road rights-of-way. The Riverside Corona Feeder (RCF) infrastructure will allow WMWD to purchase State Water Project water from the Metropolitan Water District of Southern California (MWD), store that water in the San Bernardino Groundwater Basin when it is available, and extract the water from the basin when it is needed. The project facilities are designed to deliver up to a maximum of 40,000 acre-feet per year; however, current modeling using current SWP supply availability shows that the actual deliveries are anticipated to be between 6,000 and 9,000 acre-feet per year. Other components of the project may include groundwater treatment facilities and water storage and pumping facilities. The first and second phases of the pipeline will also provide access to groundwater from the Chino Groundwater Basin ("Chino Basin") in San Bernardino/Riverside counties. The proposed project's pipelines and ancillary facilities will be used to deliver water from the San Bernardino groundwater basin to communities throughout western Riverside County during drought and emergency periods and when water is otherwise unavailable.

The proposed project and alternatives for the RCF pipelines and connections to regional facilities will extend for approximately 28 miles across multiple jurisdictions, including unincorporated portions of San Bernardino and Riverside Counties and the cities of San Bernardino, Colton, Corona, Grand Terrace, Redlands, Rialto, and Riverside. (**Figure 1.0-1, Regional Location**)

The realignment evaluated by this SEIR also allows WMWD to address the reduced potential for California State Water Project water availability for groundwater replenishment purposes and includes connections to the Jurupa Community Services District's pipeline facilities, the San Bernardino Valley Municipal Water District's Inland and Central Feeders and other existing WMWD facilities. These connections will facilitate the transportation of potable water from one water agency to another and one groundwater basin to another through the development of multiple interconnected pipelines within the project area. The facilities may also be used to convey local water supplies, once treated, pursuant to rights held by the City of Riverside and the Elsinore Valley Municipal Water District and to deliver treated imported water to wholesale customers. This project will make WMWD less dependent on the direct delivery of water from the Metropolitan Water District of Southern California (MWD) during dry hydrologic years.

For a detailed description of the proposed project, see the description of the "Preferred Alternative," below.

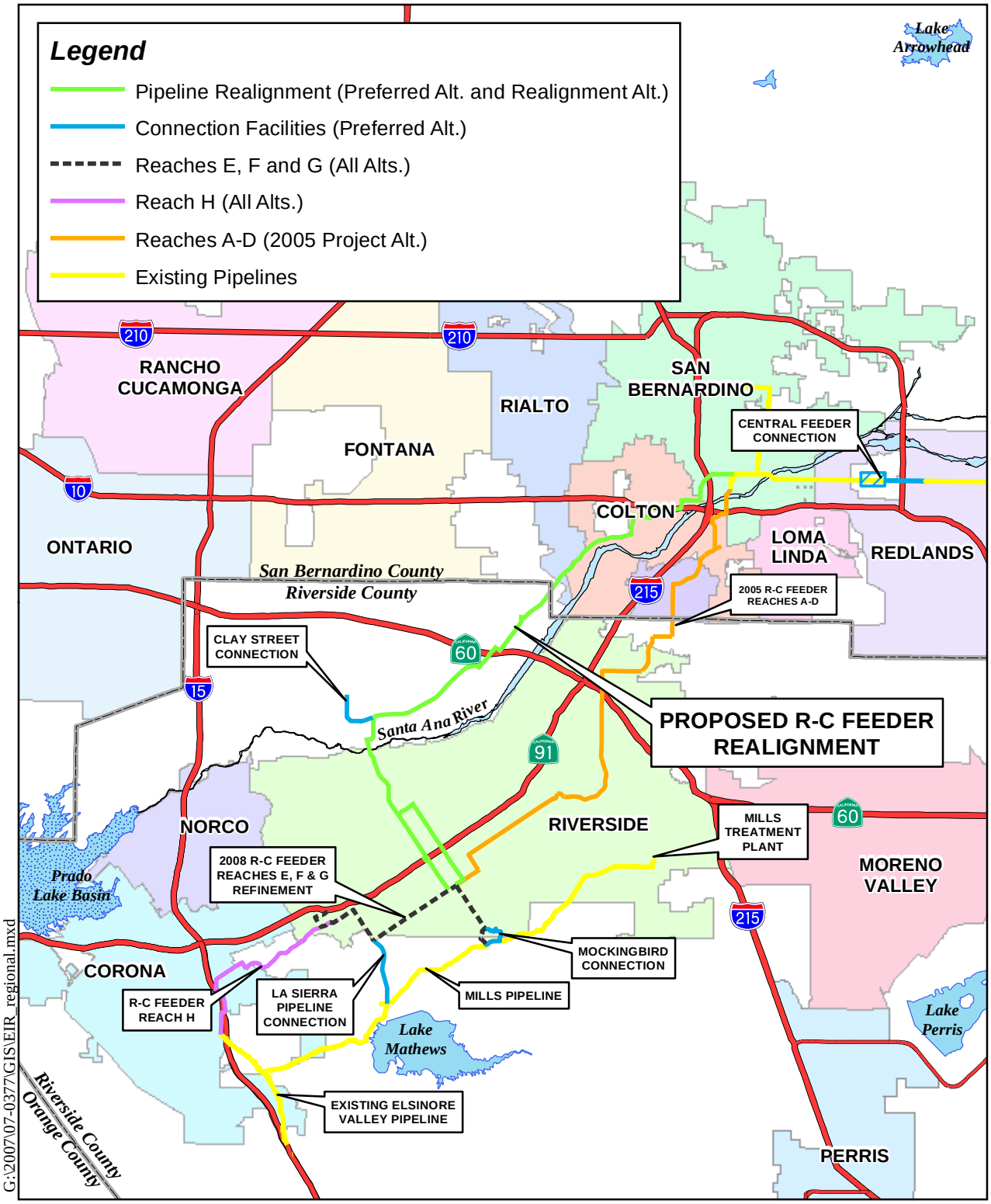


Figure 1.0-1
Regional Location

1.2 SUMMARY OF ALTERNATIVES

Western Municipal Water District initiated feasibility work and conceptual alternatives evaluations of the Riverside Corona Feeder project in 2000. One alignment was selected and adopted. The potential environmental impacts of the current adopted pipeline alignment for the Riverside-Corona Feeder (RCF) project (2005 Project Alignment) were analyzed in the *Final Programmatic Environmental Impact Report for the Western Municipal Water District Riverside-Corona Feeder Project* (SCH: 2003031121) (2005 PEIR attached as Appendix B), which was certified on May 18, 2005. Thus, this original 2005 Project Alignment will serve as one of the alternatives herein analyzed. This Supplemental EIR considers only those areas of impacts that differ from those analyzed in the 2005 PEIR, which are associated with realignment of a portion of the pipeline and the addition of some connecting facilities.

Reaches E, F, and G of the 2005 Project Alignment were re-evaluated and Reaches F and G were refined slightly in 2007, as analyzed in the *Final Environmental Impact Report for the La Sierra Avenue Water Transmission Pipeline Project* (SCH: 2006101152) which was certified by WMWD on February 20, 2008 (2008 Refinement EIR), attached as Appendix J. This refined alignment for Reaches F and G will remain consistent with the 2008 Refinement EIR for the proposed project under both realignment alternatives evaluated herein and as described below.

The **Realignment Alternative with Additional Connections (Preferred Alternative)** is the proposed project and includes a realignment of Reaches A through G from the 2005 Project Alignment (evaluated for purposes of the Supplemental EIR and EIS). The realigned portion of this alternative is separated into two portions referred to as the Northern Reach and the Central Reach which are a realignment of Reaches A through D. The Northern Reach will span from the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino to the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County. The Central Reach will span from the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County to connect to the approved Riverside-Corona Feeder alignment near the intersection of Jackson Street and Cleveland Street in the City of Riverside. The project also proposes an optional alignment on a portion of the Central Reach. The optional alignment would change the proposed realignment between the intersection of Jackson Street and Colorado Avenue, in the City of Riverside, and the intersection of Cleveland Avenue and Irving Street, in the City of Riverside. This alternative includes a portion of Reach E, F and G as analyzed in the 2008 Refinement EIR, and Reach H of the 2005 Project Alignment. Reaches E through H are analyzed for purposes of the EIS but are not required to be reanalyzed as part of the SEIR. (**Figure 1.0-2, Realignment Alternative with Additional Connections (Preferred Alternative**)

Operations of the Preferred Alternative would include the use of existing and/or new wells, as analyzed in the 2005 Project Alignment Final EIR, and/or the use of new wells adjacent to the Central Feeder Connection, described below. Up to a total of 20 wells could be used to properly manage water extractions associated with the RCF. Not all wells would operate at the same time; approximately 25 percent would be pumping at any one time. Wells may be located in the various well fields evaluated in the 2005 Project Alignment EIR and in the Central Feeder

Connection area evaluated herein. As with the original 2005 Project Alignment, the project facilities are designed to deliver up to 40,000 acre-feet; however, current modeling using current SWP supply availability shows that the actual deliveries are anticipated to be between 6,000 and 9,000 acre-feet per year.

Some additional connection facilities were added to the project in 2009 (evaluated for purposes of this Supplemental EIR and the EIS). (**Figure 1.0-1)** The four facilities added to the realigned pipeline include the Central Feeder Connection, which would allow WMWD to move water through San Bernardino Valley Municipal Water District's Central Feeder pipeline in San Bernardino County providing flexibility and the efficient transport of water throughout the system to WMWD's service area; the Clay Street Connection, which would accept water directly from the Chino Desalter Phase 3 facilities pursuant to existing WMWD water rights in the Chino Basin; and the Mockingbird and La Sierra Pipeline Connections which facilitate connections to the existing MWD Mills Pipeline for the efficient transport of water throughout the service area.

The Central Feeder Connection provides a missing segment of San Bernardino Valley Municipal Water District's Central Feeder Pipeline, up to five (5) new production wells and associated connecting pipes to be located within the San Bernardino Basin Area (exact locations of the wells not determined). The Central Feeder Connection consists of approximately 6,350 linear feet of an up to 54-inch diameter pipeline located in the San Bernardino Avenue right-of-way between Alabama Street in unincorporated San Bernardino County and Webster Street in the City of Redlands. Up to five new 350 HP x 2,200 gallons per minute (GPM) wells within the well field identified on **Figure 1.0-2** are also proposed. These five wells are included within the 20 total wells associated with the RCF. This connecting link in the regional system will provide additional means for transporting San Bernardino Groundwater Basin water through regional pipeline facilities that are connected to the Riverside-Corona Feeder project.

Projected operations of the new wells were used in the framework for analysis of potential groundwater impacts during prolonged dry-year periods (drought) and emergency periods. Analysis provided by Geoscience Support Services, Inc. in March 2010 was based on the following: the RCF is supported by, and fully consistent with, MWD's Integrated Resource Plan, the Santa Ana Watershed Project Authority's Integrated Watershed Plan, and the regional water planning efforts for the cities of Riverside, Norco, Corona, Elsinore Valley Municipal Water District, Jurupa Community Services District, Home Gardens County Water District, Lee Lake Water District and March Air Reserve Base. Groundwater modeling was performed to assess potential groundwater impacts that might result from the RCF including impacts to the Western Judgment and the Newmark Groundwater Superfund Site. See Sections 4.6 and 4.7 for detailed assumptions and results.

The Clay Street Connection is approximately 7,800 linear feet of pipeline, up to 48 inches in diameter, within unincorporated Riverside County; extending west within Limonite Avenue from the Limonite Avenue/Clay Street intersection, and then north in Pedley Road to 56th Street. This connection will allow the RCF project to connect to an existing Jurupa Community Services District (JCSD) waterline in 56th Street. Through this connection, the RCF project will be able to connect to JCSD's system, to tie into the Chino Desalter Phase 3 expansion, and to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin Dry-Year Yield

Program. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction.

The Mockingbird Connection consists of approximately 5,900 linear feet of pipeline, up to 42 inches in diameter, located within street rights-of-way, and within pipeline easements within the City of Riverside and adjacent unincorporated Riverside County, a five million-gallon reservoir and a related pump station. The purpose of this portion of the RCF is to pressurize the system to allow water to flow up to the Mills Gravity Pipeline. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station.

The La Sierra Pipeline is approximately 10,800 linear feet of up to 42-inch diameter pipeline located within the La Sierra Avenue right-of-way in unincorporated Riverside County. The La Sierra Pipeline would extend south from the intersection of La Sierra Avenue and Cleveland Avenue to connect to the existing Mills Gravity Pipeline, located at the intersection of La Sierra Avenue and El Sobrante Road. This facility provides a connection with the Arlington Desalter pipeline to move water from the Chino Basin to the Mills Gravity Pipeline.

The second alternative is the **Realignment Alternative** which includes only a realignment of Reaches A through G from the 2005 Project Alignment and does not include the additional connection facilities of the Preferred Alternative. This alternative includes the Northern Reach and the Central Reach, as described above, which is a realignment of Reaches A through D, plus Reaches E through G as described in the 2008 Refinement EIR, and Reach H of the 2005 Project Alignment. (**Figure 1.0-3, Realignment Alternative**) Specifically, the realignment created the ability for WMWD to provide water to the Jurupa Community Services District, and additional San Bernardino County jurisdictions. The same pump station, wells, and water supply quantities/use are assumed for this alternative as for the 2005 Project Alignment Alternative, described below.

Lastly, the **2005 Project Alignment Alternative**, as analyzed in the 2005 PEIR, includes Reaches A though H, with Reach A starting in San Bernardino and Reach H ending in Corona. (**Figure 1.0-4, 2005 Project Alignment Alternative**) The majority of this alternative is located within the City of Riverside (Reaches B through H), with some sections traversing portions of the cities of Colton, Corona and Grand Terrace, and the County of Riverside. Infrastructure proposed to be constructed as part of the 2005 Project Alternative includes: a 30-mile long feeder pipeline with one mainline meter and five metered turnouts, a 2,500 horsepower (hp) pump station designed to lift water from the City of Riverside's Waterman Pipeline into the 2005 Project Alignment which operates at an hydraulic gradient line (HGL) of 1250±, and up to twenty (20) 350 HP x 2,200 gallons per minute (GPM) new or existing groundwater production wells to be located within the San Bernardino Basin Area.

In addition to the three action/alignment alternatives being evaluated, a No Project/No Action Alternative is considered in this SEIR/EIS. The **No Project/No Action Alternative** assumes no facilities are built and no water associated with this project is spread for recharge.

1.3 SUMMARY OF SIGNIFICANT CONCLUSIONS OF THE ALTERNATIVES

The scope of this SEIR/EIS covers the issues of aesthetics, air quality, biological resources, cultural and paleontological resources, energy, hazards/hazardous materials, groundwater (levels and water quality), land use, noise, stormwater (surface water quality), and transportation. Significant (adverse and beneficial) conclusions of each of the alternatives, after the implementation of mitigation, are identified below. **Table 1.0-A, Summary of Environmental Impacts** includes the summary of environmental effects after mitigation measures have been incorporated. Section 6.3, Significance of Impacts Under CEQA, summarizes in greater detail the conclusions listed below and the analyses contained in Section 4.0.

No Project/Action Alternative

- **Aesthetics/ Visual:** No effect.
- **Air Quality/Climate Change:** No effect.
- **Biological Environment:** No effect.
- **Cultural Resources/Paleontology:** No effect.
- **Energy:** No effect.
- **Groundwater Levels:** As there would be no recharge or extraction associated with the No Project/Action Alternative, no effects would result to groundwater levels from this alternative. Water reliability would not be improved without the project, however, and imported supplies may not be available to some water agencies located north of the Santa Ana River.
- **Groundwater Quality:** Due to the increased groundwater gradient resulting from 2005 Project Alignment Alternative recharge and extraction in the San Bernardino Basin Area, the rate of subsurface flow is increased and the Newmark and Muscoy plumes are cleaned up more quickly under RCF Project conditions than under No Project conditions. The footprint of the Newmark and Muscoy plumes was smaller at the end of the forecast period for the RCF Project operation than for the No Project condition. Seven wells that would be contaminated under No Project Condition would avoid contamination due to Project implementation. However, as there would be no recharge or extraction associated with the No Project/Action Alternative, no improvement to groundwater quality would result from this alternative.

- **Hazards and Hazardous Waste/Materials:** No effect.
- **Land Use:** No effect.
- **Noise:** No effect.
- **Stormwater/Water Quality:** No effect.
- **Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access:** No effect.

2005 Project Alignment Alternative

- **Aesthetics/ Visual:** Less than significant with mitigation.
- **Air Quality/Climate Change:** Less than significant air impacts without mitigation due to consistency with the Air Quality Management Plan (AQMP).

  Significant short-term impacts during construction with the implementation of mitigation measures.

  Less than significant long-term impacts related to criteria pollutants once the project is operational.

  For purposes of the EIS, the Preferred Alternative was evaluated for conformity with the federal Clean Air Act and was found to have de minimus effects. The 2005 Project Alignment Alternative has lower construction emissions and less operational energy use than the Preferred Alternative, therefore this alternative would have **de minimus effects** also.

  Although not originally evaluated in the 2005 PEIR, greenhouse gas (GHG) emissions were evaluated in this SEIR/EIS with the following findings related to the 2005 Project Alignment Alternative:

  Less than significant short-term construction-related GHG emissions.

  Less than significant long-term emissions of GHG due to consistency with the California Air Resources Board (CARB) scoping plan, and the total CO_2 emissions for this alternative would not exceed the CARB and SCAQMD draft GHG thresholds for industrial projects.

- **Biological Environment:** Less than significant with mitigation.
- **Cultural Resources/Paleontology:** Less than significant with mitigation.
- **Energy:** Less than significant.

- **Groundwater Levels:** Less than significant in terms of impacts to the Basin Area groundwater levels overall, and in terms of adverse impacts to an individual pumper. To assure that these findings are maintained throughout project operation, MM GWL 2 (Revised) will be implemented. Water agencies in the Basin Area have generally agreed on an approach whereby water levels in the forebay areas should be stabilized at acceptable elevations by management of recharge of local and imported water while water levels in the AHHG should be controlled to acceptable elevations by pumping, including, when necessary, pumping in excess of local water supply needs. The proposed project would help to implement that approach.

- **Groundwater Quality:** Less than significant with mitigation. Due to the increased groundwater gradient resulting from 2005 Project Alignment Alternative recharge and extraction, the rate of subsurface flow is increased and the Newmark and Muscoy plumes are cleaned up more quickly under RCF Project conditions than under No Project conditions. The footprint of the Newmark and Muscoy plumes was smaller at the end of the forecast period for the RCF Project operation than for the No Project condition, however, seven wells that would be contaminated under No Project Condition would avoid contamination due to the 2005 Alignment Alternative and five additional wells would be contaminated at some time during the model period..

- **Hazards and Hazardous Waste/Materials:** Less than significant regarding hazardous materials with mitigation. No effect related to Riverside Airport.

- **Land Use:** No effect.

- **Noise:** Less than significant short-term effect.. No long-term effects.

- **Stormwater/Water Quality:** Less than significant with mitigation.

- **Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access:** Less than significant potential temporary significant impacts to transportation services and sensitive uses with mitigation. No long-term effects.

Realignment Alternative

- **Aesthetics/Visual:** Less than significant short-term effects with mitigation. No long-term effects.

- **Air Quality/Climate Change:** Less than significant air impacts without mitigation due to consistency with the Air Quality Management Plan (AQMP).

  Significant short-term construction emissions with mitigation implemented.

  Less than significant long-term criteria pollutant impacts once the project is operational.

For purposes of the EIS, the Preferred Alternative was evaluated for conformity with the federal Clean Air Act and was found to have de minimus effects. The Realignment Alternative has lower construction emissions than the Preferred Alternative, therefore, this alternative would have de minimus effects also.

Although not originally evaluated in the 2005 PEIR, greenhouse gas (GHG) emissions were evaluated in this SEIR/EIS with the following findings related to the Realignment Alternative:

Less than significant short-term construction-related GHG emissions.

Less than significant long-term emissions of GHG due to consistency with the California Air Resources Board (CARB) scoping plan, and the Realignment Alternative emissions would not exceed the CARB and SCAQMD draft GHG thresholds for industrial projects.

- **Biological Environment:** Less than significant with mitigation.
- **Cultural Resources/Paleontology:** Less than significant impacts to historic, archaeological and paleontological resources, and human remains with mitigation.
- **Energy:** Less than significant.
- **Groundwater Levels:** Less than significant with mitigation. Same impacts projected as for the 2005 Project Alignment Alternative.
- **Groundwater Quality:** Less than significant with mitigation. Same impacts projected as for the 2005 Project Alignment Alternative.
- **Hazards and Hazardous Waste/Materials:** Less than significant with mitigation regarding hazardous materials. Less than significant related to Riverside Airport with mitigation.
- **Land Use:** No effect.
- **Noise:** Less than significant short-term effects. No long-term effects.
- **Stormwater/Water Quality:** Less than significant.
- **Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access:** Less than significant potential temporary significant impacts to transportation services and sensitive uses with mitigation. No long-term effects.

Realignment Alternative with Additional Connections (Preferred Alternative)

- **Aesthetics/ Visual:** No effects to visual character resulting from pipeline portions of the project. Less than significant impacts related to the Clay Street Connection's booster station and the Mockingbird Connection's reservoir and booster station with mitigation.

- **Air Quality/Climate Change:** Less than significant air impacts without mitigation due to consistency with the Air Quality Management Plan (AQMP).

  Significant short-term construction emissions with mitigation implemented.

  Less than significant long-term criteria pollutant impacts once the project is operational.

  For purposes of the EIS, the Preferred Alternative was evaluated for conformity with the federal Clean Air Act and was found to have de minimus effects. The Realignment Alternative has lower construction emissions than the Preferred Alternative, therefore, this alternative would have de minimus effects also.

  Although not originally evaluated in the 2005 PEIR, greenhouse gas (GHG) emissions were evaluated in this SEIR/EIS with the following findings related to the Realignment Alternative:

  Less than significant short-term construction-related GHG emissions.

  Less than significant long-term emissions of GHG due to consistency with the California Air Resources Board (CARB) scoping plan.

  The Preferred Alternative includes four pump stations and up to 20 wells (only 5 operating at one time). The total CO_2 emissions for this alternative would exceed the CARB and SCAQMD draft GHG thresholds for industrial projects; although there are no thresholds for infrastructure projects of this nature. The exact reductions in energy consumption provided by the mitigation measures is not known so to be conservative GHG impacts are evaluated against the industrial threshold and considered **significant** and unavoidable.

- **Biological Environment:** Less than significant impacts with mitigation which are the same as the Realignment Alternative, above. Less than significant with mitigation for Additional Connections portions of the Preferred Project.

- **Cultural Resources/Paleontology:** Less than significant impacts to historic, archaeological and paleontological resources, and human remains with mitigation.

- **Energy:** Less than significant.

- **Groundwater Levels:** Less than significant with mitigation. Same impacts projected as for the other alternatives.

- **Groundwater Quality:** Less than significant indirect impacts with mitigation. Effects of the project are improved with the operations of the Preferred Alternative because of the added flexibility offered through the location of an additional well field located outside the Area of Historic High Groundwater (AHHG) and the Newmark Groundwater Contamination cleanup area. The original modeling results show no change in the Norton and Redland-Crafton TCE plume areas as a result of project operations.

  Less than significant direct groundwater quality impacts (TDS and nitrates) without mitigation due to the quality of the water being used for recharge being similar or better than the quality of the receiving water.

- **Hazards and Hazardous Waste/Materials:** Less than significant regarding hazardous materials with mitigation. Less than significant related to Riverside Airport with mitigation.

- **Land Use:** No effect.

- **Noise:** Less than significant short-term effects. No long-term effects.

- **Stormwater/Water Quality:** Less than significant.

- **Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access:** Less than significant potential temporary significant impacts to transportation services and sensitive uses with mitigation. No long-term effects.

1.4 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

The primary controversy associated with the proposed project is the perception that the recharge and extraction from the San Bernardino Basin area will affect groundwater quality and/or rights. The City of San Bernardino Municipal Water Department identified in their letter dated, 8/18/08, that this project could cause a negative impact to the management of the Newmark Groundwater Superfund Site and, if not managed responsibly, could affect water availability and/or storage capacity in the Basin area. The City of San Bernardino has responsibility for managing the Newmark Groundwater Superfund Site through diligently protecting the inhibitor wells that were designed and constructed pursuant to the federal government's requirements and at its expense. Letters received from the cities of San Bernardino and Colton indicate their concerns that groundwater modeling and operating scenarios analyzed in the 2005 PEIR may no longer be valid due to substantial changes in the state with respect to water supply since 2005. In response to this concern, new groundwater modeling for proposed new wells in the vicinity of the Central Feeder Connection was prepared. This modeling was added to evaluate the option of pumping water a greater distance away from the inhibitor wells, and to evaluate impacts in drought ("prolonged dry-year") conditions. Discussions and coordination between the City of San Bernardino and WMWD are ongoing. Results of the studies are presented in Sections 4.6 and 4.7.

Additional concerns have been raised by several jurisdictions and the Rapid Transit Agency with respect to the large pipelines portions of the project in relation to the disruption of traffic and transit services. Construction-related issues are mitigated to less than significant levels by implementation of coordination and planning with local jurisdictions required in mitigation measures **MM Trans 1** through **MM Trans 14**, in Table 1.0-A, below. These issues are analyzed at a project-specific level for earlier phases of development and at the programmatic level for latter phases in Section 4.12.

The City of Riverside submitted a recommendation for an alternative alignment which could avoid their concerns about disrupting traffic and affecting recently improved areas in and near Van Buren Boulevard in their letter dated 3/26/10. The City also raised a concern that this pipeline may not fit in the proposed alignment due to the existence of other pipelines in Van Buren Boulevard. The City describes the proposed alternate alignment by stating it "would veer from Limonite Drive heading southwest in Riverview Drive, cross the Santa Ana River into the City of Riverside, and possibly connect to the Monroe Street Alignment option directly, or head southwest in Colorado Avenue to reach Jackson Street."

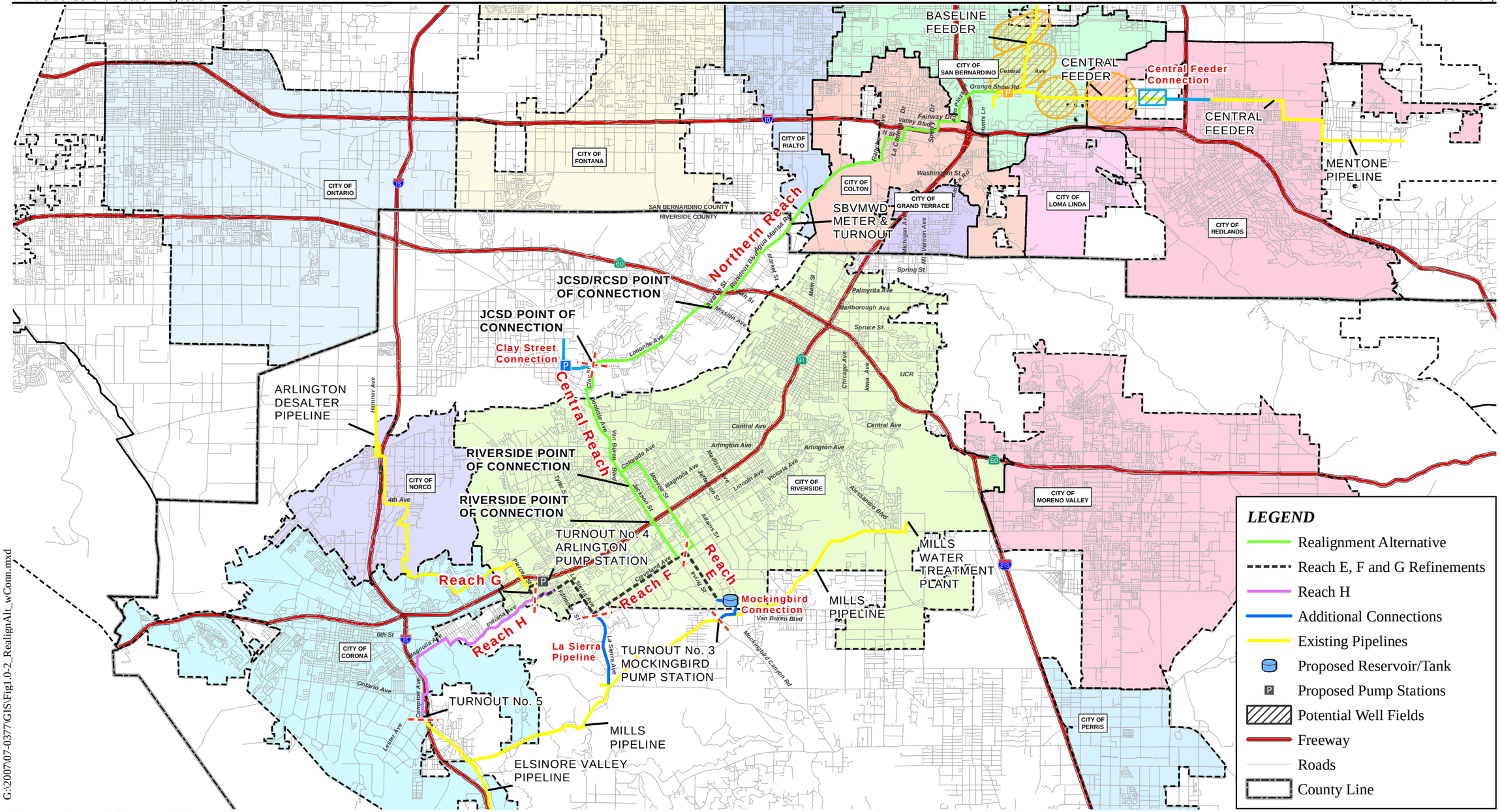
To address this concern, WMWD has preliminarily evaluated the suggested alignment and has some concerns. Since this portion of the project is in Phase 2, there will be time to coordinate further with the City to resolve any issues associated with construction in the Van Buren area, and come to a satisfactory conclusion which may or may not require further CEQA/NEPA clearance. WMWD's concerns include:

- Crossing through or under the Riverside Municipal Airport, or lengthening the alignment to avoid the airport

- Delay of Phase 1 construction

Project engineers have preliminarily reviewed space availability for the pipe and determined that, although tight, there is room in the proposed alignment assuming abandoned underground facilities are removed during construction. MM Trans 2 requires completion of a Traffic Control Plan for each phase of project construction which requires coordination with the local jurisdiction, including City of Riverside, when a project is located within that jurisdiction. Other mitigation measures that address the disruption caused by construction include: MM Trans 1, 3, 5 through 8, and 10 through 11. In addition, the project design, existing regulations and mitigation measures MM Trans 12 through 14, and MM Aes 1, which requires replacement of landscaping to the local jurisdiction's satisfaction, will ensure that the new improvements the City has installed will be replaced/returned to their condition at the time construction of the RCF occurs.

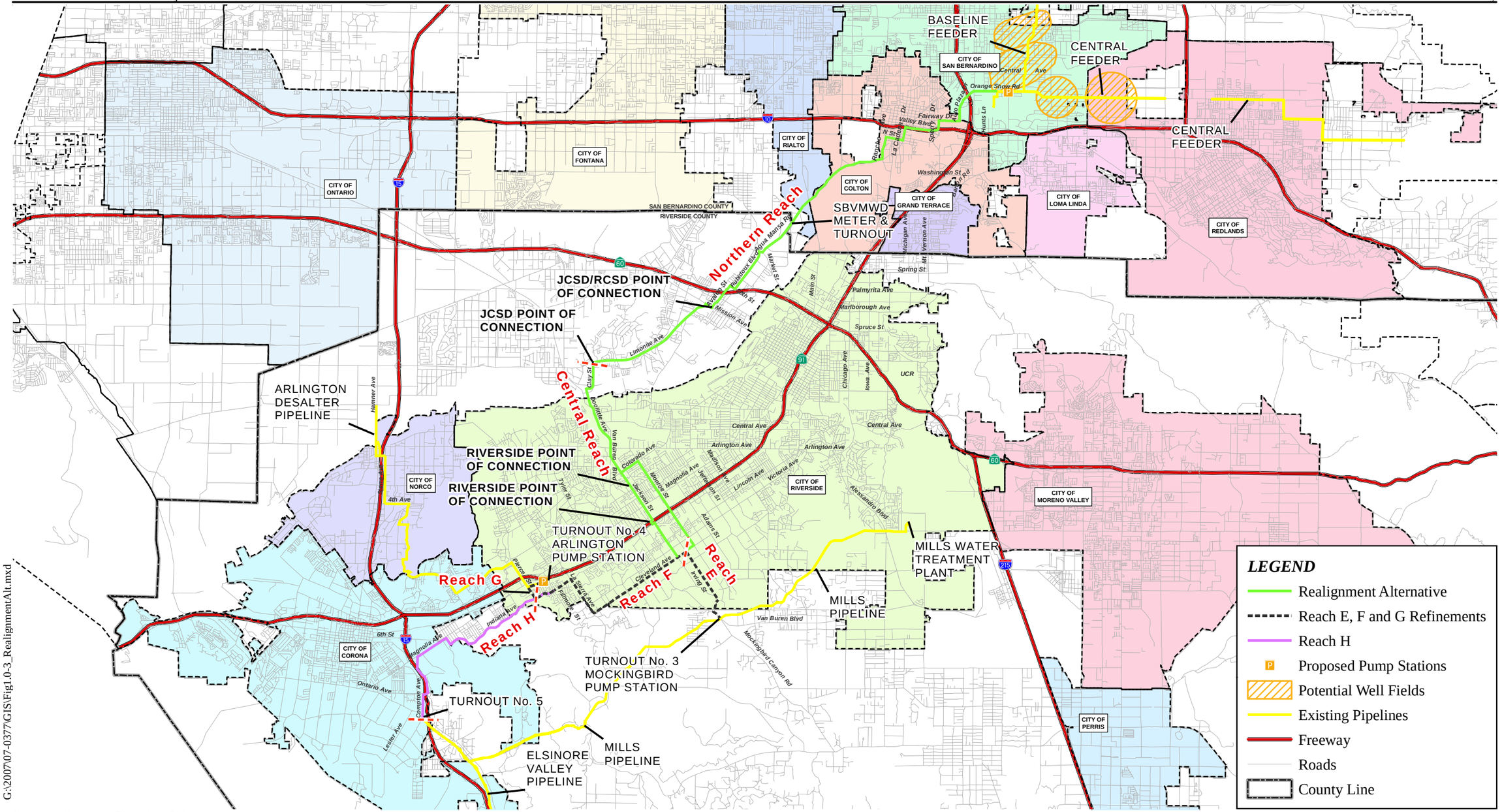
WMWD will continue to work with the City to address these concerns to reach a mutually agreeable solution.



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Sources: County of Riverside, 2009; County of San Bernardino, 2009.

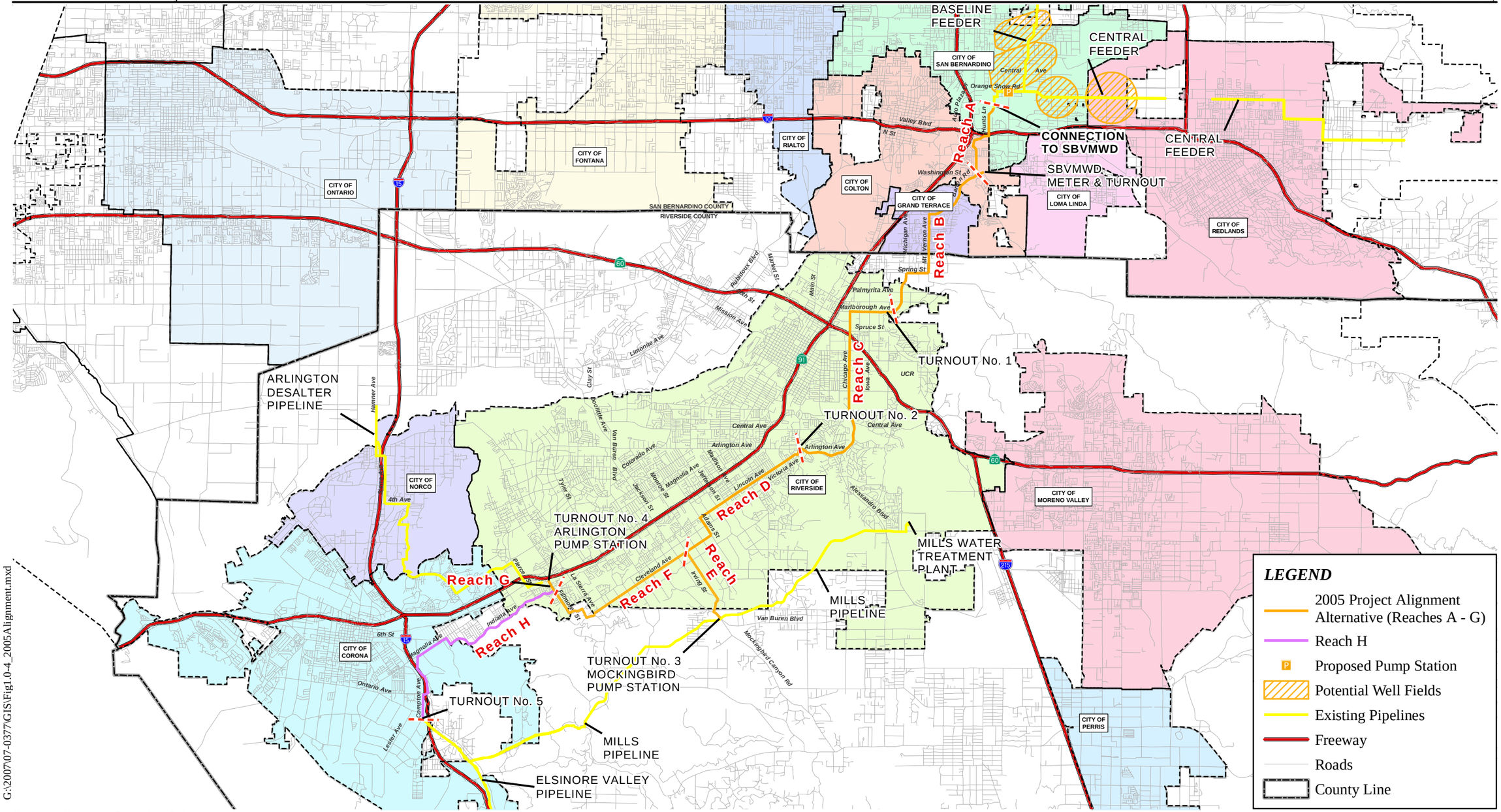
Figure 1.0-2
Realignment Alternative with Additional Connections
Preferred Alternative



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Sources: County of Riverside, 2009;
County of San Bernardino, 2009.

Figure 1.0-3
Realignment Alternative



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Sources: County of Riverside, 2009;
County of San Bernardino, 2009.

Figure 1.0-4
2005 Project Alignment Alternative

Table 1.0-A, Summary of Project Impacts and Mitigation

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
Aesthetics	Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings during construction.	All Alternatives	**MM Aes 1**(AES 1)**:** Plants and trees removed or damaged by the proposed project shall be replaced pursuant to the standards and requirements of each jurisdiction within which the loss or damage occurs.	Potentially significant	Encroachment permit or other approved by affected agency. Installation no later than 30 days after construction is complete.	WMWD Local affected agency approving and inspecting project.	Approved plans and final site inspection.	Less than Significant
	Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings during construction.	All Alternatives	**MM Aes 2** (AES 2)**:** The location of all existing mature trees, palms, and other landscaping shall be noted on the construction drawings that will be prepared for this project to facilitate review and proper permitting by the affected jurisdiction. Generally, a mature wood tree is considered to have a diameter of 8-10 inches or more at 4½ feet off the ground. A palm tree is considered to be mature at 25 feet or more in height. Citrus trees are mature when commercial levels of fruit-bearing occur at about 5 to 7 years.	Potentially significant	Plan preparation	WMWD	Plan approval by WMWD.	Less than Significant
	Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings during construction.	All Alternatives	**MM Aes 3** (AES 3)**:** If construction activities that require digging are located closer than eight feet from a mature palm (over 25 feet in height), a certified arborist shall evaluate the specific palm(s) to determine if the palm can remain in place, be relocated successfully or if project redesign may be warranted. If the palm must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the palm(s) is/are located.	Potentially significant	Prior to construction plan completion and as early in the design process as possible.	WMWD	Arborist to present WMWD with findings report to be incorporated into project design and landscape plans.	Less than Significant
	Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings during construction.	All Alternatives	**MM Aes 4** (AES 4)**:** If construction activities that require digging are located closer than thirty feet from the drip line of a mature wood tree, a certified arborist shall evaluate the specific tree(s). The arborist will recommend the course of action most likely to preserve the tree including but not limited to trimming to help with stability, no action and the tree remains in place as is, project redesign, or the means to achieve a successful relocation. If the tree must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the tree(s) is/are located.	Potentially significant	Prior to construction plan completion and as early in the design process as possible.	WMWD	Arborist to present WMWD with findings report to be incorporated into project design and landscape plans.	Less than Significant
	Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings after operational.	Preferred Alternative Only	**MM Aes 5:** To minimize the visual impact of a large reservoir/tank from public roads and hilltops in the vicinity, the Mockingbird Connection tank shall be buried and backfilled with dirt to where no more than three (3) feet of tank is visible. The top of the tank need not be buried, so as to allow for maintenance access. The disturbed and manmade slopes around the tank shall be stabilized and re-landscaped with a palette of plants consistent with the plant mix that is established as part of the revegetation requirements for the site, as determined by WMWD and the US Fish and Wildlife Service during Section 7 Consultation. Prior to the approval of grading plans, the grading and landscape plans for the reservoir/tank will be reviewed by WMWD and the City of Riverside.	Potentially significant	Prior to Grading	WMWD City of Riverside	Grading and landscape plans shall be reviewed.	Less than Significant

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	Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings after operational.	All Alternatives	**MM Aes 6:** To minimize the visual impact of above-grade facilities associated with pump/booster stations, all the pump/booster stations shall be enclosed and/or screened within a building, walls, or fencing, and with landscaping. Prior to building plans, pump enclosure plans and landscape plans will be reviewed by WMWD.	Potentially significant	Pre-Construction	WMWD	Building, pump enclosure and landscape plans shall be reviewed.	Less than Significant
Air Quality	Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation related to short-term construction impacts.	All Alternatives	**MM Air 1:** Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction site and provide temporary traffic control (i.e. flag person) during earthen material transport and other construction-related truck hauling activities (10% reduction)[1].	Potentially significant	Prior to construction with early consultation desired by jurisdiction(s) for each Reach. See MM Trans 2.	WMWD	Traffic Control Plan provided to each jurisdiction prior to construction. See MM Trans 2	Significant
	Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation related to short-term construction impacts.	All Alternatives	**MM Air 2:** During construction of the proposed improvements one of the following options must be used to supply the power needs for boring/tunneling operations: Prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to facilitate the use of electricity from power poles as a primary source or power for stationary construction equipment, unless construction is occurring at locations where power poles are not available. If access to power poles is not available, the following options must be used to supply the power needs for construction 1) use natural gas fueled generator sets; 2) use low emission, duel fueled generator sets; or 3) other low-emission power sources/supplies as appropriate and feasible. prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to provide temporary construction power at the boring/tunneling sites (67% reduction).	Potentially significant	During construction, but type of power source to be specified on construction plans.	WMWD	Construction drawing specifications, WMWD site inspections.	Significant
	Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation related to short-term construction impacts.	All Alternatives	**MM Air 3:** During construction of the proposed improvements, all mobile and stationary-construction equipment will be properly maintained at an off-site location including proper tuning and timing of engines (5% reduction)[1]. Equipment maintenance records and equipment design specification data sheets shall be kept on-site for the complete duration of construction.	Potentially significant	During construction.	Contractor	Construction drawing specifications and WMWD inspections.	Significant
	Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation related to short-term construction impacts.	All Alternatives	**MM Air 3a:** Construction deliveries shall be consolidated and scheduled to off-peak hours to reduce congestion of local streets.	Potentially significant	During construction	Contractor construction manager	Report to WMWD and included in Traffic Control Plan.	Significant
	Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation related to short-term construction impacts.	All Alternatives	**MM Air 4a:** To reduce fugitive dust emissions, the contractor shall provide WMWD with sufficient proof of compliance with Rule 403 and other dust control measures including, but not limited to: • requiring the application of non-toxic soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 20 days or more, assuming no rain); • requiring all trucks hauling dirt, sand, soil, or other loose	Potentially significant	During construction	Contractor construction manager	Report to WMWD.	Significant

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			materials are to be covered or must maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code; • suspending all excavating and grading operations when wind gusts (as instantaneous gust) exceed 25 miles per hour over a 30-minute period; • post contact information outside the property for the public to call if specific air quality issues arise; • use SCAQMD Rule 1186 and 1186.1 certified street sweepers or roadway washing trucks when sweeping streets to remove visible soil materials, replace ground cover in disturbed areas as quickly as possible~~.~~; and • install gravel bed trackout apron (3 inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) to reduce mud/dirt trackout from unpaved truck exit routes where appropriate (i.e., Mockingbird reservoir and booster station, Clay Street booster station).					
	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.	All Alternatives	**MM Air 5:** To address the CAPCOA White Paper on CEQA and Climate Change (CAPCOA) MM E-1 and reduce energy use, high-efficiency pumps shall be used within the project facilities. Pumps shall be selected based on the optimal pump to use for the particular application (i.e. location, hydrology, size, purpose, etc.). This results in low energy use for the application. The project will use pumps that are as energy efficient as possible without sacrificing performance.	Potentially significant	During construction	Contractor construction manager	Report to WMWD.	Significant
	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.	All Alternatives	**MM Air 6:** To reduce consumption due to all non-pumping related energy, solar generation is required for lights, timers, landscape irrigation systems, and all other non-pumping energy uses.	Potentially significant	During construction	Contractor construction manager	Report to WMWD.	Significant
	Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation related to short-term construction impacts. 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.	All Alternatives	**MM Air 7:** To reduce construction vehicle emissions, the bid specification packages for individual Project construction phases shall require the bidding company's fleet of off-road diesel-powered construction equipment greater than 25 hp to meet Tier 3 off-road emissions standards or better. Any emissions control device used by the contractor shall achieve Level 3 emissions reductions of no less than 85 percent for particulate matter, as specified by CARB regulations. The bidding company shall also provide certification that their fleet is in compliance with CARB's In-Use Off-Road Diesel Vehicle Regulation in effect at that time, or proof that the bidding company has applied to the SCAQMD SOON Program (and/or other applicable grant programs) to acquire funding assistance to bring it into compliance. During the bid process, proof of compliance shall be provided to WMWD, which shall include but is not limited to, CARB and/or SCAQMD operating permit(s), and other documentation such as a copy of each unit's certified tier specification, BACT documentation, and/or	Potentially significant	Prior to close of bidding process.	WMWD	Submittal of proof of fleet compliance.	

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			other compliance documentation.					
Biological Environment	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 U. S. Wildlife Service.	All Alternatives	**MM Bio 1:** In Reach A or Central Reach crossings of the Santa Ana River, the dewatering activities shall take place during the period from October 1 through the end of February. This is within the season when the dominant plant species of these riparian communities are dormant. Dewatering outside of this period could subject these communities to stress, desiccation, and potential defoliation. In addition, adherence to this suggested schedule avoids the generally accepted breeding chronology for nesting by the least Bell's vireo and southwestern willow flycatcher in southern California (USFWS b, Sogge *et al.*), obviating the need for focused surveys that may be required, due to the project's potential to have significant noise impacts to these two listed migratory species. This suggested schedule also avoids the breeding season of the federally listed arroyo toad, generally regarded as mid-March through July 1 (USFWS c), thereby avoiding potential impacts to this species as well. Impacts to the arroyo toad during the breeding season would be direct, including physical damage to mature individuals and interference with breeding activities. Should it not be feasible to adhere to this schedule, additional mitigation measures are required, as specified below.	Potentially significant	Construction of Santa Ana River crossing Oct 1 – Feb 28.	WMWD and Contractor	Construction drawing specifications. WMWD site inspection.	Less than Significant
	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 U. S. Wildlife Service.	2005 Alternative Only	**MM Bio 2:** (Applicable to 2005 Project Alignment, only) Should the construction occur during the breeding season for the arroyo toad (March 15 – July 1), a protocol-level survey shall be conducted at the Santa Ana River (Reach A), to determine presence/absence. If the arroyo toad is found to be present in the vicinity of Reach A, incidental take permits (through either Section 7 or Section 10) shall be applied for. The survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.	Potentially significant	Survey conducted throughout Mar 15 – Jul 1 timeframe. (Six (6) surveys required in all.)	WMWD	Survey report. Section 7 permit, if required.	Less than Significant
	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 U. S. Wildlife Service.	All Alternatives	**MM Bio 3a:** Should construction occur during the breeding season for the least Bell's vireo (LBV) or southwestern willow flycatcher (SWWF) (March 15 through September 15), protocol-level surveys shall be conducted prior to construction at the following locations: the Santa Ana River (Reach A and Central Reach), Spring Brook wash (Reach B), the riparian vegetation along the Mockingbird Canyon alignment (Reach E),potentially suitable habitat in the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report), and the drainage located south of the Corona Landfill (Reach H); or presence can be assumed. If surveys document the presence of LBV and SWWF, impacts to LBV and SWWF would be mitigated below the level of significance when occupied riparian forest /woodland/scrub is fenced and direct impacts are avoided and construction within 500 feet of occupied habitat occurs only between September 15th and March 15th to avoid indirect impacts to nesting LBV. If avoidance is not feasible, a temporary noise barrier shall be used during construction, at the	Potentially significant	Flycatcher survey conducted May 15 – Jul 17. (Five (5) surveys required in all.) Vireo survey conducted Apr 10 – Jul 31. (Eight (8) surveys in all.)	WMWD and Contractor	Survey reports. Construction drawing specifications.	Less than Significant

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			appropriate location(s), in coordination with CDFG and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less, at the edge of breeding habitat. If surveys indicate that these species are not present, this measure will not be required. Additional or alternative measures to avoid or minimize adverse project effects to LBV and SWWF, as identified by the USFWD in Section 7 Consultation and CDFG, shall be implemented. However, if all avoidance measures cannot be implemented such that "take" of LBV and SWWF is avoided, Take Authorization from USFWS through Final Biological Opinion and Incidental Take Statement and from CDFG through issuance of a CEESA ITP or compliance with Fish and Game Code Section 2080.1, will be obtained.					
	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 U. S. Wildlife Service.	All Alternatives	**MM Bio 3b:** For the Santa Ana River (Central Reach), Spring Brook wash (Reach B), the riparian vegetation along the Mockingbird Canyon alignment (Reach E), potentially suitable habitat in the Northern Reach in Riverside County (as identified in the Glenn Lukos Associates, Inc. 2008 report), and the drainage located south of the Corona Landfill (Reach H) potential adverse effects to LBV and SWWF will be reduced to less than significant levels with WMWD participation in the MSHCP as a Participating Special Entity (PSE) and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 3a** in Riverside County is required.	Potentially significant	Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD Regional Conservation Authority (RCA)	Compliance with RCA conditions and payment of fees to RCA.	Less than Significant
	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 U. S. Wildlife Service.	All Alternatives	**MM Bio 4a:** Should construction occur during the breeding season for the coastal California gnatcatcher (March 15 through September 15), a protocol-level survey shall be conducted prior to construction at Spring Brook wash (Reach B) and the Northern Reach (within Riverside County as identified in the Glenn Lukos Associates, Inc. 2008 report), in the vicinity of the proposed project; or presence can be assumed. Focused presence/absence surveys consist of either 1) six surveys conducted no less than one week apart between March 15 and June 30 or 2) nine surveys conducted no less than two weeks apart during the remainder of the year. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit. Surveys in which the species is not detected are considered valid for one year and should be repeated within one year of work commencing. If surveys document absence of CAGN no additional avoidance or minimization measures are required. If surveys document the presence of CAGN impacts to CAGN would be mitigated below the level of significance when occupied coastal sage scrub is fenced and direct impacts are avoided and construction within 500 feet of occupied habitat occurs only between September 1 and February 15 to avoid indirect impacts to nesting CAGN. If avoidance is not feasible, a temporary noise barrier shall be used during construction, at the appropriate location(s), in coordination with CDFG and the USFWS. The	Potentially significant	Surveys can be conducted year-round. Number and duration varies by season.	WMWD and Contractor	Survey report. Section 7 permit, if required.	Less than Significant

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			noise barrier shall attenuate noise levels to 60 dBA or less at the edge of breeding habitat. Additional or alternative measures to avoid or minimize adverse project effects to CAGN, as identified by the USFWS in Section 7 Consultation, shall be implemented. However, if all avoidance measures cannot be implemented such that "take" of LBV and SWWF is avoided Take Authorization from USFWS through Final Biological Opinion and Incidental Take Statement and from CDFG through issuance of a CESA ITP will be obtained.					
	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 U. S. Wildlife Service.	All Alternatives	**MM Bio 4b:** For the Spring Brook wash crossing (Reach B) and Northern Reach of the project alignment in Riverside County potential adverse effects to CAGN will be reduced to less than significant levels with WMWD participation in the MSHCP as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 4a** in Riverside County is required.	Potentially significant	Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD Regional Conservation Authority (RCA)	Compliance with RCA conditions and payment of fees to RCA.	Less than Significant
	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 U. S. Wildlife Service.	All Alternatives	**MM Bio 5:** In addition to the use of the temporary noise barrier, a qualified on site noise monitor (approved by the local jurisdiction and WMWD) shall be present during all construction activities conducted near habitat that has been identified in the surveys to host the arroyo toad, least Bell's vireo, southwestern willow flycatcher, or coastal California gnatcatcher. The noise monitor shall ensure through on site noise meter readings that the temporary barriers are effective at reducing construction noise to 60 dBA or less. If 60 dBA is exceeded, the noise monitor shall work with the Contractor to make adjustments in the barriers or construction activities to reduce noise to 60 dBA or less.	Potentially significant	During construction	Local jurisdiction and WMWD	Survey report. Section 7 permit, if required. Construction drawing specifications	Less than Significant
	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.	All Alternatives	**MM Bio 6:** Construction staging areas shall be located outside of riparian areas and away from (to the greatest distance feasible) riparian areas.	Potentially significant	Prior to construction	WMWD and Contractor construction manager	Location of staging areas provided on construction plans for review by WMWD.	Less than Significant
	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	All Alternatives	**MM Bio 7:** Construction activities adjacent to riparian and/or wetland areas shall be minimized where feasible. If open cut trenching is used in the Spring Brook drainage crossings or Central Reach instead of boring, direct loss of wetlands may occur and permits and mitigation will be required. Such mitigation may include restoration on site, removal of invasive species, or off-site purchase. See **MM Bio 8** below.	Potentially significant	During construction	Project biologist	Survey report. Section 7 permit, if required. Construction drawing specifications.	Less than Significant

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	other means.							
	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.	All Alternatives	**MM Bio 8:** A formal jurisdictional delineation for potential State and Federal wetland impacts will be conducted at Reaches A and B or the Northern Reach.	Potentially significant	Pre-construction	WMWD and Army Corp of Engineers, CDFG	Issuance of Section 404 Permit and/or 1602 Streambed Alteration Agreement, as applicable.	Less than Significant
	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.	All Alternatives	**MM Bio 9:** A project-wide 1602 Streambed Alteration Agreement prepared in accordance with CDFG requirements shall be secured by WMWD as the jurisdictional delineation warrants and shall include mitigation measures that are sufficient to reduce direct and indirect impacts to riparian habitat to a level below significant. The Agreement may include some or all of the following: • Avoid impacts where possible by shifting the project location or construction timing; • Minimize impacts. • Remove invasive species. • Purchase off-site habitat credits. • Create and/or restore natural communities and prepare a monitoring and maintenance plan for these areas. • Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible. • Limit construction activity to daylight hours to minimize potential impacts related to artificial lighting. • Require the presence of a qualified biological monitor during all construction activities that are within or near sensitive habitats and areas that have been identified to host the arroyo toad, least Bell's vireo, southwestern willow flycatcher, coastal California gnatcatcher, Stephens' kangaroo rat or San Bernardino kangaroo rat.	Potentially significant	Pre-construction	WMWD	1602 Streambed Alteration Agreement.	Less than Significant
	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.	All Alternatives	**MM Bio 10:** An ACOE Section 404 permit shall be secured as the jurisdictional delineation warrants. The Nation-wide Section 404 Permit will apply to the project for linear utility projects. The Corps may require the implementation of measures similar to those listed for the Section 1602 Streambed Alteration Agreement as part of the Section 404 Permit approval process. Implementation of these measures will mitigate potential impacts to the bed and banks of the Santa Ana River and any other jurisdictional drainage. (Applicable to 2005 Project Alignment, only) Should open-trenching techniques be utilized to install the pipeline across the Santa Ana River, consultation with the U.S. Fish and Wildlife Service will be initiated to determine whether or not the proposed project would result in significant impacts to Critical Habitat for the Santa Ana sucker. If warranted	Potentially significant	Pre-construction	WMWD and Army Corp of Engineers	Issuance of Section 404 Permit.	Less than Significant

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			incidental take permits (through Section 7) shall be applied for. The U.S. Fish and Wildlife Service shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.					
	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.	All Alternatives	**MM Bio 11:** In conjunction with the ACOE Section 404 Permit, a Section 401 Water Quality Certification from the California Regional Water Quality Control Board shall be secured.	Potentially significant	Pre-construction	WMWD and Regional Water Quality Control Board	Issuance of Section 401 Water Quality Certification.	Less than Significant
	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.	All Alternatives	**MM Bio 12:** Any discharge into navigable waters, or "waters of the United States" shall also comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Clean Water Act. Compliance with these provisions shall result in certification from the Regional Board that verifies that the project complies with all water quality standards.	Potentially significant	During Construction and Operation	WMWD and local jurisdiction	Certification from Regional Board.	Less than Significant
			See **MM Water Qual 1** in Section 4.11, which replaces **MM Bio 13** from the 2005 PEIR**.**					
	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.	All Alternatives	**MM Bio 14:** If WMWD does not participate in the MSHCP as a PSE and should open-trenching techniques be utilized to install the pipeline across the Santa Ana River, a protocol-level survey shall be conducted at the Santa Ana River (Reach A or Central Reach), to determine presence/absence of the Santa Ana River woolly-star, slender-horned spineflower, Chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, smooth tarplant, prairie wedge grass, and /or California satintail, within suitable habitat in the construction footprint. If one or more of these plant species are found to be present in the footprint, incidental take permits (through Section 7) shall be applied for. The survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat. If WMWD does participate in the MSHCP as a PSE, a focused Narrow Endemic Plant Species Survey Area (NEPSSA) survey shall be conducted within suitable habitat in the project alignments (Central and Northern Reach and Reach H, La Sierra Pipeline, and Clay Street Connection).	Potentially significant	Surveys may be conducted at various times. Prior to Section 7 Consultation take permit Or Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD and USBR And RCA, if applicable	Survey reports. Section 7 permit, if required, or Compliance with RCA conditions and payment of fees to RCA.Construction drawing specifications.	Less than significant
	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status	Realignment Alternatives	**MM Bio 15:** In San Bernardino County focused surveys shall be conducted within potentially suitable habitat for Chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, and smooth tarplant within the central reach and for Parry's spineflower, Robinson's pepper-grass, and smooth tarplant within the Northern Reach (as identified in the Glenn Lukos	Potentially significant	Surveys during flowering season. Prior to construction of the Northern Reach where potential habitat exists.	WMWD Project biologist	Report . WMWD implements mitigation, if required.	Less than Significant

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	species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Wildlife Service.		Associates, Inc. 2008 report) by a qualified biologist during the flowering season of these species and prior to construction activities. If special status plant species are found to be present in the footprint, further measures as recommended by a qualified biologist shall to be taken to avoid or minimize adverse project effects to these species and their habitat.					
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 16a:** In San Bernardino County focused surveys shall be conducted within potentially suitable habitat for northwestern San Diego pocket mouse and Los Angeles pocket mouse in the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report) by a qualified biologist during the appropriate season of these species and prior to construction activities. If these species are found to be present in the footprint, occupied habitat shall be fenced and avoided. If occupied habitat cannot be avoided further measures as recommended by a qualified biologist and in consultation with the California Department of Fish and Game shall to be taken to avoid or minimize adverse project effects to these species and their habitat.	Potentially significant	Survey seasons vary, generally May 1 to September 15. Prior to construction of the Central and Northern Reaches where potential habitat exists.	WMWD's project biologist CDFG	Report. WMWD implements mitigation, if required.	Less than Significant
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 16b:** In Riverside County potential adverse effects to northwestern San Diego pocket mouse and Los Angeles pocket mouse in the Northern and Central Reaches (as identified in the Glenn Lukos Associates, Inc. 2008 report) will be reduced to less than significant levels with WMWD participation in the MSHCP as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 16a** within Riverside County is required.	Potentially significant	Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD Regional Conservation Authority (RCA)	Compliance with RCA conditions and payment of fees to RCA.	Less than Significant
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 17:** If WMWD does not participate in the MSHCP as a PSE a pre-construction presence/absence surveys for western burrowing owl (BUOW) shall be conducted in suitable habitat along the Northern and Central Reaches and Monroe Alternative (as identified in the Glenn Lukos Associates, Inc. 2008 report). Surveys shall be conducted within 30 days prior to disturbance and in accordance with the California Department of Fish and Game and California Burrowing Owl Consortium guidelines. Take of active nests shall be avoided. Passive exclusion (use of one way doors and collapse of burrows) will occur if owls are present outside of the nesting season. (The nesting season is February 1 through August 31). If WMWD does participate in the MSHCP as a PSE, a focused survey for burrowing owl following current survey protocol (approved by RCA) shall be conducted in suitable habitat along the Northern and Central Reaches and Monroe Alternative (as identified in the Glenn Lukos Associates, Inc. 2008 report).	Potentially significant	Within 30-days of construction Or Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD and Project biologist RCA, if applicable	Survey report. WMWD implements mitigation, if required. Compliance with RCA conditions and payment of fees to RCA, if applicable.	Less than Significant
	Have a substantial adverse effect, either directly or through habitat modifications, on any species	Preferred Alternative Only	**MM Bio 18:** To offset the loss of burrowing owl foraging and burrow habitat from construction of the Mockingbird Tank and Clay Street Pump Station, a minimum of 6.5 acres of foraging habitat per pair or unpaired resident bird, shall be acquired and	Potentially significant	Pre-construction Or Prior to impacts to	WMWD with CDFG RCA, if	Proof of acquisition. Compliance with RCA conditions and payment of fees to RCA, if	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	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. Wildlife Service.		permanently protected if WMWD does not participate in the MSHCP as a PSE. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to CDFG. The project sponsor shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to CDFG. Acquisition and protection of mitigation property shall be conducted in accordance with the CDFG Staff Report on Burrowing Owl Mitigation, October 17, 1995 and/or consultation with CDFG. If WMWD does participate in the MSHCP as a PSE, to offset the loss of occupied burrowing owl habitat conservation of habitat shall be provided in accordance with Species Accounts, Burrowing Owl Objective 5 and payment of MSHCP mitigation fees.		Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	applicable	applicable.	
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 19:** In San Bernardino County within potentially suitable habitat in the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report), presence of this species can be assumed or focused coastal California gnatcatcher (CAGN) surveys are required following United States Fish and Wildlife (USFWS) protocol. Focused presence/absence surveys consist of either 1) six surveys conducted no less than one week apart between March 15 and June 30 or 2) nine surveys conducted no less than two weeks apart during the remainder of the year. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit. Surveys in which the species is not detected are considered valid for one year and should be repeated within one year of work commencing. If surveys document absence of CAGN no additional avoidance or minimization measures are required. If surveys document the presence of California gnatcatchers (CAGN) impacts to CAGN would be mitigated below the level of significance when occupied coastal sage scrub is fenced and direct impacts are avoided and construction within 500 feet of occupied habitat occurs only between September 1 and February 15 to avoid indirect impacts to nesting CAGN. If avoidance is not feasible additional measures to avoid or minimize adverse project effects to CAGN, as identified by the USFWS in Section 7 Consultation, shall be implemented.	Potentially significant	Pre-construction in the Northern Reach	WMWD Project biologist	Report. WMWD implements mitigation, if required.	Less than Significant
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 20a:** In San Bernardino County within potentially suitable habitat for Delhi sands flower-loving fly (DSF) in the northern reach of the project alignment (as identified in the Glenn Lukos Associates, Inc. 2008 report) focused surveys shall be conducted following USFWS protocol by a qualified biologist who holds the appropriate Section 10(a)(1)(A) permit. Presence/absence surveys consist of bi-weekly surveys from August 1 to September 20 for a two-year period within areas of suitable habitat. If surveys document the presence of DSF impacts to DSF would be mitigated below the level of significance when occupied habitat is fenced and direct impacts are avoided. If avoidance is not feasible additional measures to avoid or minimize adverse project effects to DSF and their	Potentially significant	Pre-construction within the Northern Reach	WMWD USFWS Project biologist	Report. Result of Section 7 consultation.	Less than Significant

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			habitat, as identified by the USFWS in Section 7 Consultation, shall be implemented. The additional measures may include, but not be limited to, some or all of the following: • Avoid impacts where possible by shifting the project location or construction timing. • Maintain construction sites in sanitary conditions at all times. • Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible. • Place extracted, surplus, suitable Delhi sands in current DSF conservation areas/banks. • Harvest sands and provide to a habitat bank established for the DSF.					
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 20b:** For the northern reach of the project alignment in Riverside County potential adverse effects to DSF will be reduced to less than significant levels with WMWD participation in the MSHCP (including compliance with Species Accounts, Delhi Sands flower-loving fly Objective 1B) as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 20a** is required.	Potentially significant	Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD Regional Conservation Authority (RCA)	Compliance with RCA conditions and payment of fees to RCA.	Less than Significant
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 21a:** In San Bernardino County within potentially suitable habitat for the Santa Ana sucker (SAS) in the Central and Northern Reach of the project alignment (as identified in the Glenn Lukos Associates, Inc. 2008 report) focused surveys shall be conducted following USFWS protocol by a qualified biologist who holds the appropriate Section 10(a)(1)(A) permit. Focused surveys for SAS shall also include presence/absence of arroyo chub and Santa Ana speckled dace. If surveys document the presence of SAS impacts to SAS would be mitigated below the level of significance when occupied habitat is fenced and direct impacts are avoided and Best Management Practices ensure that no change in water quality will occur during or after construction. If surveys document absence of SAS, arroyo chub, and Santa Ana speckled dace no additional avoidance or minimization measures are required. If avoidance is not feasible additional measures to avoid or minimize adverse project effects to SAS and their habitat, as identified by the USFWS in Section 7 Consultation, shall be implemented. The additional measures may include, but not be limited to, some or all of the following: • Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible. • Avoid impacts where possible by shifting the project location or construction timing.	Potentially significant	Pre-construction within the Northern Reach	WMWD USFWS Project biologist	Report. Result of Section 7 consultation.	Less than Significant

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			• Construction sites should be maintained in sanitary conditions at all times. Implementation of the mitigation measures for SAS would be expected to reduce potentially significant impacts to arroyo chub and Santa Ana speckled dace below a level of significance.					
	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 U. S. Wildlife Service.	Realignment Alternatives	**MM Bio 21b:** For the Central and Northern Reaches of the project alignment in Riverside County, potential adverse effects to SAS will be reduced to less than significant levels with WMWD participation in the MSHCP as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 21a** is required.	Potentially significant	Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD Regional Conservation Authority (RCA)	Compliance with RCA conditions and payment of fees to RCA.	Less than Significant
		All Alternatives	**MM Bio 22:** The removal of potential nesting vegetation of sensitive bird species will be conducted outside of the nesting season (February 1 to August 31) to the extent that this is feasible. If vegetation must be removed during the nesting season, a qualified biologist will conduct a nesting bird survey of potentially suitable nesting vegetation prior to removal. Surveys will be conducted no more than three (3) days prior to scheduled removals. If active nests are identified, the biologist will establish buffers around the vegetation containing the active nest (500 feet for raptors and 200 feet for non raptors). The vegetation containing the active nest will not be removed, and no grading will occur within the established buffer, until a qualified biologist has determined that the nest is no longer active (i.e., the juveniles are surviving independent from the nest). If clearing is not conducted within three days of a negative survey, the nesting survey must be repeated to confirm the absence of nesting birds.	Potentially significant	Pre-construction if vegetation clearing occurs February 1 to August 31.	WMWD Project biologist	Report. WMWD implements mitigation, if required.	Less than Significant
	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 U. S. Wildlife Service.	Preferred Alternative	**MM Bio 23:** Temporary impacts from construction activities and permanent impacts from development of the Mockingbird Tank site on occupied Stephens' kangaroo rat habitat will be mitigated through payment of the Riverside County Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) Mitigation Fees.	Potentially significant	Pre-construction	WMWD	Proof of payment of SKR conservation fees or acquisition of habitat as agreed upon by USFWS.	Less than Significant
	Have a substantial adverse effect, either directly or through habitat	Preferred Alternative	**MM Bio 24:** Section 7 Consultation with USFWS or participation in the MSHCP as a Participating Special Entity (PSE) shall be completed for temporary impacts (both direct	Potentially significant	Pre-construction Or Prior to impacts to	WMWD RCA, if applicable	Proof of Section 7 consultation for gnatcatcher and acquisition of habitat as agreed upon by USFWS.	Less than Significant

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	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 U. S. Wildlife Service.		and indirect) from construction activities and permanent impacts from development of the Mockingbird Tank site on occupied California gnatcatcher habitat. Mitigation for the loss of occupied habitat will be achieved by acquisition of replacement habitat at a 1:1 ratio that is biologically equivalent to the property being disturbed, as agreed upon by USFWS or compliance with the MSHCP and payment of MSHCP mitigation fees.		Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)		Compliance with RCA conditions and payment of fees to RCA, if applicable.	
	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.	All Alternatives	**MM Bio 25:** Should jack and bore (also known as horizontal directional drilling) techniques be utilized to install the pipeline under CDFG or U.S. Army Corps of Engineers jurisdictional waterways (such as the Santa Ana River), a Frac-Out Contingency Plan (included in Appendix D – Biological Resources of the SEIR/EIS) shall be implemented by the contractor for the duration of drilling activities.	Potentially significant	Prior to construction when directional drilling is used under jurisdictional waterways. During construction if frac-out occurs.	Contractor/WMWD/ Biologist	Contractor shall provide proof to WMWD that pre-construction requirements have been met. Consult/report w/CDFG if frac-out occurs.	
Cultural Resources / Paleontology	The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section15064.5.	All Alternatives	**MM Cult 1:** (CULT-3) In order to reduce potential significant impacts to historic and non-Native American archaeological and historic resources, full-time archaeological monitoring during excavations shall be conducted in sensitive areas (e.g., near the Santa Ana River crossing, Mockingbird Canyon and La Sierra), within undeveloped areas along the project alignment, near Riverside Highland Water facility site thought to be in the vicinity of Barton Road (north of Palm Avenue), at the Gage Canal crossing in the cities of Riverside and Grand Terrace, at the Railroad crossings (AT&SF Railroad Alignment and Southern Pacific Railroad), the Riverside Canal, at Victoria Avenue and Irving Street. The extent and duration of the archaeological monitoring shall be determined by a Secretary of the Interior qualified archaeologist who is also qualified by Riverside County or the San Bernardino Archaeological Information Center (SBAIC) located at the San Bernardino County Museum, as appropriate to the location of the portion of the Project to be under construction, once the construction schedule is defined for each reach of project construction. In the event of an accidental discovery, the archaeological monitor will comply with State *CEQA Guidelines* Section 15064.5.	Potentially significant	If during construction resources are discovered.	Qualified Archaeological Monitor	On-site monitoring. Monitoring report shall be submitted to WMWD.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section15064.5.	All Alternatives	**MM Cult 1a:** (CULT-1) If non-Native American archaeological or historic resources are discovered, the local jurisdiction and land owner where the resources are found will be notified by WMWD. Depending on the nature of the resource, appropriate mitigation and monitoring will be developed by WMWD in conjunction with all affected parties and the on-site archaeologist, and may include such things as: -Documentation, removal, and curation at a local museum, federal repository or other appropriate steward agency. -Documentation and retention in place. -Further detailed archaeological studies to determine the nature and extent of the find.	Potentially significant	During Grading and/or Construction	Contractor construction manager Qualified Archaeological Monitor	On-site monitoring. Archaeological Surveys shall be submitted to WMWD, if appropriate.	Less than Significant

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			-Retention by the land owner. -Other measures agreed upon by the parties involved.					
	The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section15064.5.	All Alternatives	**MM Cult 2:** (CULT-3) In response to comments from local tribes and to be sensitive to the cultural heritage of the tribes that have claimed an interest in the project area, the archaeological monitoring program shall be executed in conjunction with the tribes. As part of the preparation of the archaeological monitoring program, the interested tribes shall ~~to~~ assist in determining which areas of the project alignment where undisturbed soils will be excavated should be considered to be~~are in~~ S~~s~~ensitive Areas~~locations~~ requiring monitoring~~where undisturbed soils will be excavated~~. For the purposes of this mitigation measure, "undisturbed soils" shall mean: soil which has never been previously excavated or disturbed for construction or other purposes, and soil that was previously excavated but for which no archaeological or Native American monitoring was performed. "Sensitive~~Such~~ A~~a~~reas" ~~will~~include, at a minimum: the Santa Ana River (San Bernardino County) ~~and~~ Springbrook Wash (Riverside County and City) crossings, ~~and~~ a natural area near Irving and Firethorn Streets (Mockingbird Canyon area) in the City of Riverside, and the La Sierra area. Prior to grading, WMWD shall enter into a Treatment and Monitoring Agreement for one paid monitor for each reach of project construction with the culturally affiliated tribe, as determined by WMWD. WMWD may seek the assistance of the Native American Heritage Commission (NAHC) in making the determination of cultural affiliation. ~~Prior to grading, WMWD shall contact the Native American Heritage Commission (NAHC) to determine the Most Likely Descendent (MLD) within any given Reach where the pipeline is to be constructed. WMWD shall enter into a pre-excavation agreement for one paid monitor with the Native American tribe identified by the NAHC as the MLD for each Reach of project construction where undisturbed native soils will be affected and sensitive resources are likely. In the event of an accidental discovery, the archaeological monitor will comply with State CEQA Guidelines section 15064.5.~~ To respond to the expressed desire of each tribe to monitor construction in sensitive areas and in the spirit of interagency cooperation, the Pechanga, Ramona, and San Manuel shall be notified by WMWD, prior to excavation activities..	Potentially significant	If during construction resources are discovered.	WMWD, archaeologist, land owner, and local jurisdiction.	Archaeologist's report on monitoring activity. Documentation of resources, if required.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section15064.5.	All Alternatives	**MM Cult 2a:** Additional tribes responded during the archaeological surveys performed for the Realignment Alternatives. To respond to the expressed desire of these additional tribes to monitor construction in sensitive areas and/or be consulted if finds are made, and in the spirit of interagency cooperation, the Morongo Band of Mission Indians, Soboba Band of Luiseno Indians and Gabrieleno/Tongva San Gabriel Band of Mission Indians shall be notified by WMWD, prior to excavation activities.	Potentially significant	Prior to Grading	WMWD	Notification of Construction in Culturally Sensitive Areas shall be submitted Native American tribes.	Less than Significant.

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	The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section15064.5.	All Alternatives	**MM Cult 3:** (CULT-1) To ensure the proper disposition of cultural resources of interest to the tribes uncovered during excavation for the installation of the RCF Project, WMWD shall seek input from the tribes to develop a Discovery P~~p~~lan for such dispersal that encompasses the tribes' desired treatment and disposition of Native American cultural resources, including human remains. After considering the tribes' input and recommendations, WMWD shall approve and finalize such a plan prior to grading. In the alternative, WMWD may choose to negotiate treatment and disposition within the Treatment Agreements entered into with the ~~MLD~~ culturally affiliated appropriate tribe for each reach of construction. WMWD shall follow either the Discovery Plan or the Treatment Agreement for resources found on WMWD lands. Further, WMWD shall agree to present the plan and encourage land owners to follow the plan if cultural resources of interest to the tribes are found on land not owned by WMWD. In all cases, the actions of WMWD in its treatment of accidentally-discovered cultural resources shall be consistent with the requirements of CEQA Guidelines section 15064.5, the provisions of the Public Resources Code, and any other applicable state or federal law.	Potentially significant	Prior to grading of the first phase of project construction.	WMWD after consultation with the tribal representatives.	Cultural Resources Disposition and Treatment Plan.	Less than Significant.
	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	All Alternatives	**MM Cult 4:** If fossils are identified during excavation, a qualified paleontologist shall be contacted and permitted to recover and evaluate the find(s) in accordance with current standards and guidelines.	Potentially significant	During Grading and/or Construction	Contractor construction manager Qualified Paleontological Monitor	Paleontological monitoring report shall be submitted to WMWD	Less than Significant
	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	All Alternatives	**MM Cult 4a:** Prior to site grading, a pre-grading meeting between a qualified paleontologist and the excavation and grading contractor shall be held to outline the procedures to be followed when buried materials of potentially significant paleontological resources have been inadvertently discovered during earth-moving operations. Should construction/development activities uncover paleontological resources, work shall be moved to other parts of the project site and a qualified paleontologist shall be contacted to determine the significance of these resources. If the find is determined to be significant, temporary avoidance or other appropriate measures shall be implemented. Appropriate measures would include that a qualified paleontologist be permitted to recover and evaluate the find(s) in accordance with current standards and guidelines. Any significant fossil remains recovered in the field shall be prepared, identified, catalogued, curated, and accessioned into the fossil collections of the San Bernardino County Museum, or another museum repository complying with the Society of Vertebrate Paleontology standard guidelines; and the qualified paleontologist or qualified designee shall prepare a final report presenting an inventory and describing the scientific significance of any fossil remains accessioned into the museum repository. The report shall comply with the Society of Vertebrate Paleontology standard guidelines for assessing and mitigating impacts on	Potentially significant	Prior to Grading	Contractor construction manager Qualified Paleontological Monitor	Paleontological monitoring report shall be submitted to WMWD and the museum repository.	Less than Significant

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			paleontological resources and shall be submitted to Western Municipal Water District and the museum repository.					
	The proposed project would disturb any human remains, including those interred outside of formal cemeteries.	All Alternatives	**MM Cult 5:** (CULT-2) If human remains are uncovered at any time, all activities in the area of the find shall be halted by WMWD or its contractor and the County Coroner shall be notified immediately pursuant to CA Health & Safety Code Section 7050.5 and CA PRC Section 5097.98. If the Coroner determines that the remains are of Native American origin, the Native American Heritage Commission (NAHC) shall be notified by the Coroner. The NAHC will determine and notify the Most Likely Descendent (MLD). The MLD shall be allowed to inspect the site of the discovery. The MLD shall complete the inspection and make recommendations for treatment within ~~24~~48 hours of notification by the NAHC.	Potentially significant	During Grading and/or Construction	Contractor construction manager Riverside County Coroner	Implementation of CA Health & Safety Code Section 7050.5 and CA PRC Section 5097.98; and if the Coroner determines that the remains are of Native American origin, Section 15064.5(e) of the CEQA guidelines.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section15064.5.	All Alternatives	**MM Cult 5a:** If a sacred site is encountered within the project alignment, WMWD will work with the tribes to avoid the site, if feasible.	Potentially significant	If during construction resources are discovered.	WMWD, archaeologist, tribal monitor, land owner, and local jurisdiction.	Archaeologist's report on monitoring activity. Documentation of resources, if required. Revision to project if feasible.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	All Alternatives	**MM Cult 6:** Plants and trees removed or damaged by the proposed project shall be replaced pursuant to the standards and requirements of each jurisdiction within which the loss or damage occurs.	Potentially significant	Encroachment permit or other approved by affected agency. Installation no later than 30 days after.	WMWD Local affected agency approving and inspecting project.	Approved plans and final site inspection.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	All Alternatives	**MM Cult 7:** The location of all existing mature trees, palms and other landscaping shall be noted on the construction drawings that will be prepared for this project to facilitate review and proper permitting by the affected jurisdiction. Generally, a mature wood tree is considered to have a diameter of 8-10 inches or more at 4 ½ feet off the ground. A palm tree is considered to be mature at 25 feet or more in height. Citrus trees are mature when commercial levels of fruit-bearing occur at about 5 to 7 years.	Potentially significant	Plan preparation	WMWD	Plan approval by WMWD.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	All Alternatives	**MM Cult 8:** If construction activities that require digging are located closer than eight feet from a mature palm (over 25 feet in height), a certified arborist shall evaluate the specific palm(s) to determine if the palm can remain in place, be relocated successfully, or if project redesign may be warranted. If the palm must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the palm(s) is/are located.	Potentially significant	Prior to construction plan completion and as early in the design process as possible.	WMWD	Arborist to present WMWD with findings report to be incorporated into project design and landscape plans.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	All Alternatives	**MM Cult 9:** If construction activities that require digging are located closer than thirty feet from the drip line of a mature wood tree, a certified arborist shall evaluate the specific tree(s). The arborist will recommend the course of action most likely to preserve the tree including but not limited to trimming to help with stability, no action and the tree remains in place as is, project redesign, or the means to achieve a successful	Potentially significant	Prior to construction plan completion and as early in the design process as possible.	WMWD	Arborist to present WMWD with findings report to be incorporated into project design and landscape plans.	Less than Significant

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			relocation. If the tree must be removed, replacement shall be commensurate with the size and age of the tree being removed, pursuant to the requirements of the jurisdiction within which the tree(s) is/are located, and in no case shall replacement trees be less than 24-inch box size trees.					
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	Realignment Alternative (Monroe Route Only)	**MM Cult 10:** In order to reduce impacts to historical resources along the Monroe Alternative route, jack-and-bore tunneling or a similar technique that does not impact a surface feature shall be used instead of traditional trenching techniques. This would protect impacts to features such as the Riverside Upper Canal (CA-RIV-4495H), Riverside Lower Canal (CA-RIV-4791H), RCF-6, and RCF-7.	Potentially significant	During Grading and/or Construction	Contractor construction manager	Construction plans and specifications reviewed by WMWD.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	Preferred Alternatives Only	**MM Cult 11:** In order to reduce impacts to historical resources associated with the Realignment Alternative with Additional Connections, new wells constructed as part of the Central Feeder Connection, shall be not be placed within the footprint of the historic house foundation site located on the southwest corner of the intersection of Nevada Street and San Bernardino Avenue or within the footprint of the Old Crown Jewel packinghouse site (Packing House Christian Academy) located on the southwest corner of the intersection of Alabama Street and San Bernardino Avenue.	Potentially significant	Prior to construction plan review.	WMWD and project archaeologist	Approval of construction documents.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	Realignment Alternative (Monroe Route Only)	**MM Cult 12:** (Applies to the Monroe Street alignment, only.) Prior to construction and if the Monroe Street Alternative route is for the Central Reach is selected, P-33-17542 and P-22-17543 must be evaluated for NRHP or CRHR eligibility and the appropriate mitigation measures developed and implemented, if needed. Mitigation measures could include such things as: -avoidance, -modified construction techniques, or -documentation and removal.	Potentially significant	Pre-Construction	WMWD and project archaeologist	Survey and modified construction plans, if required.	Less than Significant
	The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.	All Alternatives	**MM Cult 13:** If the local jurisdiction where mature trees and landscaping are being removed does not have standards or tree replacement requirements, WMWD shall install 15 gallon trees or larger at a 1:1 replacement ratio and other landscaping similar to what was removed or damaged.	Potentially significant	Encroachment permit or other approved by affected agency. Installation no later than 30 days after.	WMWD Local affected agency approving and inspecting project.	Approved plans and final site inspection.	Less than Significant
Energy		Preferred Alternative Only	**MM Energy 1:** Hydroelectric generating stations shall be constructed as part of the Mockingbird and Clay Street Connections pump station facilities.	Less than significant	Prior to plan approval	WMWD and Project Engineer	Review by WMWD to see that included on plans, if feasible.	Less than Significant
Groundwater Levels	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there is a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells	All Alternatives	**MM GWL 2 (Revised):** To assure that ongoing management of the RCF is coordinated with management of the Basin Area as a whole, monitoring and adaptive management shall be employed. The RCF operations management plan will be developed and tested using the groundwater modeling employed by the Basin Area TAC (or its successor or assignee) on a annual basis. The groundwater flow and groundwater model(s) shall be used to predict the effects of project operations on the safe yield of the Basin Area. If the model(s)	Potentially significant	On-going	WMWD	Annual report to the TAC for the San Bernardino Groundwater Basin.	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	drops to a level which does not support existing land uses or planned uses for which permits have been granted) or (2) causes undesirably high groundwater levels in the area of historically high groundwater (AHHG).		suggest that the replenishment and pumping regime of the proposed project operation would result in a water level reduction of greater than 10 feet, the project operation shall be modified to reduce impacts to less than significant levels.					
Groundwater Levels	_____	All Alternatives	**MM GWL 3:** WMWD and the City of Riverside, within one year of certification of the EIR by the WMWD Board of Directors, shall enter into a Engineering and Operation Agreement that will facilitate annual review of volumes of water to be recharged, stored and/or extracted from the San Bernardino Basin Area (SBBA) by WMWD in as part of the Project to ensure consistency with the conjunctive use rules developed by the SBBA Basin Technical Advisory Committee, or govern conjunctive use operations in the absence of BTAC-developed rules. The Engineering and Operation Agreement shall develop and implement procedures intended to minimize groundwater level impacts at certain specified Riverside wells and determine water storage and extraction targets for the Project. To accomplish those purposes, the Engineering and Operation Agreement shall address the following areas: • Proposed water extractions of previously stored water and the consequent changes in groundwater levels at key wells; • The length of time that water will be stored within the SBBA before WMWD extracts the water; and • Methodology for accounting of water loss of water stored by WMWD in the basin, including but not limited to the determination of when water is no longer stored within the SBBA because of outflow from that basin, a loss corresponding to the amount of water lost to evaporation if recharge occurs in a spreading basin, and annual loss corresponding to the amount of water that flows out of the SBBA on the surface and below the surface (outflow). • Remedy if WMWD extracts water in excess of the agreed-upon limits set forth in the Engineering and Operation Agreement or in excess of what is stored in the SBBA.	_____	On-going	WMWD	Engineering and Operation Agreement.	_____
Groundwater Quality	Impacts to groundwater quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality in the Basin as a	All Alternatives	**MM GWQ 2 (Revised):** To assure that ongoing management of the RCF is coordinated with management of the Basin Area as a whole, monitoring and adaptive management shall be employed. a) The RCF operations management plan will be developed and tested using the groundwater modeling employed by the Basin Area TAC (or its successor or assignee) on an annual basis. Existing groundwater flow and groundwater	Potentially significant	On-going	WMWD	Annual report to the TAC for the San Bernardino Groundwater Basin.	Less than Significant

<table>
<tr><th>IMPACT CATEGORY</th><th>IMPACT/THRESHOLD</th><th>APPLICABLE ALTERNATIVE</th><th>MITIGATION MEASURE</th><th>LEVEL OF IMPACT</th><th>IMPLEMENTATION TIMING</th><th>RESPONSIBLE PARTY</th><th>MONITORING/ REPORTING METHOD</th><th>IMPACT AFTER MITIGATION</th></tr>
<tr><td></td><td>whole or for any individual pumper.</td><td></td><td>quality model(s) shall be used to predict the effects of project operations on groundwater quality. The results of the modeling shall be presented to the BTAC. If the results indicate that the location of pollution plumes will be shifted by project operations such that additional existing ‘clean’ wells could become contaminated, WMWD shall modify planned operations to avoid the result or otherwise address the modeled situation to the satisfaction of the BTAC. Examples of operational modifications that could be used, are provided in the following table.
b) When a new well is drilled, indicator wells in the vicinity that could be affected by Project operation will be selected to become part of the annual operations management plan. If water quality testing at any indicator wells (which are already tested regularly) suggests that the replenishment and pumping regime of the proposed project operation is causing drinking water quality in a given well to become newly contaminated or to worsen due to the RCF Project, ~~exceed state drinking water standards~~, production and/or spreading in the area(s) contributing to the contamination shall cease until a remedy is identified and implemented. ~~adverse affects associated with the project no longer occur.~~ Such remedies may include but not be limited to the following:</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td>Contamination Remedy Examples and Method Priorities
<table>
<tr><th colspan="3">New Wells Drilled for Project Operations</th></tr>
<tr><td>Treatment Option</td><td>First Priority Methods</td><td>Secondary Priority Methods</td></tr>
<tr><td>Avoidance</td><td>• Move or Avoid Production in a Contaminated Location</td><td>• Wellhead treatment</td></tr>
<tr><td>Wellhead Treatment[1]</td><td>• Chlorination or ozonation for disinfecting (required for all wells)
• Ion Exchange for nitrates and other contaminants
• Activated Carbon</td><td>• Reverse osmosis</td></tr>
<tr><td>Blending</td><td>• If multiple wells in proximity have varying levels of constituents, blending could occur to dilute contaminants to legal levels prior to distribution</td><td></td></tr>
<tr><th colspan="3">Existing Wells at Risk of Contamination by Project Operations</th></tr>
<tr><td>Treatment Option</td><td>First Priority Method</td><td>Secondary Priority Method</td></tr>
<tr><td>Careful Management</td><td>• Participate in ongoing conjunctive use management of the Basin so Project is a benefit to Basin health for a safe drinking water supply and for the ecological health of the watershed</td><td>• choose alternative production and/or spreading location(s)
• produce or spread at a different time of year</td></tr>
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		• install barrier wells
Blending	• If multiple wells in proximity have varying levels of constituents, blending could occur to dilute contaminants to legal levels prior to distribution	
Alternative use of contaminated water	• Could be effective in areas where non-potable system or other non-potable use exists if affected well operator is provided with drinking water quality replacement water from another source	

[1] Other than disinfecting, all other treatment approaches are dependent on the contaminants that need to be removed.

~~*Appropriate Use*. Contaminated water could be utilized for purposes that would allow or require lower water quality standards.~~

- ~~*Blend*. Water that has poor quality can be blended and diluted until water quality standards are achieved.~~
- ~~*Move (Avoid)*. Choose another production and/or spreading area.~~
- ~~*Careful Management*. Operate wells in a manner that will prevent or delay contamination. This may include installation of barrier wells or avoidance of strategies that would result in acceleration of the movement of contaminated water towards existing wells.~~
- ~~*Wellhead Treatment*. Wellhead treatment can be utilized to bring water to acceptable water quality levels.~~

Hazards and Hazardous Waste / Materials	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 1:** Avoid sites and alternative alignments on or near environmentally contaminated property. If avoiding a particular site compromises physical engineering requirements, then the following mitigation measures shall be implemented to reduce environmental effects related to hazards as a result of the project to a level below significance.	Potentially significant	Prior to project design	WMWD and Project Engineer	Report of current hazardous sites list provided to WMWD by project engineer.	Less than Significant
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 2:** Check potential sites for listing on the most recent Hazardous Waste and Substances List (List) provided by the San Bernardino County Division of Hazardous Materials and by the Riverside County Department of Environmental Health pursuant to Section 65962.5 of the Government Code. If a selected site is on the List, avoidance of that property will be the first consideration.	Potentially significant	Prior to project design	WMWD and Project Engineer	Report of current hazardous sites list provided to WMWD by project engineer.	Less than Significant
	Impacts to hazards and	All Alternatives	**MM Haz 3:** (HAZ-4) If the selected future alignment traverses	Potentially	Prior to project design.	WMWD and	Phase I ESA report.	Less than

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	hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.		a site listed on the List and avoidance is not feasible or if there are other indications that a site could be contaminated (i.e., where pipeline alignment crosses railroad rights-of-way), a Phase 1 Environmental Site Assessment (ESA) will be prepared.	significant		Project Engineer		Significant
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 4:** If the Phase 1 ESA identifies possible contamination on the pipeline alignment, then recommended subsurface investigation measures listed in the Phase I ESA will be implemented. Based on subsurface investigations characterizing subsurface contamination, remediation measures shall be implemented for the applicable site or an alternative alignment will be chosen.	Potentially significant	After Phase I ESA complete and prior to project design.	WMWD and Project Engineer	Project plans for WMWD review and approval.	Less than Significant
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 5:** All environmental investigation and/or remediation shall be conducted under a Work plan approved by jurisdictional regulatory agencies overseeing hazardous waste cleanups. For the cities of Corona and Riverside, the local agencies are City of Corona Fire Department and City of Riverside Fire Department. For the Cities of San Bernardino, Colton and Grand Terrace, the enforcement agency is the County of San Bernardino Fire Department, Hazardous Materials Division. In the unincorporated Riverside County, the Department of Environmental Health administers a program for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated, or recycled, and to regulate by the issuance of permits, the activities of establishments where hazardous waste is generated. For any jurisdiction that may not be or have access to a responsible party for this purpose, the California Department of Toxic Substances Control shall be used to provide oversight.	Potentially significant	After Phase I ESA if avoidance is not possible.	WMWD and appropriate agency listed in MM Haz 5	Approved. Work plan.	Less than significant.
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result,	All Alternative	**MM Haz 5a:** All environmental investigation and/or remediation shall be conducted under a Work plan approved by jurisdictional regulatory agencies overseeing hazardous waste cleanups. For the City of Redlands, the local agency is City of Redlands Fire Department. For the City of Rialto and County of San Bernardino, the enforcement agency is the County of San Bernardino fire Department, Hazardous Materials Division. For any jurisdiction that may not be or have access to a responsible party for this purpose, the California Department of Toxic Substances Control shall be used to provide oversight.	Potentially significant	After Phase I ESA if avoidance is not possible.	WMWD and appropriate agency listed in MM Haz 5	Approved. Work plan.	Less than Significant

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	would it create a significant hazard to the public or the environment.							
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 6:** Prior to any excavation or soil removal action on known contaminated sites, or if contaminated soil (i.e., soil with a visible sheen or detectable odor) is encountered, complete characterization of the soil will be conducted. Appropriate sampling shall be conducted prior to disposal of the excavated soil. If the soil is contaminated, it shall be properly disposed of it according to Land Disposal restrictions. If site remediation involves the removal of contamination, then contaminated material will need to be transported off-site to a licensed hazardous waste disposal facility. This may incrementally decrease the volume available at a hazardous waste disposal site or incrementally increase the emissions of a hazardous waste incinerator. These impacts are not considered significant. If the proposed project plans on importing soils to backfill the areas excavated, proper sampling shall be conducted to make sure that the imported soil is free of contamination.	Potentially significant	Prior to excavation if contaminated soil known or encountered.	Contractor and appropriate agency listed in MM Haz 5	Construction drawing specifications or work plan.	Less than Significant
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 7:** If during construction of the project, soil and/or groundwater contamination is suspected, construction in the area shall cease and appropriate Health and Safety measures shall be implemented. The project proponent shall contact the respective jurisdictional enforcement agency (see **MM Haz 5**) to obtain the necessary information on appropriate measures and their implementation.	Potentially significant	During construction, after Phase I ESA if avoidance is not possible.	WMWD and appropriate agency listed in MM Haz 5	Approved. Work plan.	Less than Significant
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	All Alternatives	**MM Haz 8:** If the selected future alignment traverses a site listed on the List and avoidance is not feasible or if there are other indications that a site could be contaminated (i.e., where pipeline alignment crosses railroad rights-of-way), an electronic "sniffer" capable of detecting actionable levels of hydrocarbons shall be employed during excavation activities in proximity to the previously referenced sites in lieu of preparing a Phase 1 Environmental Site Assessment (ESA) as required in **MM Haz 3**. Should actionable levels of contaminants be encountered, these materials shall be removed and disposed of in accordance with applicable regulations or pursuant to **MM Haz 4** through **MM Haz 7.**	Potentially significant	During construction.	Contractor	WMWD review of construction specifications to include "sniffer" at key locations.	Less than Significant
	Impacts to hazards and hazardous materials may be considered potentially significant if the project would be located on a site which is included on a list of hazardous materials sites	All Alternatives	**MM Haz 9:** (HAZ-1, 2 and 3) To reduce potentially hazardous conditions and minimize the impacts from the handling of potentially hazardous materials, the following shall be included in WMWD construction specifications for all construction projects covered by this SEIR/EIS: The contractor(s) shall enforce strict on-site handling rules to keep construction and maintenance materials out of receiving	Potentially significant	Plans prior to construction. Implemented during construction.	WMWD and Contractor	WMWD review of construction specifications, contractor to implement in the field.	Less than Significant

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	compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.		waters and storm drains. In addition, the contractor(s) shall store all reserve fuel supplies only within the confines of a designated construction staging area, and regularly inspect all construction equipment for leaks. The contractor(s) shall prepare a *Health and Safety Plan.* The plan shall include measures to be taken in the event of an accidental spill. The construction staging area(s) shall be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain towards receiving waters or storm drain inlets.					
	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, the project would result in a safety hazard for people residing or working in the project area.	Realignment Alternatives	**MM Haz 10:** A minimum of 45 days prior to commencement of the Central Reach construction projects and a minimum of 45 days prior to commencement of the Clay Street Connection construction projects, the manager of the Riverside Municipal Airport shall be consulted in order to determine whether construction activities and construction equipment will encroach into the 100-to-1 imaginary surface surrounding the Riverside Municipal Airport. If it is determined that there will be an encroachment into the 100-to-1 imaginary surface, a minimum of 30 days before the date of the proposed construction, Western Municipal Water District shall file a FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, for the construction activity. If FAA determines that the project would potentially be an obstruction unless reduced to a specified height, WMWD will work with FAA to resolve any adverse effects on aeronautical operations. <u>These could include things as, but not limited to:</u> • <u>The use of construction equipment that is short enough to avoid encroachment into the imaginary surface;</u> • <u>Alternative construction methods to avoid the use of cranes or other tall equipment; or</u> • <u>Construction at night when the airport is closed.</u>	Potentially significant.	Minimum 45-days prior to construction of Central Reach and Clay Street Connection.	WMWD and Riverside Municipal Airport FAA	FAA certification of Form 7460-1, if applicable.	Less than Significant
	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, the project would result in a safety hazard for people residing or working in the project area.	Realignment Alternatives	<u>**MM Haz 11:** To avoid potential impacts resulting from temporary flight hazards within the Flabob Airport Influence Area, no construction equipment shall exceed 70 feet in height within the Northern Reach where it is located in Avalon Street south of the 60 Freeway, Mission Boulevard and Limonite Street.</u>	Potentially significant.	During construction	Contractor	Construction equipment list provided to WMWD.	
Noise	Impacts to and from noise may be considered potentially significant if the project would result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	All Alternatives	**MM Noise 1:** Based on the Acoustical Impact Analysis which shows that the 65 dBA Leq is slightly less than one-quarter mile from the pipeline alignment, a minimum of 30 days prior to commencement of construction projects for all reaches and facilities, Western Municipal Water District shall identify all noise-sensitive receptors (e.g., residential dwellings, hotels, hospitals, nursing homes, schools and libraries) located within one-quarter mile of the active construction area. If construction is planned to occur within one-quarter mile of a sensitive receptor, the hours of construction shall be limited to those that	Potentially significant	Minimum 30-days prior to construction	WMWD or contractor	Proof of noticing to local jurisdiction within which project is located, may be a part of Traffic Control Plan, if appropriate.	Less than Significant

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			would cause the least noise disruption to the sensitive uses and in consultation with the local jurisdiction. Mitigation could include such approaches as: -Allowing nighttime construction in commercial/industrial areas or adjacent to schools which operate only during the day -Prohibiting nighttime construction in residential areas -Time of year construction, such as during a school holiday week -If more than one sensitive receptor that might warrant opposite approaches to hours of operation is affected by the same construction location, the hours of construction allowed by local jurisdictions regulations shall apply. **MM Noise 1a:** For portions of the Project to be constructed within the city of Riverside, the need for traffic detours has been identified as a possibility for some locations. If it is determined, once a detailed project alignment is finalized with the City for each segment of construction pursuant to **MM Trans 3b**, that there is no other option but to detour a significant amount of traffic to a street along which sensitive receptors are located, additional noise impacts analysis shall be completed to identify site-specific mitigation measures that are appropriate to the location in question. Some such potential mitigation approaches are outlined in MM Noise 1; the mitigation determined feasible shall be included in the Traffic Control Plan which has to be approved by the City prior to its issuance of the Encroachment Permit.		Prior to the issuance of an Encroachment Permit	WMWD	Traffic Control Plan	
	Impacts to and from noise may be considered potentially significant if the project would result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Preferred Alternative Only	**MM Noise 2:** Although blasting does not exceed any noise standards because its duration is so short, as a courtesy to adjacent residents, Western Municipal Water District or its designee shall notify residences within one-quarter (1/4) of a mile of any areas that will require blasting, as to the timing and duration of any potential blasting activities associated with the project site. Notification shall take place between a minimum of five (5) and a maximum of ten (10) working days prior to anticipated blasting activities.	Less than significant	Between 5 and 10 working days prior to blasting	WMWD or contractor	WMWD review construction specifications for requirement. Provide proof of noticing to local jurisdiction within which blasting is required.	Less than Significant
	Impacts to and from noise may be considered potentially significant if the project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	All Alternatives	**MM Noise 3:** (NOISE-2) All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engines shall be fitted with well maintained mufflers in accordance with manufactures' recommendations. Maintenance and equipment records shall be made available by WMWD upon request if local jurisdictions receive complaints. If records indicate that equipment does not meet the requirements of this measure, the equipment in question shall be services, retrofitted or replaced.	Potentially significant	During construction	WMWD and Contractor	Maintenance and equipment records shall be made available by WMWD upon request if local jurisdictions receive complaints.	Less than Significant
	Impacts to and from noise may be considered potentially significant if the project would result in the exposure of persons to or generation of	All Alternatives	**MM Noise 4:** (NOISE-3) The buildings housing pump stations shall be insulated and contain sound attenuation materials to meet local noise standards.	Potentially significant	Prior to building plan review	WMWD	Approval of building plans by WMWD.	Less than Significant

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	noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.							
Stormwater / Water Quality	Impacts to surface water quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality.	All Alternatives	**MM Water Qual 1:** (HYD-1) WMWD shall require contractors to implement a program of best management practices (BMPs) and best available technologies to reduce potential impacts to water quality that may result from construction activities. To reduce or eliminate construction-related water quality impacts before the onset of construction activities, the construction agent(s) shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General construction permit. Construction activities shall comply with the conditions of this permit that include preparation of a stormwater pollution prevention plan (SWPPP), implementation of BMPs, and monitoring to insure impacts to water quality are minimized. As part of this process, multiple BMPs shall be implemented to provide effective erosion and sediment control. These BMPs shall be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure shall include, but are not limited to, the following: a. Temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other groundcover would be employed for disturbed areas to avoid water erosion. Stockpiled dirt could be covered, misted continuously, protected with three-sided temporary wind breaks or other means to avoid wind erosion. b. Storm drain inlets on the site and in downstream offsite areas shall be protected from sediment with the use of BMP's acceptable to the construction agent(s), local jurisdictions and the California Regional Water Quality Control Board, Santa Ana Region. c. Dirt and debris shall be swept from paved streets in the construction zone on a regular basis, particularly before predicted rainfall events. d. No disturbed surfaces shall be left without wind and water erosion control measures in place between October 15 and April 15, and when the winds exceed 25 MPH. The construction agent(s) shall file a Notice of Intent with the Regional Board and require the preparation of a SWPPP prior to commencement of construction. The construction agent(s) shall routinely inspect the construction site to verify that the BMP's specified in the SWPPP are properly installed and maintained. The construction agent shall immediately notify the contractor if there were a noncompliance issue and require immediate compliance. e. Controls on construction site dewatering shall be implemented. If possible, water generated as part of	Potentially significant	Prior to construction	Contractor	Proof of NPDES Permit provided to WMWD	Less than Significant

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			construction dewatering shall be discharged onsite such that there would be no discharge to surface waters. If discharge to surface waters were unavoidable, the construction agent shall obtain coverage under the NPDES General Dewatering Permit prior to commencement of construction. The provisions of this permit are sufficiently protective of water quality to ensure that impacts to surface waters would remain below significance thresholds. During dewatering activities, all permit conditions shall be followed. The construction agent(s) shall routinely inspect the construction site to verify that the BMP's specified in the SWPPP are properly installed and maintained. The construction agent shall immediately notify the contractor if there were a noncompliance issue and require immediate compliance.					
Transportation and Traffic	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or programs supporting alternative transportation.	All Alternatives	**MM Trans 1:** Bus stops and signs-temporarily removed or closed by the proposed project shall be replaced and posted pursuant to the standards and requirements of the affected transit agency.	Potentially significant	Prior to implementation of the Traffic Control and Safety Plan (MM Trans 2).	WMWD	Transit agency review and concurrence with Traffic Control and Safety Plan.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or programs supporting alternative transportation.	All Alternative	**MM Trans 1a:** WMWD shall coordinate the potential temporary closure of bus stops with the affected public transit agency (RTA and/or Omnitrans) to set up and comply with a collection and storage procedure that safeguards any bus stop furniture, such as bus shelters, passenger waiting benches, trash receptacles and bus stop signage, that must be removed prior to commencement of individual construction projects.	Potentially significant	Prior to completion of Traffic Control Plan	WMWD and transit agency	Traffic Control Plan provided to local transit agency.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	All Alternatives	**MM Trans 2:** (See also MM Trans 2a)A Traffic Control and Safety Plan shall be prepared for each reach of construction. WMWD shall coordinate with affected transit agencies, schools, fire stations, and other affected local jurisdictions on the preparation of each Traffic Control and Safety Plan. Traffic Control and Safety Plans may include such things as adjusted hours of construction in certain locations, signs, flagmen, adequate notice of construction schedules, and cones or barriers to detour traffic. The Traffic Control and Safety Plan for each Reach shall be completed and notice/information given to affected sensitive sites at least 30-days prior to the anticipated disruption to be caused by construction.	Potentially significant	Plan to be prepared and reviewed by affected agencies at the time of construction drawing review. Notice to affected properties 30 days prior to construction.	WMWD	Approved Traffic Control and Safety Plan.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	All Alternative	**MM Trans 2a:** (TRAF-1 through TRAF 3 and TRAF-6): Based on the Traffic Impact Study Report and Traffic Impact Study Report Addendum prepared for the project, it is concluded that the traffic impacts generated from the installation of the pipeline will require implementation of mitigation which may include non-peak hour construction (AM peak hours are 7:00 a.m. to 9:00 a.m., PM peak hours are 4:00 p.m. to 6:00 p.m.), temporary lane closures, temporary lane shifts using channelizing devices, temporary signal phasing modifications, and detours to divert traffic through nearby streets. A Traffic Control and Safety Plan shall be prepared for each reach of project construction. To maintain traffic flow and	Potentially significant	Prior to construction	WMWD	Traffic Control Plan with relevant issues addressed, provided to all affected parties.	Less than significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
			reduce air quality impacts, Traffic Control and Safety Plans shall implement recommendations on pages 1-3 through 1-12 of the Traffic Study and 1-3 through 1-6 of the Traffic Study Addendum, and shall ensure that all vehicular/pedestrian/bike connections are maintained throughout the construction period and may include, but not be limited to, such things as: • identification of all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow; • circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone; • procedures to limit lane closures during peak hours to the extent possible; • haul routes that would minimize truck traffic on local roadways to the extent possible; • detours for bicycles and pedestrians in all areas potentially affected by project construction; • procedures ensuring that open trenches subject to vehicular or pedestrian traffic would be covered at the end of each workday with metal plates capable of accommodating traffic; • the installation of traffic control devices as specified in the California Manual on Uniform Traffic Control Devices; • the installation of safety fencing, where needed, to protect pedestrians from construction areas; • applicable railroad safety and engineering guidelines that would be adhered to when installing pipeline within a railroad right-of-way, and by which all construction crews and project personnel would be trained on applicable railroad safety guidelines prior to commencing work within the railroad right-of-way; • procedures by which construction vehicles and equipment would not cross the tracks except at established public crossings or as specified by the applicable railroad company; • developed access plans to be implemented for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. The access plans would be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions shall be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator shall be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures; • procedures to store construction materials only in designated areas; • coordination with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary;					

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
			~~and~~ • plans to restore all roads disturbed during project construction to their preconstruction condition, pursuant to franchise agreements with an applicable jurisdiction;~~.~~ • provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site; and • reroute construction trucks away from sensitive receptor areas.					
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	All Alternatives	**MM Trans 3:** Prior to the commencement of each individual construction project, WMWD and its contractor shall consult with the affected local jurisdiction(s) in order to coordinate project construction with applicable Capital Improvement Projects, underground facilities and/or other known potential items needing to be taken into account during final design, plan specifications and/or construction so that issues can be avoided and/or remedies included in the specifications that meet with each jurisdiction's requirements. **MM Trans 3a:** Project specifications for the portion of the Project construction that includes the intersection of Van Buren Boulevard and Arlington Avenue within the city of Riverside shall ensure the red light enforcement system is not impacted so that it remains operational. In addition, if the contractor anticipates impacts to the red light enforcement system anywhere within the city of Riverside, WMWD and its contractor shall consult with the City of Riverside Public Works Department, provide plans and proposed specifications including construction timing and duration, construction techniques to clearly identify potential impacts and to show that specifications ensure that such red light enforcement shutdowns are minimized during pipe installation. **MM Trans 3b:** For portions of the Project to be constructed within the city of Riverside, prior to the commencement of each individual construction project (i.e. portion of the whole Project), WMWD and its engineer shall consult with the Riverside Public Works Department and Planning Department regarding the detailed intended alignment. The intended alignment will be designed to minimize impacts to local business access to the greatest extent feasible. The Alignment Study will be adjusted/completed with City comments in mind and provided to City for review. To assure that all detailed issues associated with the detailed alignment are being addressed, 50% plans shall be provided to the City for review and comment. Issuance of the Encroachment Permit will constitute the City's approval of plans, specifications, Traffic Control Plans and any other items required for approval of such.	Potentially significant	Prior to construction Prior to construction Prior to construction	WMWD and local jurisdiction WMWD, Contractor, and City of Riverside Public Works Department WMWD, Contractor, and City of Riverside Public Works and Planning Departments	Traffic Control Plan with relevant issues addressed, provided to all affected parties. Construction Plans and Specifications Alignment Study and City of Riverside Encroachment Permit	Less than Significant
	Impacts to transportation and	All Alternatives	**MM Trans 4:** WMWD shall restrict all necessary lane closures	Potentially	Prior to construction in	WMWD and	Traffic Control Plan with relevant	Less than

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.		or obstructions along the Reach on major roadways to off-peak periods in urbanized areas to mitigate traffic congestion and delays which would be caused by lane closures during construction and by exploratory excavations. Lane closures must not occur between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m., or as directed in writing by the affected public agency. Alternatively, WMWD shall consider nighttime construction in areas where no residences are located within 500 feet, and where traffic impacts could be reduced by avoidance of daytime construction. WMWD shall have a Traffic Management Plan prepared by a registered Traffic Engineer for the Northern Reach, describing which traffic lanes would require closure based on the pipeline location within each street, and where night construction is proposed. This plan shall be approved by each affected local jurisdiction prior to construction and implementation by WMWD.	significant	the Northern Reach	local jurisdiction	issues addressed, provided to all affected parties.	Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	All Alternatives	**MM Trans 5:** Prior to finalizing plans for individual construction projects, WMWD shall identify all land uses along the right-of-way where project construction may adversely affect vehicular access to driveways. Where practicable, WMWD shall install the pipeline in a street location or in a manner which minimizes access problems WMWD shall also develop construction scheduling in a manner that minimizes impacts to businesses or residential areas, scheduling construction to avoid the hours or days of the week during which businesses receive the most customers, and avoiding peak traffic times adjacent to residential areas.	Potentially significant	Prior to construction	WMWD and local jurisdiction	Traffic Control Plan with relevant issues addressed, provided to all affected parties.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	All Alternatives	**MM Trans 6:** WMWD shall give written notification to all landowners, tenants, business operators, and residents along the right-of-way of the construction schedule, and shall explain location and duration of the pipeline and construction activities within each street (e.g., which lane/s will be blocked, at what times of day, and on what dates). WMWD shall identify any potential obstructions to driveway access, and if necessary shall make alternative access provisions. The written notification shall include a toll-free telephone number for business coordination and shall encourage affected parties to discuss their concerns with WMWD prior to the start of construction so individual problems and solutions can be identified. Alternative access provisions shall include WMWD-provided signage and alternate parking as provided and approved by local agencies.	Potentially significant	Prior to construction	WMWD and contractor	Traffic Control Plan and construction project schedule.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	All Alternatives	**MM Trans 7:** WMWD shall submit the location of proposed staging area(s) to appropriate local jurisdictions for review and approval. WMWD shall state the size of the area, the purpose (e.g., storage of construction equipment and employee parking), the number of vehicles and pieces of equipments to be stored, and the duration (in number of days and number of hours per day) that each staging area will be used. Such areas shall be configured to minimize traffic interference.	Potentially significant	Prior to construction	WMWD and local jurisdiction	Traffic Control Plan and/or construction documents with relevant issues addressed, provided to all affected parties.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the	All Alternatives	**MM Trans 8**: WMWD shall provide a shuttle bus service for construction workers from convenient off-street parking areas to the work sites to minimize traffic volumes and parking	Potentially significant	Prior to construction	WMWD and local jurisdiction	Traffic Control Plan with relevant issues addressed, provided to all affected parties.	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.		demand at the work sites. Sufficient off-street parking shall be provided at the bus service staging areas so that adjacent or nearby parking facilities are not adversely affected. Multiple staging areas shall be utilized, if necessary, to reduce traffic impacts on the roadways serving the staging areas. A plan for use of shuttle buses and parking areas shall be submitted to the affected local jurisdictions for review and written approval.					
	Impacts to transportation and traffic may be considered potentially significant of the project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	Preferred Alternative Only	**MM Trans 9**: Based on the Traffic Impact Study Report Addendum prepared for the project, it is concluded that the traffic impacts generated from the installation of the pipeline at the Mockingbird Connection underneath Van Buren Boulevard shall utilize a jack and bore method of construction so that construction will not impact traffic. Construction shall be handled so as to continue to allow access to local residents.	Potentially significant	During Grading and/or Construction	Contractor construction manager	Construction plans and specifications reviewed by WMWD.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or programs supporting alternative transportation.	All Alternatives	**MM Trans 10**: WMWD shall coordinate in advance with public transit agencies (RTA and Omnitrans) to avoid disruption to transit operations. Public transit agencies which operate bus routes on the roadways potentially affected by the proposed construction activities shall be informed in advance of the pipeline project and the potential impacts at the bus stop locations. Alternative pick-up/drop off locations shall be determined and signed appropriately. WMWD shall document coordination with transit agencies and provide documentation to the public agencies prior to the start of construction.	Potentially significant	Prior to implementation of the Traffic Control and Safety Plan (MM Trans 2).	WMWD	Transit agency review and concurrence with Traffic Control and Safety Plan.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or programs supporting alternative transportation.	All Alternatives	**MM Trans 11:** WMWD shall provide alternative pedestrian/bicycle access routes and trails to avoid obstruction to pedestrian/bicycle circulation. Where existing pedestrian circulation routes or bike trials would be obstructed by pipeline construction, alternative access routes shall be identified in consultation with the local jurisdiction and signed/marked appropriately.	Potentially significant	Prior to implementation of the Traffic Control and Safety Plan (MM Trans 2).	WMWD and local jurisdiction	Traffic Control and Safety Plan.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or programs supporting alternative transportation.	All Alternatives	**MM Trans 12** (TRAF-7): WMWD shall restore any impacted public street, sidewalks, bikeways and trails to their pre-construction condition, following completion of each individual construction project as mutually agreed between WMWD and the local jurisdiction prior to construction.	Potentially significant	Encroachment permit or other approved by affected agency. Installation no later than 30 days after.	WMWD Local affected agency approving and inspecting project.	Approved plans and final site inspection.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or programs supporting alternative transportation.	All Alternatives	**MM Trans 13** (TRAF-4): Encroachment permits for all work within public rights-of-way shall be obtained from each involved agency prior to commencement of any construction. WMWD shall comply with all traffic control requirements of the affected local agencies.	Potentially significant	Prior to construction	WMWD	Encroachment permit and Traffic Control Plan.	Less than Significant
	Impacts to transportation and traffic may be considered potentially significant of the project would conflict with adopted policies, plans, or	All Alternatives	**MM Trans 14** (TRAF-5): As required by local jurisdictions, the proposed pipeline shall be jacked under select major intersections to avoid traffic disruption and congestion.	Potentially significant	Prior to construction	WMWD	Consultation with affected jurisdiction, review of plans by WMWD	Less than Significant

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	programs supporting alternative transportation.							

[1] Reductions attributed to certain mitigation measures are based on personal communication with Charles Blankson, AQMD staff, and the AQMD CEQA Handbook.

2.0 INTRODUCTION

2.1 BACKGROUND

Western Municipal Water District (WMWD) was formed by the voters in 1954 to bring supplemental water to growing western Riverside County. Today, the District serves roughly 24,000 retail and eight wholesale customers with water from the Colorado River, State Water Project and groundwater. As a member agency of the Metropolitan Water District of Southern California (MWD), Western provides supplemental water to the cities of Corona, Norco, a portion of Murietta and Riverside and the water agencies of Box Springs Mutual, Eagle Valley Mutual, Elsinore Valley, Lee Lake and Rancho California. Western serves customers in the unincorporated areas of El Sobrante, Eagle Valley, Temescal Creek, Woodcrest, Lake Mathews, and March Air Reserve Base.[1] An interconnected water distribution network and a reliable water supply are critical to serve the needs and meet the demands of these water customers.

WMWD is one of five of the member agencies of the Santa Ana Watershed Project Authority (SAWPA), a regional water resources planning and project implementation organization. WMWD's general manager is a court-appointed Watermaster, responsible for reporting compliance with water quality and quantity provisions of court orders regarding water rights issues in the Santa Ana watershed.[1]

The SAWPA was formed in the late 1960s and early 1970s as a planning agency with a mission to plan and build facilities to protect the water quality of the Santa Ana River (SAR) Watershed. In 2009 SAWPA finalized the Draft Santa Ana Integrated Watershed Plan - An Integrated Regional Water Management Plan (IRWMP). Improving water supply reliability is the primary objective of the IRWMP process. This objective is formulated to ensure that a reliable water supply is available for the region through 2030. Given the variability of the State Water Project (SWP) supplies, another of the region's water supply reliability goals is to optimize the use of SWP supplies to be able to reduce its reliance on imported SWP water during drought periods. Various water management strategies and projects are identified and evaluated in the IRWMP to achieve water supply reliability objectives including the Riverside Corona Feeder project.

For the Upper Santa Ana River Watershed, an IRWMP is being prepared, consistent with SAWPA's larger plans, by the Upper Santa Ana Water Resources Association (Association) to address major water management issues. San Bernardino Valley Municipal Water District (Valley District), as the regional water agency, agreed to lead the planning effort. The main benefit of the IRWMP is the development of a process for managing the San Bernardino Basin Area.

[1] Western Municipal Water District, *History and Background, Fact Sheet*. (Accessed on 5-4-2010 at http://www.wmwd.com/general.htm)

The Association is composed of nine agencies in the Upper SAR watershed that share a common concern for the region's surface and groundwater resources. In 2005, the Association formed a Regional Water Management Group for the purpose of developing an IRWM Plan. The Regional Water Management Group is called the Technical Advisory Committee (TAC).

The San Bernardino Basin Area (Basin Area) is the focus of the Upper Santa Ana River Watershed IRWMP and plays a central role in the water supply for communities within the Region. (See Sections 4.6.1 and 4.6.3 for detailed descriptions of the Basin Area and the stipulated judgment to which the basin is subject.) An objective of this IRWMP is to develop tools that might be used by water agencies to manage the groundwater levels in the Pressure Zone (also known as the area of historic high groundwater or AHHG) to reduce the risk of liquefaction in the area. Specific Basin Management Objectives are developed to manage the Basin Area in order to reduce the associated risks and computer models are being used to evaluate the various water management strategies which may be effective.

Two management objectives were developed during the IRWM planning process.

1. Improve water reliability during drought periods and reduce liquefaction.
2. Protect water quality and maximize conjunctive use opportunities.

This IRWMP was developed in coordination with Western, San Jacinto River Watershed Council, and SAWPA, and will become part of the SAWPA regional plan for the SAR watershed. A representative from SAWPA participated in the TAC meetings. Although not a member of the TAC, a representative from WMWD was also invited to, and attended, the regular meetings of the TAC.

To ensure adequate reliable water supply for the communities in the Upper SAR watershed during a prolonged drought, the overall basin management strategy will be to operate the basin under the "Tilted Basin Concept" such that the basin would begin a drought period in "as full as possible" condition. Keeping the basin relatively full and operating a conjunctive management program according to the "Tilted Basin Concept" also provides the added flexibility to reduce imports from the SWP when water quality is less desirable. This overarching management strategy will be followed by the TAC as they draft the basin management plan.

A key to improving long-term water supply reliability is for all SWP contractors in the region to fully utilize their SWP supplies when available and store or bank to build reserves for drought periods. Facilities required for the use of SWP water include additional conveyance to water treatment facilities in the region. As a SWP user, WMWD is providing such facilities through the Riverside Corona Feeder project. Imported SWP water is an important part of the region's water supply. The use of higher quality SWP water, with a long-term TDS average of less than 300 milligrams per liter (mg/L), together with the capture of flood/stormwater for groundwater recharge can also be an important part of the region's strategy to protect water quality.

Subsequent to the completion of the 2005 PEIR for the original RCF Project Alignment, there have been changes in factors that affect the potential availability and reliability of imported water supplied by MWD which may be used to recharge the Basin Area as part of the RCF project.

Such factors include potential reductions in Delta exports and Colorado River supplies, potential regulatory and emergency constraints on the use of water conveyance facilities, water quality issues, and short and long term climatic changes. (See Section 4.6.1, Setting/Effected Environment, under "State Water Project" for more details about the status of SWP supplies.)

WMWD has water rights in the Basin Area in San Bernardino County and the Realignment Alternatives will connect to the Chino Groundwater Basin ("Chino Basin") in Riverside/San Bernardino counties. Water allocated under the stipulated judgment of the Basin Area to WMWD is provided to WMWD through transfer agreements with City of Riverside and others with water production capabilities in the Basin Area. Currently, WMWD has rights to 6,000 acre-feet of water which were spread to recharge the Basin under the present operating parameters of the RCF. Through its existing agreements with Riverside, WMWD could access this and future water spread as a part of this projects operations without direct production via WMWD wells.

The Chino Basin is another groundwater basin within the SAR watershed to which the project will connect. The *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion* was completed in December 2008 (OBMP Expansion). The sufficiency of the Chino Basin includes the availability of recharge water and recharge capacity for purposes of maintaining the safe yield of the Chino Basin consistent with the OBMP and Chino Basin Judgment. (See Sections 4.6.1 and 4.6.3 for detailed descriptions of the Chino Basin and the judgment to which the basin is subject.) The project will allow water from the San Bernardino Basin Area to be delivered to Jurupa Community Services District (JCSD) and water to be taken from the Chino Basin (Chino Desalter Phase 3) via JCSD connections. The groundwater modeling prepared for the Chino Basin OBMP Expansion evaluated groundwater production requirements during "put" or "take" years with the latest groundwater pumping projections for the Chino Basin. The result of the groundwater modeling iterations in the OBMP Expansion was that the WMWD proposed maximum "take" was determined to be 5,000 AF/YR.

See Sections 4.6, Groundwater Levels, and 4.7, Groundwater Quality, for more detailed background, discussion and analysis related to groundwater issues.

2.2 PURPOSE AND NEED

The purpose of the RCF is to store excess imported water when it is available to increase firm water supplies, to improve water quality, and to reduce water costs. The project proposes to manage the groundwater levels through the construction of groundwater wells and pumps to deliver the treated groundwater supply to water users. The project will also include a new potable water pipeline system to connect to existing water facilities in ~~serve~~ portions of San Bernardino and Riverside counties. This system of storage, extraction and distribution will improve the reliability of WMWD's water supply through the managed storage and distribution of excess imported water and reduce possible water shortages during dry years through reduced dependence on imported water during dry year conditions.

To achieve this purpose, the RCF project interconnects local groundwater basins thereby creating a regional approach for the distribution of groundwater in order to improve groundwater reliability; ties into the Chino Desalter Phase 3 expansion to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin OBMP Dry-Year Yield Program; creates opportunities for future use of recycled water for groundwater basin recharge; improves groundwater quality through managed extraction and spreading of imported water; delivers available imported water to WMWD customers; and contributes to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient.

RCF infrastructure will allow WMWD to purchase State Water Project water from the Metropolitan Water District of Southern California (MWD) and store that water in the San Bernardino Groundwater Basin Area, and to extract, treat and distribute the water from the Basin Area when it is needed. This realignment also allows WMWD to address the reduced potential for California State Water Project water availability for groundwater replenishment purposes.

The proposed RCF infrastructure includes connections to the Jurupa Community Services District's pipeline facilities, the San Bernardino Valley Municipal Water District's Central Feeder project and existing WMWD facilities. These connections will facilitate the transportation of water from one water agency to another and one groundwater basin to another through the development of multiple interconnected pipeline alignments within the project area.

The facilities may also be used to convey local potable water supplies pursuant to rights held by the City of Riverside and the Elsinore Valley Municipal Water District and to deliver treated imported water to wholesale customers. If appropriate agreements can be reached, additional native water may at times also be available. The facilities may also be used to obtain and convey native water, once treated, pursuant to rights held by other agencies, such as the City of Riverside, Jurupa Community Services District, Rubidoux Community Services District, the Chino Basin Desalter Authority, San Bernardino Valley Municipal Water District, and Elsinore Valley Municipal Water District. This project will make WMWD less dependent on the direct delivery of water from the Metropolitan Water District of Southern California (MWD).

2.3 PRIOR CEQA DOCUMENTATION AND DOCUMENT ORGANZATION

Two previously certified EIRs have been prepared for portions of the currently-proposed project facilities. In 2000, WMWD began evaluating alternatives for the Riverside Corona Feeder project. The potential environmental impacts of the current adopted pipeline alignment of the Riverside-Corona Feeder (RCF) project (2005 Project Alignment) were analyzed in the *Final Programmatic Environmental Impact Report for the Western Municipal Water District Riverside-Corona Feeder Project* (SCH: 2003031121) which was certified on May 18, 2005 (Appendix B). Reaches E, F, and G were re-evaluated and refined slightly in 2007, as analyzed in the *Final Environmental Impact Report for the La Sierra Avenue Water Transmission Pipeline Project* (SCH: 2006101152) which was certified by WMWD on February 20, 2008 (Reaches E, F, and G 2008 Refinement EIR), attached as Appendix B.

This Draft SEIR/EIS evaluates the impact of changes to the project evaluated in the previously certified EIRs and has been prepared to facilitate informed public participation and decision making by creating a written record that discloses potential significant environmental effects that may be associated with the proposed realignment of a portion of the 2005 Project Alignment and added connection facilities.

Section 1.0 of this document covers the summary requirements of CEQA as required by Section 15123 of the State CEQA Guidelines. Section 2.0 provides Background on the project and its Purpose and Need along with the history of Prior CEQA Documentation. Section 3.0 includes the Project Description by discussing the project location, the project objectives, and a description of the project as the Preferred Alternative among alternatives evaluated. A general description of the project's environmental setting is presented by topic in Section 4.0.

Sections 15126, 15126.2 and 15126.4 of the California Environmental Quality Act (CEQA) Guidelines require consideration and discussion of significant environmental effects and mitigation measures proposed to minimize significant effects. All phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development, and operation (Section 15126) and an EIR shall identify and focus on the significant environmental effects of the proposed project (Section 15126.2).

Section 4.0 of this SEIR/EIS addresses each environmental effect that was determined to be potentially significant during preparation of the NOP and NOI prepared for this project (Appendix A). In addition, the SEIR/EIS addresses those issues (e.g. Groundwater Levels, Groundwater Quality, Land Use and Planning, and Transportation and Traffic) identified in the comments on the NOP and/or NOI or resulting from the wells or tank/reservoir as requiring discussion in this SEIR/EIS. Under each issue, an analysis is performed to determine the amount and degree of impact that is associated with the project. Mitigation measures, where feasible, are identified for all significant environmental impacts, in order to reduce impacts to less than significant levels whenever possible. The environmental effects are organized into issue areas, as listed below.

- Aesthetics (Section 4.1)
- Air Quality (Section 4.2)
- Biological Environment (Section 4.3)
- Cultural Resources (Section 4.4)
- Energy (Section 4.5)
- Groundwater Levels (Section 4.6)
- Groundwater Quality (Section 4.7)
- Hazards and Hazardous Materials (Section 4.8)
- Land Use and Planning (Section 4.9)
- Noise (Section 4.10)
- Stormwater/Water Quality (Section 4.11)
- Transportation and Traffic (Section 4.12)
- Cumulative Impacts (Section 4.13)

Section 5.0 is an evaluation of federal laws and regulations as they are evaluated under NEPA, while Section 6.0 summarized the CEQA evaluation for topics analyzed in Section 4.0. Section 7.0 addresses the Long-Term Implications of the Project. Sections 8.0 and 9.0 include Consultation and Coordination that occurred during the preparation of the SEIR/EIS and References and List of Preparers, respectively. The analysis of impacts and identification of mitigation measures are derived from technical reports which are included as technical appendices to this document and from other informational resources as listed in Section 9.0.

2.3.1 CEQA Procedures and Purposes

The basic purposes of CEQA are to (1) inform governmental decision makers and the public about the potential significant environmental effects of proposed activities, (2) identify the ways that environmental damage can be avoided or significantly reduced, (3) prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible, and (4) disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved (State CEQA Guidelines, Section 15002).

The EIR process typically consists of three parts—the Notice of Preparation (including the Initial Study), Draft EIR, and Final EIR. Pursuant to Section 15063 of the State CEQA Guidelines, the WMWD prepared an Initial Study (Environmental Checklist) for the project in order to determine if the project may have a significant effect on the environment. Based upon the findings of fact contained within the Initial Study, WMWD concluded that a Supplemental Environmental Impact Report (SEIR) should be prepared. A Notice of Preparation (NOP) for an SEIR and a description of potential adverse impacts were distributed to the State Clearinghouse, responsible agencies, and other interested parties on or about July 30, 2008. A notice advising of the availability of the NOP was posted by the Riverside County Clerk and the San Bernardino County Clerk on July 31, 2008. Pursuant to Section 15082 of the State CEQA Guidelines, recipients of the NOP were requested to provide responses within 30 days after their receipt of the NOP. Copies of the NOP (including the Initial Study) and the NOP distribution list are located in Appendix A. Copies of comments regarding the NOP received by WMWD are also included in Appendix A. A community scoping meeting was held on August 11, 2008 pursuant to the requirements of Section 15082(c)(1) of the State CEQA Guidelines.

WMWD, which has the initial responsibility for processing and approving the project, is considered the "Lead Agency" for the purposes of CEQA compliance. As set forth in Section 15021 of the State CEQA Guidelines, WMWD, as "Lead Agency", has the duty to avoid or minimize environmental damage where feasible. Furthermore, Section 15021(d) states that, “CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian.” Other public agencies (i.e., Responsible and Trustee Agencies) that may use this SEIR/EIS in their decision-making or permit processing, will consider the information in this SEIR/EIS along with other information that may be presented during the CEQA process. In accordance with CEQA, the public agencies will be

required to make findings for each environmental impact of the project that cannot be mitigated to below a level of significance. If the Lead Agency determines that the benefits of the proposed project outweigh unmitigated significant environmental effects, it will be required to adopt a statement of overriding considerations stating the reasons supporting their action notwithstanding the project's significant environmental effects.

2.3.2 Definition of a Supplemental Environmental Impact Report

The *Final Programmatic Environmental Impact Report for the Western Municipal Water District Riverside-Corona Feeder Project* (SCH: 2003031121) was certified on May 18, 2005; however, WMWD determined that a Supplemental Environmental Impact Report (SEIR) should be prepared to analyze the potential impacts associated with approval and implementation of the water pipeline realignment for the Central Reach and the Northern Reach (2005 Project Alignment Reaches A through D).

Pursuant to Sections 15162 and 15163 of the CEQA Guidelines, an SEIR must be prepared for that project if, on the basis of substantial evidence in the light of the whole record, the lead agency determines that one or more of the items listed below applies to the project and only minor additions or changes would be necessary to make the original EIR adequately apply to the project in the changed situation.

1. Substantial changes are proposed in the project that will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

2. Substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:

    a. The project will have one or more significant effects not discussed in the previous EIR;

    b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;

    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

    d. Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant

effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

In accordance with Public Resources Code Section 21002.1, the purpose of this SEIR is to address the potential environmental impacts resulting from the realignment of the Riverside-Corona Feeder water pipeline. An SEIR needs to contain only the information necessary to make the previous EIR adequate for the revised project. A SEIR must be given the same notice and public review as required under Section 15087 of the State California Environmental Quality Act (CEQA) Guidelines. An SEIR may be circulated by itself without re-circulating the previous Draft or Final EIR, however, for ease of review, the previous Program EIR is provided as Appendix B.

2.3.3 Breadth of Environmental Analysis

As discussed above, this SEIR will only contain the information necessary to make the previous EIR adequate for the revised project. However, the level of analysis provided in this SEIR will take on that of both a Project EIR and Programmatic EIR. The Mockingbird Connection of the proposed project will be examined at the Project level because that portion and Reaches E, F and G (already analyzed in a certified EIR) will be constructed in the short term (i.e., construction could begin within the next two years and is projected to be completed by 2013). Likewise, the Central Reach and Clay Street Connection of the proposed project will be examined at the Project level because that portion is expected to be constructed within the next few years. Thus, the Central Reach, Clay Street Connection, and Mockingbird Connection will be analyzed in detail such that construction could begin without further environmental analysis. The Central Feeder Connection, the Northern Reach, and Reach H are expected to begin construction in later phases with the Northern Reach approximately ten (10) years or more and engineering details are not currently available. Therefore, the Programmatic approach is appropriate for the Central Feeder Connection, Northern Reach and Reach H. CEQA Guidelines Section 15168 states that a Program EIR should be prepared when a series of actions that can be characterized as one large project and are related either 1) geographically, 2) as logical parts in the chain of contemplated actions, 3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or 4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways. The Northern Reach and Central Feeder Connection are related geographically and may be constructed in phases that are logical parts in the chain of contemplated actions. At the time these facilities are proposed for construction, further environmental analysis may be required. Reach H was evaluated in the original 2005 Project Alignment PEIR.

The analysis of alternatives pursuant to NEPA will cover all facilities proposed regardless of whether they were previously evaluated in a prior CEQA document because no prior NEPA evaluation has been completed for this project.

2.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

The California Environmental Quality Act (CEQA) provides that an EIR shall focus on the significant effects on the environment, discussing the effects with emphasis in proportion to their severity and probability of occurrence. Effects dismissed in an initial study as clearly insignificant and unlikely to occur need not be discussed further in the EIR unless information inconsistent with the finding in the initial study is subsequently received.

Section 21100 (c) of the Public Resources Code states that an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Section 15128 of the State CEQA Guidelines adds, "Such a statement may be contained in an attached copy of an Initial Study."

The Initial Study prepared and circulated with the Notice of Preparation (NOP) for public review on the RCF Pipeline Realignment (Appendix A) concluded that the proposed project would not result in significant impacts to the following areas: Aesthetics, Mineral Resources, Utilities/Service Systems, Public Services, Agricultural Resources, Geology/Soils, Land Use/Planning, Population/Housing, Transportation/Traffic, Recreation, and Hydrology/Water Quality. Mineral Resources, Utilities/Service Systems, Public Services, Agricultural Resources, Geology/Soils, Population/Housing and Recreation are not discussed further for purposes of the Supplemental EIR. The basis for elimination of each relevant impact in these issue areas is documented in the appended Notice of Preparation document (Appendix A).

Due to the comment letters received in response to the NOP, changes in the existing conditions with respect to water supply, and the addition to the project of some wells and a tank/reservoir, the following issues are analyzed for potential significant impacts in the Supplemental EIR/EIS: Aesthetics, Hydrology/Water Quality (as related to Groundwater Supply and Groundwater Quality), Land Use/Planning and Transportation/Traffic. The project was found to result in no impact/no effect with respect to Land Use/Planning in Section 4.9, herein.

2.5 Intended Uses of this SEIR/EIS

As the designated CEQA Lead Agency, WMWD has assumed responsibility for preparing this document and will use the information included in this SEIR/EIS to consider potential impacts to the physical environment associated with the project when making its decision regarding the project.

The SEIR/EIS will be made available for review to the public and public agencies for 45 days to provide comments on the "sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" (Section 15204 of the State CEQA Guidelines).

The U.S. Bureau of Reclamation is the Lead Agency for NEPA, while Western Municipal Water District is the Lead Agency for CEQA. The SEIR/EIS serves as an informational document for use by public agencies, the general public, and decision makers. This SEIR/EIS discusses the

impacts of development pursuant to the proposed project and related components and analyzes project alternatives. This SEIR/EIS will be used by Western Municipal Water District, the U.S. Bureau of Reclamation, trustee and responsible agencies in assessing impacts of the proposed project.

The following public agencies may use this SEIR/EIS when considering the following actions.

Trustee Agencies

- **California Department of Fish and Game**
    a) A Section 1600 Streambed Alteration Agreement will be required.
    b) A California Endangered Species Act (CESA) permit will be required if the project results in the "take" of a state listed threatened or endangered species.

Responsible Agencies

- **California Department of Fish and Game**
    a) A Section 1600 Streambed Alteration Agreement will be required.

    A California Endangered Species Act (CESA) permit will be required if the project results in the "take" of a state listed threatened or endangered species.
- **Regional Water Quality Control Board, Santa Ana Region (RWQCB)**
    a) National Pollutant Discharge Elimination System (NPDES) Construction Permits will be required.
    b) A 401 Permit will be required if the proposed project involves fill in the definable bed, bank, or channel of the Santa Ana River or any other drainage feature under RWQCB jurisdiction.
    c) A Waste Discharge Permit will be required if ground dewatering is necessary during tunneling activities.
- **California Department of Transportation (Caltrans)**
    a) Encroachment permits for crossings of State Route 60, State Route 91, and Interstate 10 will be required.
    b) Caltrans Water Pollution Control Plans (WPCP) will also be required as part of the encroachment permit application.
- **San Bernardino Flood Control District, Riverside County Flood Control and Water Conservation District, and San Bernardino Valley Water Conservation District**
    a) Encroachment permits will be required for boring underneath the Santa Ana River and other drainage channels. A License Agreement might also be required from the San Bernardino Valley Water Conservation District and such an agreement will require compensation for use of the District's right-of-way.

- **Counties of Riverside and San Bernardino, and Cities of San Bernardino, Colton, Corona and Rialto**

    a) Encroachment permits will be required to construct the pipeline in roads/rights-of-way. Public Works, Municipal Water Departments and other agencies or departments within the above listed local governments will require coordination and may require encroachment permits for any Project facilities encroaching upon facilities or facilities easements owned by the agency.

    b) Grading permits will be required by the local jurisdictions wherever construction occurs outside of the road right-of-way.

    c) Compliance with all local policies related to cultural resources and tree preservation policies.

- **City of Riverside**

    a) Encroachment permits will be required to construct the pipeline in roads/rights-of-way.

    b) Grading permits will be required by the local jurisdictions wherever construction occurs outside of the road right-of-way.

    c) Compliance with all local policies related to cultural resources and tree preservation policies.

    d) The City of Riverside will review and approve any facilities to be constructed by or on behalf of the city that will connect its existing or future facilities to those facilities constructed as part of the Riverside-Corona Feeder project.

- **California Department of Public Health, Office of Drinking Water (CDPH)**

    a) CDPH will review and have approval authority for potable water facility plans and specifications.

- **California Department of Transportation, County of Riverside Department of Transportation, County of San Bernardino Department of Engineering, and each of the cities with facilities proposed within their jurisdiction**

    a) These agencies will review and have approval authority over construction of any improvements in public roadways.

- **Riverside County Flood Control and Water Conservation District (RCFC&WCD)**

    a) RCFC&WCD will require coordination and may require encroachment permits for any facilities encroaching upon facilities or facilities easements owned by RCFC&WCD ~~MWD~~ .

- **San Bernardino Valley Municipal Water District (SBVMWD)**

    a) SBVMWD will review and approve any facilities to be constructed by or on behalf of SBVMWD that will connect its existing or future facilities to those facilities constructed as part of the Riverside-Corona Feeder project.

- **Jurupa Community Services District (JCSD)**

    a) JCSD will review and approve any facilities to be constructed by or on behalf of JCSD that will connect its existing or future facilities to those facilities constructed as part of the Riverside-Corona Feeder project.

- **Metropolitan Water District (MWD)**

    a) Metropolitan Water District will require coordination and may require encroachment permits for any facilities encroaching upon facilities or facility easements owned by MWD.

- **California Department of Water Resources (DWR)**

    a) DWR will require coordination and encroachment permit for the crossing of its California Aqueduct, Santa Ana Pipeline near Fairway Drive in the city of Colton.

Several utility purveyors and railroads, including but not limited to Union Pacific Railroad, Burlington Northern Santa Fe Railroad, Southern California Edison, and the Southern California Gas Company, will require coordination and may require encroachment permits for any facilities encroaching upon underground utility or rail line easements in the project area. Although not Responsible Agencies, private entities such as these will be notified and coordination will occur prior to project construction.

3.0 PROJECT DESCRIPTION/PROJECT ALTERNATIVES

3.1 INTRODUCTION

Pursuant to 40 CFR 1502.14 and California Resources Code Section 21000 et seq., this SEIR/EIS analyzes three alternatives for the conjunctive use of the San Bernardino Groundwater Basin (Basin Area) and conveyance and connection facilities to connect WMWD's service area to the Basin Area. In addition, the NEPA and CEQA mandated No Action/No Project Alternative is analyzed. The following section provides a description of the process used to develop the alternatives analyzed herein, a description of the alternatives' physical, construction, and operational characteristics, and a discussion of those alternatives that have been considered but eliminated from further consideration and analysis. The objectives of the proposed actions are also addressed in Section 2.1, Purpose and Need, and summarized in Section 3.3, below, for ease of reference.

3.2 PROJECT SITE LOCATION

The Riverside-Corona Feeder (RCF) alternatives extend across multiple jurisdictions, including unincorporated areas of San Bernardino and Riverside Counties and the cities of San Bernardino, Colton, Rialto, Grand Terrace and Riverside, and cross multiple sections on seven U.S. Geological survey (USGS) 7.5-minute topographic quadrangles (see **Figure 3.0-1, Regional Location**, and **Table 3.0-A**).

3.3 PROJECT OBJECTIVES

The Riverside-Corona Feeder Project (RCF) will be used to deliver water from the Basin Area to communities throughout western Riverside and San Bernardino counties during drought and emergency periods and when water is otherwise available. The following is a summary of the Purpose and Need (NEPA), or Project Objectives (CEQA), of the RCF:

- improve the reliability of WMWD's water supply;
- reduce possible water shortages during dry years;
- reduce dependence on the direct delivery of imported water during dry year conditions;
- interconnect local groundwater basins thereby creating a regional approach for the distribution of groundwater in order to improve groundwater reliability;
- tie into the Chino Desalter Phase 3 expansion to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin Dry-Year Yield Program;
- ~~leave available the opportunity for future use of recycled water for groundwater basin recharge;~~
- improve groundwater quality;
- deliver available imported water to its customers; and
- contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient.

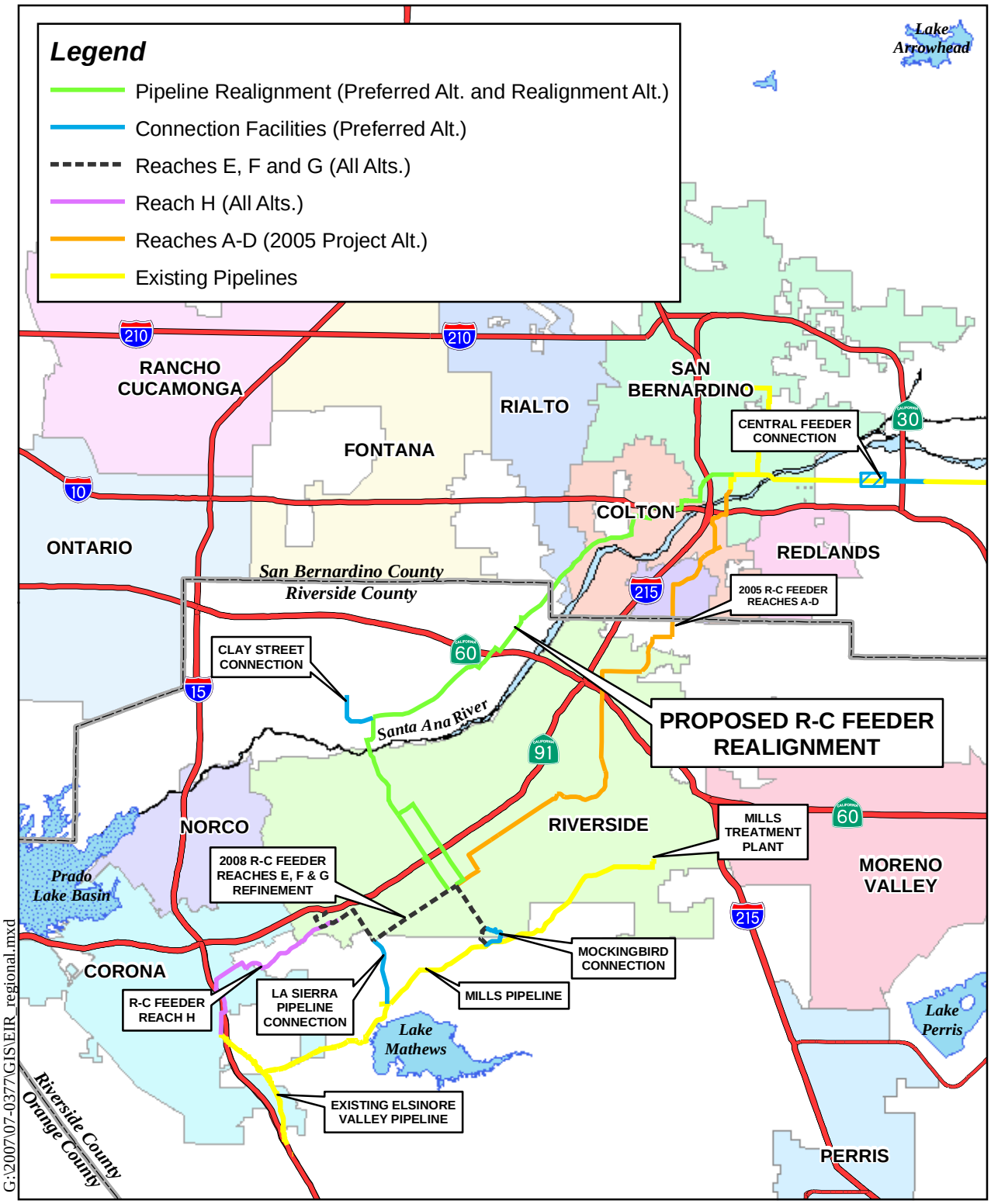


Figure 3.0-1
Regional Location

Table 3.0-A, Project Area Location in Riverside and San Bernardino Counties (San Bernardino Base and Meridian)

County	USGS 7.5-minute Topographic Quadrangle	Section	Township	Range
San Bernardino	San Bernardino South	4, 5, 8, 9, 17, 18	2 South	4 West
		2	2 South	5 West
		15, 16, 20, 21, 22, 27, 29, 30, 33, 34	1 South	4 West
		25, 35, 36	1 South	5 West
	Fontana	2	2 South	5 West
		35	1 South	5 West
	Redlands	15, 16, 17, 20, 21, 22	1 South	3 West
Riverside	Corona North	27, 28, 29	3 South	6 West
	Corona South	28, 29, 32	3 South	6 West
		5, 6	4 South	6 West
	Fontana	2, 3, 9, 10, 16, 17	2 South	5 West
		35	1 South	5 West
	Riverside East	17, 18, 19, 30, 31	2 South	4 West
		13, 24, 25, 35, 36	2 South	5 West
		6	3 South	4 West
		1, 2	3 South	5 West
	Riverside West	2, 3, 5, 6, 7, 8, 9, 10, 16, 17, 19, 20, 21, 22, 27, 28, 31	3 South	5 West
		1, 22, 23, 24, 25, 26, 27, 36	3 South	6 West
		16, 17, 19, 20	2 South	5 West
		23,24, 25, 36	2 South	6 West
	San Bernardino South	2	2 South	5 West
		35	1 South	5 West

3.4 WMWD OPERATING PROCEDURES THAT RELATE TO THIS ACTION

WMWD has water rights in both the San Bernardino Groundwater Basin (Basin Area) in San Bernardino County and the Chino Groundwater Basin (Chino Basin) in Riverside/San Bernardino counties. Water allocated under the wheeling agreement of the Basin Area to WMWD is provided to WMWD through transfer agreements with City of Riverside and others with water production capabilities in the Basin Area. Currently, WMWD has rights to 6,000 acre-feet of water which were spread to recharge the Basin Area under the present operating parameters of the RCF. Through its existing agreements with Riverside WMWD could access this and future water spread as a part of this project operations without direct production via WMWD wells.

The Chino Basin is managed pursuant to the *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion* (OBMP Expansion). The groundwater modeling prepared for the Chino Basin OBMP Expansion evaluated groundwater production requirements and determined that the WMWD could extract 5,000 acre-feet per year without affecting the safe-yield of the basin.

3.5 ALTERNATIVES FORMATION PROCESS

Western Municipal Water District initiated feasibility work and conceptual alternatives evaluations of the Riverside Corona Feeder project in 2000. One alignment was selected and adopted. The potential environmental impacts of the current adopted pipeline alignment for the Riverside-Corona Feeder (RCF) project (2005 Project Alignment) were analyzed in the *Final Programmatic Environmental Impact Report for the Western Municipal Water District Riverside-Corona Feeder Project* (SCH: 2003031121) which was certified on May 18, 2005. Thus, this original 2005 Project Alignment will serve as one of the alternatives herein analyzed under NEPA.

The 2005 Project Alignment was divided into eight (8) reaches (A-H). One of the eight reaches will remain consistent between all the alternatives described below and analyzed in this SEIR/EIS. Reach H has not been modified since its original inception and thus will remain consistent with the 2005 Project Alignment and 2005 Certified Programmatic EIR (2005 PEIR) under all the action alternatives evaluated herein. Reaches E, F, and G were re-evaluated and Reaches F and G were refined slightly in 2007, as analyzed in the *Final Environmental Impact Report for the La Sierra Avenue Water Transmission Pipeline Project* (SCH: 2006101152) which was certified by WMWD on February 20, 2008 (Reaches E, F, and G 2008 Refinement EIR), attached as Appendix J. This refined alignment for Reaches F and G will remain consistent with the 2008 Refinement EIR under both realignment alternatives evaluated herein.

In addition to the above minor refinements of Reaches E – G, Reaches A – D of the 2005 Project Alignment were realigned in 2007 to provide for the original purpose of the project while adding connectivity and reliability to WMWD's system. The Northern Reach and the Central Reach described in this SEIR/EIS as the "Realignment Alternative" are a realignment of Reaches A

through D of the 2005 Project Alignment, as shown on **Figure 3.0-3.** Specifically, the realignment created the ability for WMWD to connect to the Jurupa Community Services District, and additional San Bernardino County jurisdictions. This Realignment Alternative, including the refinements for Reaches F and G, and the original alignment of Reaches E and H, will be evaluated as one of the action alternatives analyzed in this document.

Most recently, in 2009, some additional connection facilities were added to the project. These additional connections would allow WMWD to move water through the Central Feeder pipeline in San Bernardino County, thus providing flexibility in the system; accept water directly from the Chino Desalter Phase 3 facilities pursuant to existing WMWD water rights in the Chino Basin; and to facilitate connections to the existing MWD Mills Pipeline for the efficient transport of water throughout the service area. These additional facilities are added to the Realignment Alternative for consideration as the final action alternative evaluated in this SEIR/EIS and is considered the Preferred Alternative, or the "project" for CEQA purposes.

3.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION/ANALYSIS

Alternatives were considered in Section III-2 of the 2005 PEIR, which is hereby incorporated by reference and summarized as follows. An alternative which was rejected in the 2005 PEIR included an alternative for Reach B which would entail tunneling across the mountains located between Reche Canyon and Pigeon Pass Canyon, was developed during preliminary engineering design (**Figure III-2a**). This alternative was rejected because it was determined that tunneling would be at least 4 to 5 times as expensive as traditional trenching methods for pipeline construction and environmental impacts were also determined to be higher than other proposed routes. Alternatives considered and analyzed in the 2005 Project PEIR for their potential to reduce or avoid significant impacts include: an option for Reach D that would reduce potentially significant impacts to aesthetics and cultural resources was considered but rejected due to increased traffic and air quality impacts adjacent to an existing school. An alternative alignment for Reach H that shares a shorter boundary with the Corona Landfill site (will lessen potential significant impacts to hazardous materials sites and to sensitive biological resources associated with riparian habitat) was evaluated but rejected due to off-setting impacts to coastal sage scrub habitat in lieu of riparian, and no avoidance of potential hazardous materials. Lastly, an alternative alignment for Reaches A, B, and E that would reduce project impacts to biological resources was considered but eliminated due to increased traffic and air quality impacts which off-set the reduced biological impacts.

In order to establish the appropriate realignment of the pipeline route for the Riverside Corona Feeder, an Alignment Feasibility Study was prepared by Black & Veatch in 2006. (B&V 2006) It evaluated the feasibility of four alternative alignments: Western, North A, North B, and Eastern. The Alignment Feasibility Study recommended the North A Alignment (Realignment Alternative). The other three alternative routes were eliminated from further consideration because they all had greater linear length and more crossings compared to the North A Alignment which was determined to be easier to construct at the lowest cost. The North B Alternative had similar environmental impacts as North A, including potential impacts to Delhi-sands. The Eastern Alternative had two crossings of the Santa Ana River instead of one and more

of the alignment in residential neighborhoods. The Western Alternative was nearly twice as long as the North A alignment thus resulting in greater overall construction-related impacts.

3.7 PROJECT ALTERNATIVES

The four alternatives analyzed in this document are referred to as the No Action/Project Alternative, 2005 Project Alignment Alternative, Realignment Alternative, and the Realignment Alternative with Additional Connections (Preferred Alternative). The Preferred Alternative is the "Project" for purposes of CEQA and the Supplemental EIR.

No Action/Project Alternative

The No Action/Project alternative includes continued use of current sources of water for WMWD needs and for other water purveyors who would benefit from water that could be purveyed in the project-constructed system. Excess imported water associated with this project would not be recharged into or extracted from the San Bernardino Basin Area when it is needed resulting in a less reliable water supply for WMWD. The No Action/Project Alternative would hold WMWD dependent on the direct delivery of water from The Metropolitan Water District of Southern California (MWD) during dry hydrologic years. Specifically, this Alternative would not: interconnect local groundwater basins thereby creating a regional approach for the distribution of groundwater in order to improve groundwater reliability; tie into the Chino Desalter Phase 3 expansion to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin Dry-Year Yield Program; leave available the opportunity for future use of recycled water for groundwater basin recharge; improve groundwater quality; deliver available imported water to WMWD customers; and would not contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient. Potential temporary impacts associated with construction activities will be avoided.

2005 Project Alignment Alternative

The 2005 Project Alignment Alternative was analyzed in full (Reaches A through H) in the 2005 PEIR, as discussed above. The majority of this alternative is located within the City of Riverside (Reaches B through H), with some portions traversing portion of the cities of Colton, Corona and Grand Terrace, and the County of Riverside. For purposes of this analysis, the complete 2005 PEIR Project Description can be found in **Appendix B**, beginning on 2005 PEIR p. I-2-1. It is summarized as follows.

Infrastructure proposed to be constructed as part of the 2005 Project Alternative includes: a 30-mile long feeder pipeline with one mainline meter and five metered turnouts, a 2,500 horsepower (hp) pump station designed to lift water from the City of Riverside's Waterman Pipeline into the 2005 Project Alignment which operates at an hydraulic gradient line (HGL) of 1250±, and up to twenty (20) 350 HP x 2,200 gallons per minute (GPM) new or existing groundwater production wells to be located within the San Bernardino Basin Area.

The 2005 Project Alignment would operate under gravity flow conditions, from the connection to SBVMWD's 1250-foot pressure zone in the City of San Bernardino to its southerly terminus in the City of Corona. The 2005 Project Alignment reaches are sized for maximum design

velocities in the range of 3.5–5.3 feet per second (fps). When all five turnouts are delivering their maximum design deliveries, totaling 100 cubic feet per second (cfs), the HGL will be 1,056 feet at the 2005 Project Alignment terminus in the City of Corona.

The 2005 Project Alignment would connect to and obtain capacity from San Bernardino Valley Municipal Water District's (SBVMWD) 28,000-foot, 78-inch diameter Baseline Feeder South Extension Pipeline at the southerly terminus of the SBVMWD pipeline. The 2005 Project Alignment would also connect to and obtain capacity from the City of Riverside's proposed 10,000-foot, 60-inch diameter Waterman Avenue Pipeline Replacement Project which is at a HGL of 1060′±. This connection would necessitate the construction and operation of a pump station to lift the water into WMWD's proposed 2005 Project Alignment project at a HGL of 1250′±. Total capacity obtained via these two systems will be 100 cfs. SBVMWD will obtain about 30 cfs of capacity in the 2005 Project Alignment from the Baseline Feeder South Extension Pipeline to Barton Road.

The majority of the 2005 Project Alignment would be constructed utilizing traditional trenching techniques. Segments of the RCF that will not be installed utilizing trenching techniques include the Santa Ana River crossing, under busy roadways, under rail crossings, under drainages and under other sensitive areas. Micro-tunneling techniques are proposed to install the 2005 Project Alignment under the Santa Ana River and boring techniques are proposed at all of the other locations mentioned above.

The 2005 Project Alignment would extend south from a point north of the Santa Ana River near the intersection of the Warm Creek Bypass maintenance road and the City of Riverside's Rice-Thorne pipeline, underneath the Santa Ana River, through a commercial and industrial area parking lot, within multiple road right of ways, under Interstate 10, within the Gage Canal right-of-way, within the right-of-way of proposed roads that are currently dirt roads used for agricultural activities, under the Arlington Flood Control Channel, under several rail lines and flood control easements, just inside the boundaries of the Corona Landfill within the City of Corona and under Interstate 15. The majority of the 2005 Project Alignment would be constructed within road right-of-ways.

The proposed pump station would be constructed within the City of San Bernardino on a vacant lot near the intersection of Orange Show Road and Waterman Avenue. The exact locations of the existing and/or proposed wells have not yet been determined.

The 2005 Certified Program EIR for the RCF project analyzed the effects to the environment that were found to be potentially significant in the IS/NOP prepared for the 2005 project. Potentially significant impacts to Aesthetics, Air Quality, Biological Resources, Cultural Resources, Hazardous Materials, Transportation/Traffic, and Water Quality were analyzed and appropriate mitigation measures were developed. All of the above categories were found to have less than significant impacts with the implementation of the proposed mitigation measures with the exception of Air Quality. Impacts to Air Quality were considered significant unavoidable impacts and a Statement Overriding Considerations was adopted. A copy of the 2005 Certified Program EIR is attached as **Appendix B** of this document.

The 30-mile long 2005 Project Alignment has been divided into reaches A – H, as described below (**Figure 3.0-1** herein, and Figures I-2a – I-2f in the 2005 PEIR):

Reaches A – D (Summarized from pages I-2-2 and I-2-3 of the 2005 PEIR)

Reach A would consist of approximately 8,000 feet of up to 72-inch diameter pipeline from the southerly terminus of the SBVMWD Baseline Feeder North/South to the 100 CFS mainline meter facility on Barton Road located just east of Reche Canyon Road. Reach A extends southerly across the Santa Ana Riverbed east of Interstate 215. A 72-inch pipeline would be installed across the riverbed utilizing micro-tunneling techniques within a 92-inch structure. SBVMWD will obtain approximately 30 CFS of capacity in this portion of the RCF.

Due to the preliminary nature of the proposed project, geologic conditions under the Santa Ana River are not known in detail for the proposed crossing location in Reach A. Should micro-tunneling techniques become infeasible due to geologic conditions under the Santa Ana River, Alternative 5 in the 2005 Certified Program EIR addresses the potential impacts of open trench construction methods for this Reach at the Santa Ana River crossing location.

Reach B would continue southwesterly for approximately 29,000 feet with up to 60-inch diameter pipeline into the City of Grand Terrace in Barton Road and south in and/or adjacent to the Gage Canal right-of-way, ending near the intersection of Rustin Avenue and Marlborough Avenue in the City of Riverside. Boring techniques will be utilized where the RCF is proposed to cross under a riparian area located within and/or adjacent to the Gage Canal right-of-way, under the Union Pacific rail lines just east of the intersection of Rustin Avenue and Marlborough Avenue.

Reach C would be constructed from the end of Reach B for an additional approximately 29,000 feet of up to 60-inch diameter pipeline, west in Marlborough Avenue, then south in Chicago Avenue, west in Arlington Avenue, to Turnout No. 2 which would be located near the intersection of Arlington Avenue and Fairview Avenue in the City of Riverside. The RCF will be placed underground utilizing boring techniques where it will travel under Iowa Avenue, a Union Pacific rail line located just east of Chicago Avenue, Spruce Street, Interstate 215/State Route 60, Third Street, University Avenue, Martin Luther King Boulevard, and Central Avenue.

Reach D would continue west in Arlington Avenue, then south in Victoria Avenue, southwest in Lincoln Avenue, southeast in Adams Street, southwest in Cleveland Avenue to the intersection of Cleveland Avenue and Irving Street for a total of approximately 24,000 feet of up to 54-inch diameter pipeline to near the intersection of Cleveland Avenue and Irving Street in the City of Riverside. Boring techniques will be utilized to construct the RCF under Mary Street, Madison Avenue and a rail line northeast of St. Lawrence Street.

Reaches E – G (summarized from pages I-2-3 of the 2005 PEIR) 11,000-feet of 36-inch diameter branch pipeline

Reach E is a branch pipeline that would extend approximately 11,000 feet of 36-inch diameter branch pipeline to the southeast in Irving Street to a point approximately 200 feet northwest of Firethorn Avenue. Boring techniques will be utilized to install a 36-inch pipeline that will cross under the open Gage Canal and then the pipeline will traverse

downhill just southwest of the intersection of Irving Street and Firethorn Avenue southwest to Firethorn Avenue and across Van Buren Boulevard to the Mockingbird Pump Station.

Reach F would extend approximately 24,000 feet of up to 42-inch diameter pipeline southwest in Cleveland Avenue from the intersection of Cleveland Avenue and Irving Street, southeast on La Sierra Avenue, west in Dufferin Avenue, northwest on Lyon Avenue, southwest in Victoria Avenue, northwest in Fillmore Street to Indiana. Boring techniques will be utilized to bore under Van Buren Boulevard, a riparian drainage located within the right-of-way, but un-constructed portion of Cleveland Avenue, and a drainage facility (under construction) located at the intersection of Dufferin Avenue and Lyon Avenue.

Reach G is also a branch pipeline consisting of approximately 2,000 feet of 30-inch diameter branch pipeline that would extend from northwest in Fillmore Street from the intersection of Fillmore Street and Indiana Avenue under rail lines and across the Arlington Flood Control Channel to the existing Arlington Pump Station. Boring techniques will be utilized to bore under rail lines and the Arlington Flood Control Channel.

Reach H (summarized from page I-2-4 of the 2005 PEIR) 32,000-feet of 36-inch diameter pipeline

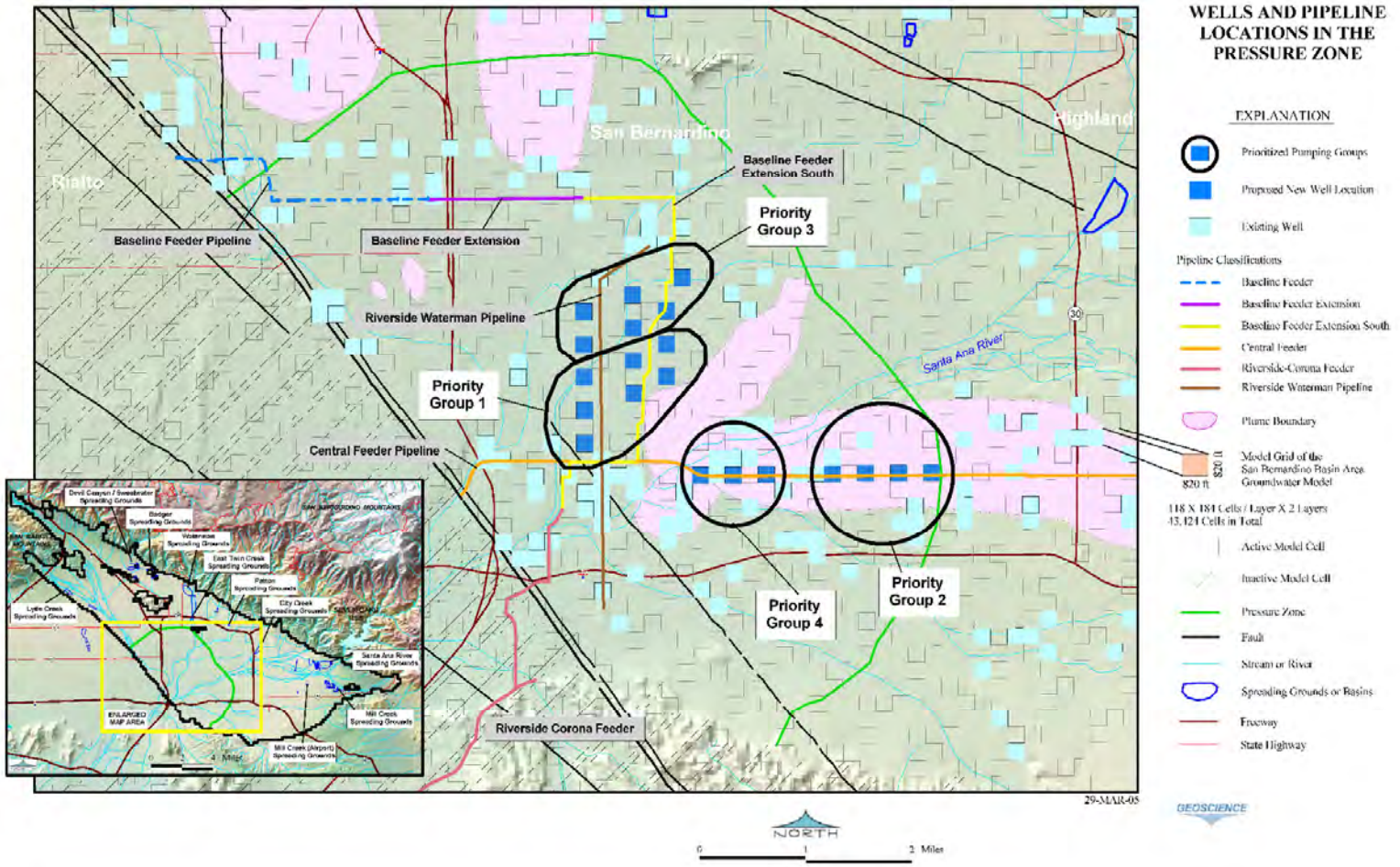
Reach H would begin at the intersection of Fillmore Street and Indiana Avenue in the City of Riverside and will extend up to a 36-inch diameter pipeline southwest for approximately 32,000 feet on Indiana Avenue, northwest on Neece Street, southwest into the City of Corona on Magnolia Avenue, (including on Leeson Lane), south through an industrial park parking lot, southeast through the Corona Landfill, entering the north end of Belair Street, continuing south in Belair Street, west in Old Temescal Road, under Interstate 15, south on Compton Avenue to the intersection of Compton Avenue and Ontario Avenue. Boring techniques will be utilized to construct the 2005 Project Alignment under flood control facilities near Lincoln Street, McKinley Street, American Way and the north end of Belair Street in Corona. Bores will also be utilized to construct under a rail line near Sherborn Street and under Interstate 15 on Old Temescal Road. The southern terminus of the project will be located near the intersection of Ontario and Compton Avenues in the City of Corona.

The operating scenarios for recharge and extraction were analyzed in a technical study prepared by Geoscience Support Services, Inc. (Appendix F of the 2005 PEIR) and were presented and analyzed in the Responses to Comments received on the Draft 2005 PEIR (Final 2005 PEIR p. 2.0-61). Various operating scenarios were analyzed to prove that the project could be operated in such a fashion as to avoid additional impacts caused by contamination plumes and/or increases in groundwater levels in areas of historically high groundwater and liquefaction. The operating assumptions included in the 2005 Project Alignment Alternative are incorporated by reference from Appendix F of the 2005 PEIR, as summarized below.

The same groundwater flow (MODFLOW), particle tracking (MODPATH), and solute transport (MT3DMS) models that were used for the analysis in the Muni/Western Santa Ana River (SAR)

Water Right Applications DEIR (Water Right DEIR) were used to perform these analyses for the 2005 Project Alignment. All modeling assumptions included: a forecast period of 2001 – 2039 based on historic hydrologic data from 1961 – 2000, historical diversions by senior water rights claimants, historical diversions by the San Bernardino Valley Water Conservation District, releases of environmental restoration, no seasonal storage at Seven Oaks Dam, and the same future water demands/replenishment to meet judgment requirements.

To this base modeling were added extractions for delivery through the Riverside Corona Feeder and replenishment of State Water Project (SWP) water. Although no exact locations for wells were proposed, the assumed extraction schedule and new well field locations, and replenishment schedules assumed for the 2005 PEIR appear as **Figure 3.0-2** and **Table 3.0-B**, herein. Extraction and replenishment assumptions were based on a water availability forecast model developed by Metropolitan Water District (MWD) that included implementation of the MWD Water Surplus and Drought Management Plan (WSDM). The extraction and replenishment schedule was based on the WSDM predictions for change in storage in Diamond Valley Lake, change in storage for the state water project program, and MWD's interruption of replenishment services. Other factors included surplus remaining after WSDM action is taken and hydrology in southern California. The assumed location of wells included "Priority Groups" of wells so that operations could be fine tuned to avoid potential groundwater impacts. For example, for years with a total extraction of 5,000 acre-ft, only 7 wells in Priority Group 1 are used, when total extraction reaches 20,000 acre-ft, wells in both Priority Group 1 and Priority Group 2 are required. This represented an operating scenario for the 2005 Project Alignment that maximized the conjunctive use potential of the project and produced a total extraction during the period from 2001 through 2039 of 685,000 acre-ft.



Source: Geoscience, 2005.

Figure 3.0-2
2005 Project Alignment Well Field Locations

Table 3.0-B, 2005 Project Alignment Summary of Annual Extraction and Annual Replenishment Schedule (Units in Acre-ft)

Year	Total Annual Extraction	Water Budget Remaining Surplus 1	Interrupt Replenish-ment Service	Replenishment for Scenario 1								
				SAR SG	City Creek SG	Water-man SG	East Twin Creek	Badger SG	Devil Canyon / Sweet-water SG	Lytle Creek SG	Mill Creek SG	Total
2001	0			0	0	0	0	0	0	0	0	0
2002	0			0	0	0	0	0	0	0	0	0
2003	0			0	0	0	0	0	0	0	0	0
2004	0			0	0	0	0	0	0	0	0	0
2005	0			0	0	0	0	0	0	0	0	0
2006	5,000	198,101		0	20,000	15,000	10,000	2,000	10,000	2,000	6,000	65,000
2007	10,000			0	0	0	0	0	0	0	0	0
2008	15,000	131,672		0	0	0	0	0	0	0	0	0
2009	20,000			0	10,000	5,000	5,000	1,000	0	0	0	21,000
2010	20,000			0	10,000	10,000	10,000	1,000	0	0	0	31,000
2011	25,000			0	15,000	9,000	9,000	0	0	0	0	33,000
2012	20,000	7,279		0	12,000	7,000	6,000	1,000	0	0	0	26,000
2013	10,000	278,184		5,000	15,000	4,000	2,000	0	0	2,000	6,000	34,000
2014	10,000	215,782		5,000	15,000	2,000	4,000	0	2,000	2,000	6,000	36,000
2015	20,000			0	10,000	5,000	5,000	0	0	0	0	20,000
2016	40,000		yes	0	0	0	0	0	0	0	0	0
2017	15,000			0	0	0	0	0	0	0	0	0
2018	10,000	240,965		0	0	15,000	12,000	1,000	0	2,000	0	30,000
2019	10,000	421,712		0	0	18,000	15,000	1,000	0	2,000	0	36,000
2020	20,000			0	0	0	0	0	0	0	0	0
2021	10,000	458,935		0	0	12,000	10,000	0	0	2,000	0	24,000
2022	10,000	958,656		0	0	16,000	14,000	2,000	0	2,000	0	34,000
2023	25,000	52,812		0	0	6,000	5,000	0	0	2,000	0	13,000
2024	10,000	210,171		5,000	15,000	6,000	5,000	0	0	2,000	6,000	39,000
2025	10,000	389,845		5,000	17,000	8,000	9,000	1,000	0	2,000	6,000	48,000
2026	20,000	77,571		5,000	18,000	10,000	10,000	1,000	0	2,000	6,000	52,000
2027	30,000			0	10,000	15,000	5,000	1,000	0	0	0	31,000
2028	30,000			0	10,000	10,000	10,000	1,000	0	0	0	31,000
2029	40,000		yes	0	0	0	0	0	0	0	0	0
2030	40,000		yes	0	0	0	0	0	0	0	0	0
2031	40,000		yes	0	0	0	0	0	0	0	0	0
2032	15,000			0	0	10,000	10,000	1,000	0	2,000	0	23,000
2033	25,000			0	15,000	4,000	3,000	1,000	0	2,000	0	25,000
2034	15,000			0	8,000	4,000	3,000	1,000	0	2,000	0	18,000
2035	20,000			0	15,000	0	0	0	0	0	0	15,000
2036	30,000			0	15,000	0	0	0	0	2,000	0	17,000
2037	15,000			0	0	10,000	7,000	1,000	0	2,000	0	20,000
2038	20,000			0	15,000	0	0	0	0	0	0	15,000
2039	30,000			0	20,000	0	0	0	0	0	0	20,000
Total	685,000			Total =								757,000

SG = Spreading grounds

1 Denotes the amount of imported water available to MWD that cannot be used to meet MWD demand or put into MWD

29-Mar-05 GEOSCIENCE Support Services, Inc.

Realignment Alternative (Jackson Street or Monroe Street options)

The Realignment Alternative is evaluated in this SEIR/EIS as a revised pipeline location for a portion of the 2005 Riverside Corona Feeder Project Alignment. The realignment of original 2005 Reaches A through D is relocated to the west as shown on **Figure 3.0-1**. In addition to providing the same benefits to WMWD with respect to improvement in the reliability of WMWD's water supply, reduction of possible water shortages during dry years, reduction of the need for direct delivery of imported water during dry year conditions, improvement in groundwater quality; delivery of available imported water to its customers, and an important contribution to the Upper Santa Ana Watershed effort; the Realignment Alternative includes the ability to serve additional jurisdictions and interconnect local groundwater basins thereby creating a regional approach for the distribution of groundwater in order to improve groundwater reliability. For the purposes of analysis in this SEIR/EIS, the approximately 108,000-linear foot pipeline Realignment Alternative is described in two Reaches: Northern Reach and Central Reach (**Figure 3.0-3, Proposed Project with Previous Alignment/Location**). The Central Reach would be constructed prior to the Northern Reach. The Northern Reach is not expected to be initiated for approximately 10 years.

The Realignment Alternative will extend from near the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino, traversing through portions of the cities of Colton and Rialto and unincorporated San Bernardino County into unincorporated Riverside County along Agua Mansa Road. The alignment then traverses west through unincorporated Riverside County, then south in Clay Street and crosses under the Santa Ana River near Van Buren Boulevard. South of the Santa Ana River, the alternative alignment enters the City of Riverside, where it continues in a south/southeasterly direction and connects to the approved 2005 Project Alignment at Cleveland Avenue. The proposed realignment will be constructed primarily in the rights-of-way of existing roads, under I-10, I-215, State Route 60, and State Route 91, and under the Santa Ana River and other lesser creeks and drainages.

As described in the *Basis of Design Report,* prepared for the Riverside-Corona Feeder project by Black and Veatch, dated August 31, 2007 (Black & Veatch report). The majority of the Realignment Alternative will be constructed utilizing traditional trenching techniques. Segments of the RCF that will not be installed utilizing trenching techniques include the Santa Ana River crossing, under busy roadways, under rail crossings, under drainages, and under other sensitive areas. Micro-tunneling or other boring techniques are proposed to install the RCF under the Santa Ana River and at the other locations mentioned above. (See **Table 3.0-C, Summary of Major Pipeline Crossings North to South,** for a summary of major pipeline crossings.) The Black & Veatch report provides detailed information regarding the alignment and construction of the proposed Realignment Alternative.

As described in detail below, the Northern Reach includes the pipeline from a San Bernardino Valley Municipal Water District's (SBVMWD) point of connection in Orange Show Road in the City of San Bernardino to SBVMWD Meter and Turnout located at the San Bernardino County/Riverside County border in Agua Mansa Road. The Northern Reach continues south to a Jurupa Community Services District (JCSD) point of connection at Clay Street and Limonite Avenue. The Central Reach continues south from the JCSD point of connection to its terminus at

Jackson Street and Cleveland Avenue. The Central Reach also contains a Monroe Street alternate alignment for that portion of the reach in Jackson Street. See below for a more detailed description of each Reach.

Northern Reach – 12,000 linear feet of up to 78-inch diameter pipeline

The Northern Reach begins at a connection with the existing SBVMWD Baseline Feeder South. The proposed Northern Reach will extend approximately 12,000 linear feet from near the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino, traversing west in Orange Show Road/Auto Plaza Drive under the I-215 freeway, then south to Fairway Drive, west in Fairway Drive to Sperry Drive, south in Sperry Drive to Valley Boulevard (**Figure 3.0-4, Northern Reach – Maximum 78-Inch Diameter Pipeline**). Boring techniques will be utilized where the RCF is proposed to cross under Twin Creek Channel, I-215, and Warm Creek.

Northern Reach – 45,000 linear feet of up to 60-inch diameter pipeline

From the intersection of Valley Boulevard and Sperry Drive, the Northern Reach will continue west in Valley Boulevard to La Cadena Drive under I-10, and south in La Cadena Drive. The proposed alignment continues south along La Cadena Drive to "N" Street, then west in "N" Street to South Rancho Avenue, south in South Rancho Avenue to Agua Mansa Road, then southwest in Agua Mansa Road to the SBVMWD meter and turnout (point of connection) located at the San Bernardino County/Riverside County border. The Northern Reach continues southwest in Agua Mansa Road from the SBVMWD point of connection to Market Street, west in Market Street to Rubidoux Boulevard, southwest in Rubidoux Boulevard to 30th Street, then northwest in 30th Street to Avalon Street. The alignment continues southwest along Avalon Street, under State Route 60, to Mission Boulevard and a JCSD/Rubidoux Community Services District (RCSD) point of connection (**Figure 3.0-5, Northern Reach – Maximum 60-Inch Diameter Pipeline**). Boring techniques will be utilized where the RCF is proposed to cross under the Union Pacific rail lines south of Maple Court, Riverside Canal, Rialto channel, and the Union Pacific rail lines just east of Wilson Street and State Route 60.

Northern Reach – 19,425 linear feet of up to 54-inch pipeline

The alignment then traverses west in Mission Boulevard from the intersection of Avalon Street to Riverview Drive/Limonite Avenue. It then traverses south in Riverside Drive/Limonite Avenue to 42nd Street and continues southwest along Limonite Avenue, then south in Clay Street to the JCSD point of connection (**Figure 3.0-6, Northern Reach – Maximum 54-Inch Diameter Pipeline**). Boring techniques will be utilized where the RCF is proposed to cross under a flood control channel just east of Pacific Avenue.

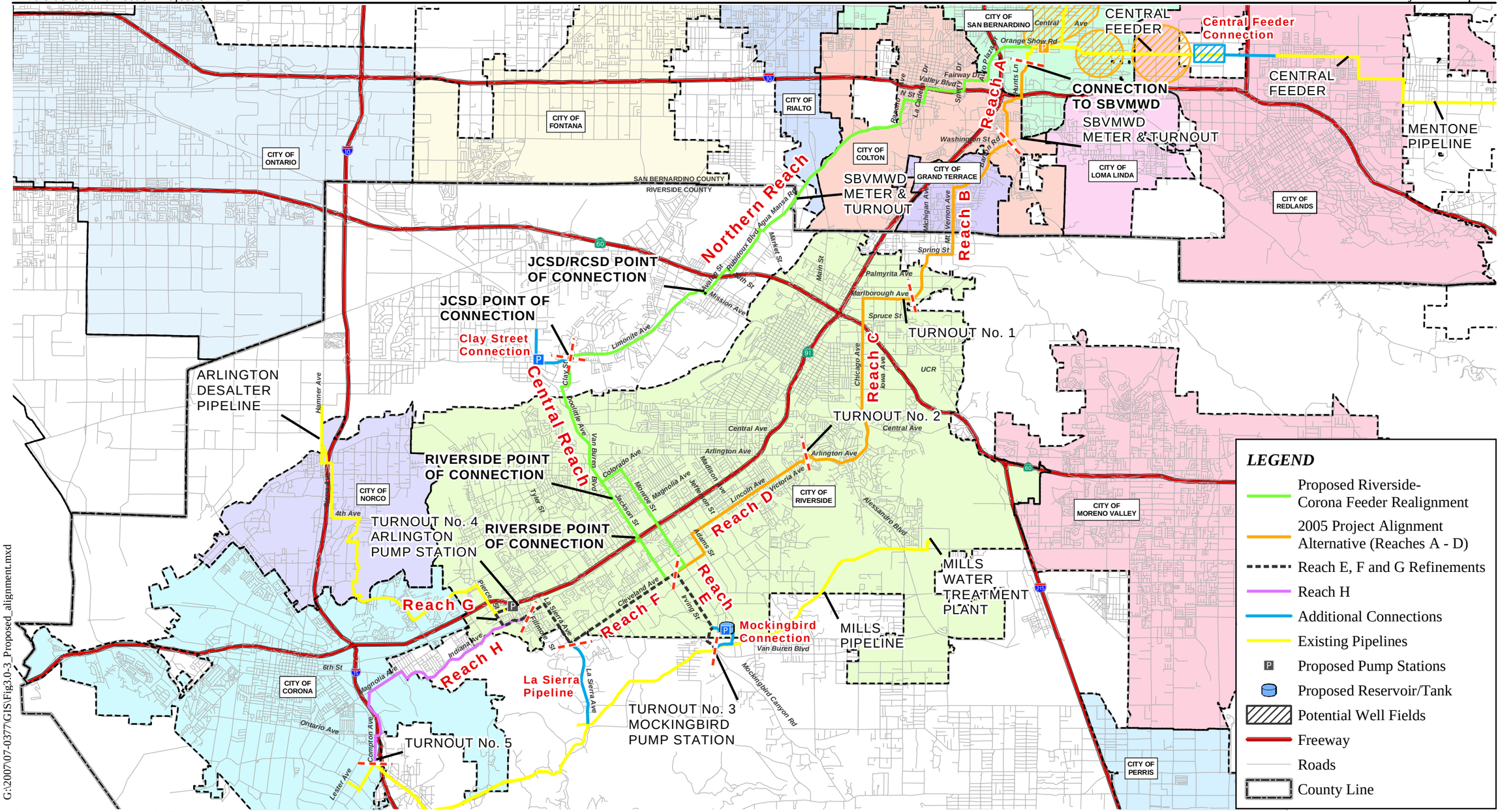


Figure 3.0-3
Proposed Project with Previous Alignment/Location

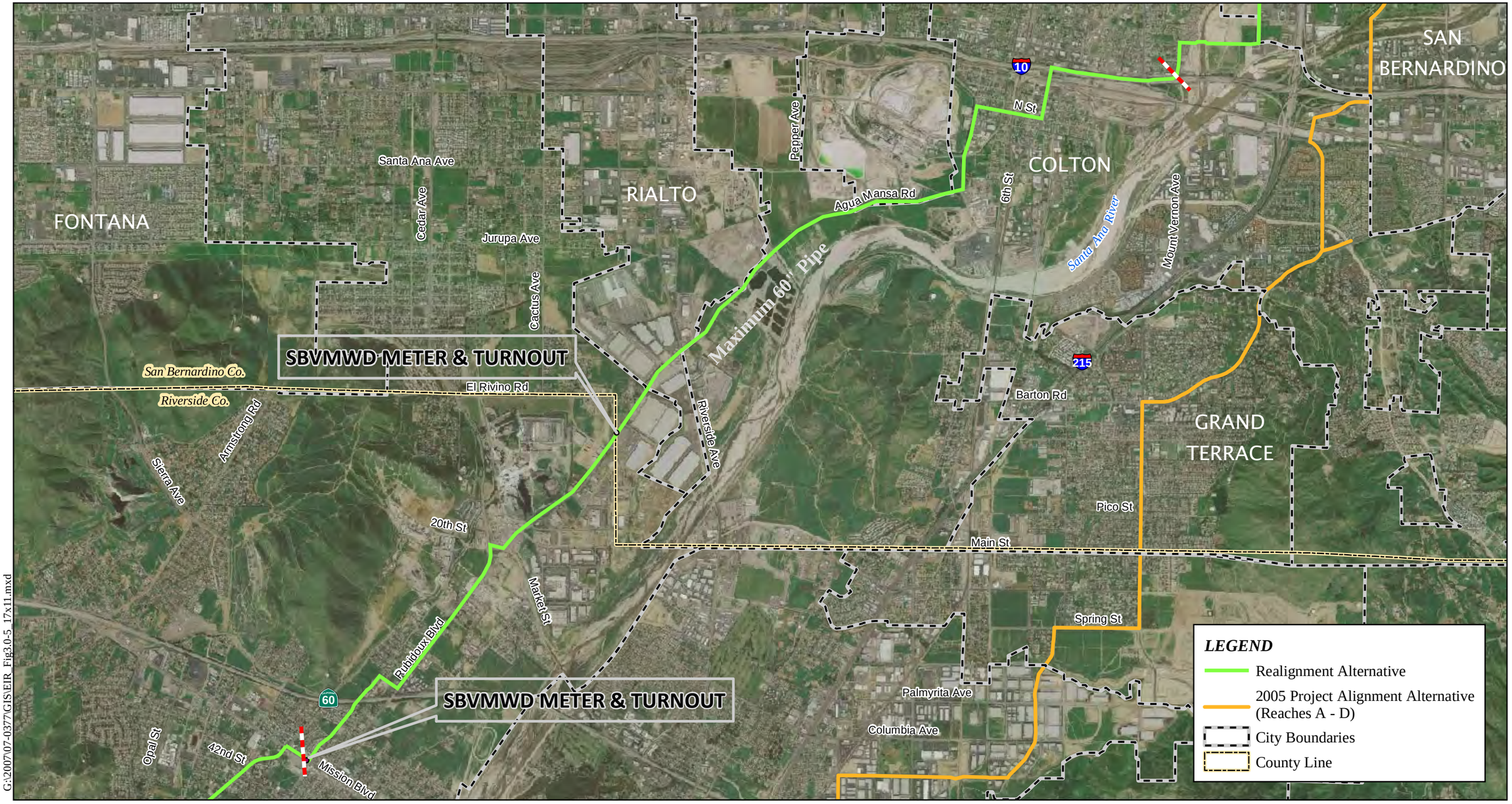
Table 3.0-C, Summary of Major Pipeline Crossings North to South

Project Reach	Crossing No.	Crossing Location	Description of Crossing	Approximate Crossing Width	Construction Method
North	1	Twin Creek Channel and Orange Show Rd.	Channel crossing	400 feet	Jack and bore
	2	Interstate 215 and Orange Show Rd.	Highway underpass	800 feet	Jack and bore
	3	Fairway Dr. and East Branch California Aqueduct	Underground pipe	20 feet	Open trench
	4	Fairway Dr. and Warm Creek	Channel crossing	300 feet	Jack and bore
	5	La Cadena Dr. and Interstate 10	Highway overpass	200 feet	Open trench
	6	UPRR and La Cadena Dr.	Railroad overpass	125 feet	Open trench
	7	UPRR and N St.	Railroad overpass	80 feet	Open trench
	8	UPRR and Rancho Ave.	Railroad crossing	80 feet	Jack and bore
	9	Riverside Canal and Agua Mansa Rd.	Channel crossing	40 feet	Jack and bore
	10	Agua Mansa Rd. and Rialto Channel	Channel crossing	40 feet	Jack and bore
	11	Agua Mansa Rd. and UPRR	Single railroad	80 feet	Jack and bore
	12	Highway 60	Highway underpass	400 feet	Jack and bore
	13	Flood control channel and Limonite Ave.	Channel crossing	40 feet	Jack and bore
	14	Limonite Ave. and MWD Aqueduct	Underground pipe	20 feet	Open trench
Central	15	Clay St. and UPRR	Railroad overpass	80 feet	Jack and bore
	16	Santa Ana River	River crossing	1,600 feet	Jack and bore
	16a	Van Buren Boulevard near Jurupa Avenue	Roadway	350 feet	Jack and bore
	17	Arlington and Van Buren culvert	Channel crossing	350 feet	Jack and bore
	18	Highway 91	Highway underpass	300 feet	Jack and bore
	19	Riverside Canal and Jackson St.	Canal crossing	40 feet	Jack and bore
	20	BNSF RR and Jackson St.	Railroad crossing	80 feet	Jack and bore
	21	Jackson St. and MWD Aqueduct	Underground Pipe	20 feet	Open trench
Central Reach Alternate Alignment	Alt. 18	Monroe St. and MWD Aqueduct	Underground Pipe	20 feet	Open trench
	Alt. 19	Highway 91	Highway overpass	300 feet	Open trench
	Alt. 20	BNSF RR and Monroe Street	Railroad overpass	80 feet	Open trench
	Alt. 21	Monroe St. and Riverside Canal	Channel crossing	40 feet	Jack and bore
Mockingbird Connection		Van Buren Blvd	Roadway	120 feet	Jack and bore



Sources: County of San Bernardino, 2009;
Digital Globe, 2008.

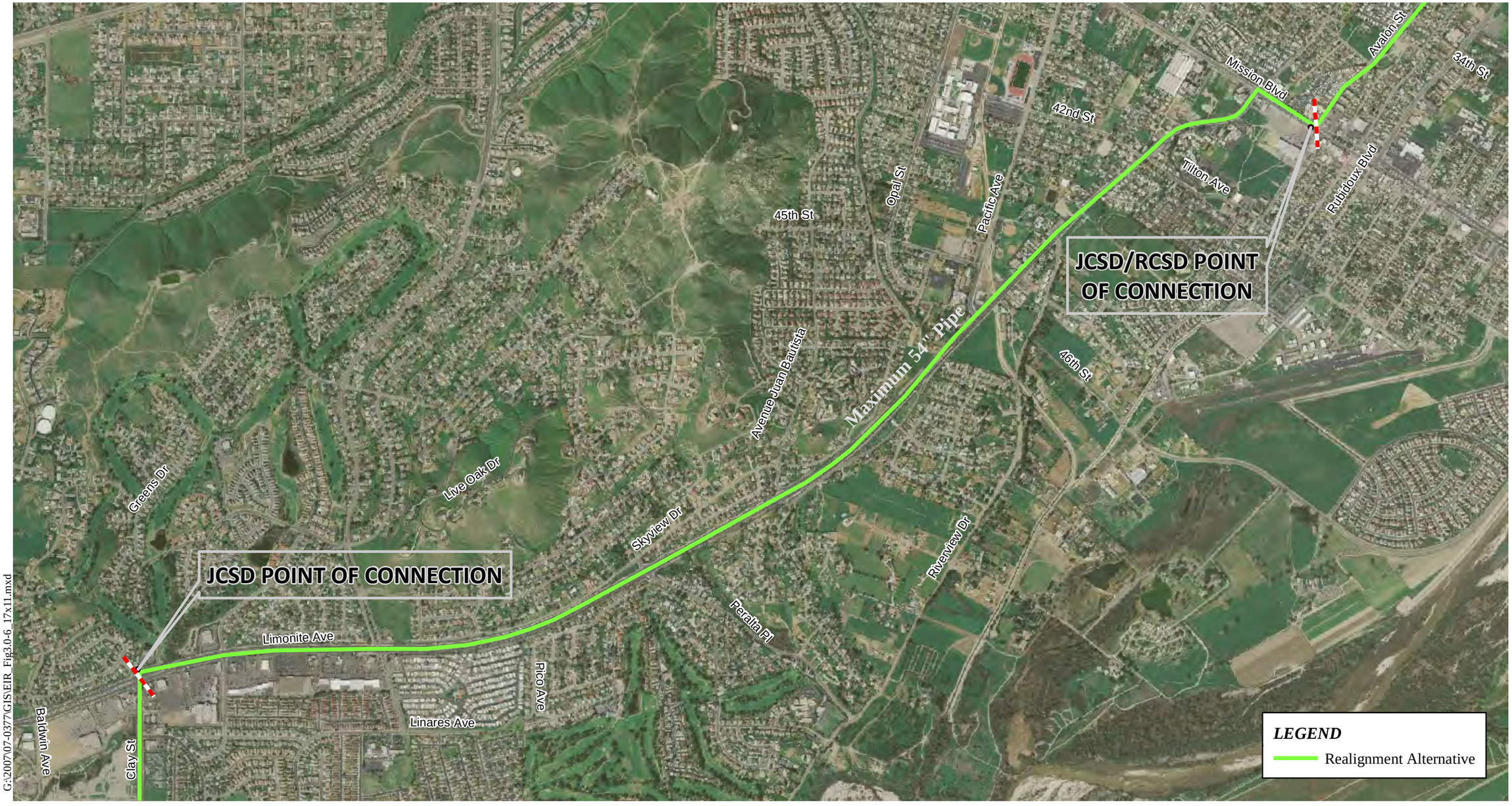
Figure 3.0-4
Northern Reach - Maximum 78-Inch Diameter Pipeline



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Sources: County of San Bernardino, 2009;
Digital Globe, 2008.

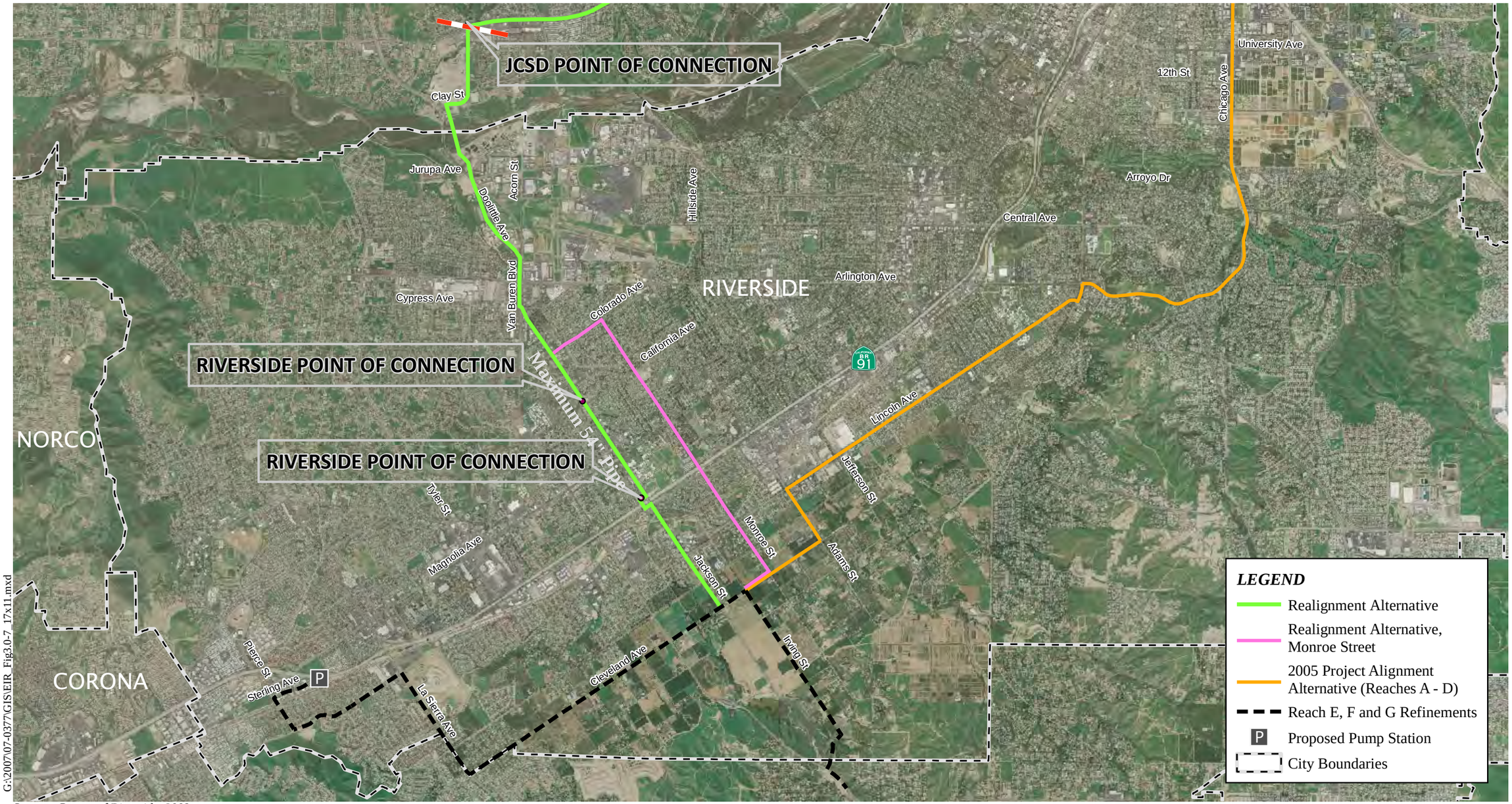
Figure 3.0-5
Northern Reach - Maximum 60-Inch Diameter Pipeline



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Sources: County of Riverside, 2009;
Digital Globe, 2008.

Figure 3.0-6
Northern Reach - Maximum 54-Inch Diameter Pipeline



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Source: County of Riverside, 2009; Digital Globe, 2008.

Figure 3.0-7
Central Reach - Maximum 54-Inch Diameter Pipeline

Central Reach (Jackson Street Option) – 31,575 linear feet of up to 54-inch pipeline

The Central Reach continues south in Clay Street and crosses under the Santa Ana River near Van Buren Boulevard. South of the Santa Ana River, the alignment crosses under Van Buren Boulevard to Doolittle Avenue and then to Van Buren Boulevard and continues south in Van Buren Boulevard. The alignment then traverses southeast in Jackson Street, west in Diana Avenue to Wilbur Street, then south under State Route 91. South of State Route 91, the alignment continues northeast in Indiana Avenue, then southeast in Jackson Street, and connects to the original 2005 Project Alignment near the intersection of Jackson Street and Cleveland Avenue (**Figure 3.0-7, Central Reach – Maximum 54-Inch Diameter Pipeline**). Boring techniques will be utilized where the RCF is proposed to cross under the Union Pacific rail line south of Linares Avenue, the Santa Ana River, Van Buren Boulevard near Jurupa Avenue, the intersection of Van Buren Boulevard and Arlington Avenue, State Route 91, the Riverside Canal, and the Burlington Northern Santa Fe rail line south of Indiana Avenue.

Central Reach (Monroe Street Option) – 36,855 linear feet of up to 54-inch pipeline

As an option to the Jackson Street portion of the realignment, the placement of a portion of the project within Monroe Street is also being considered at the request of the City of Riverside. The Monroe Street alignment would follow the above-described alignment from Van Buren Boulevard southeast in Jackson Street only to Colorado Avenue. At that point, the alignment will continue northeast in Colorado Avenue to Monroe Street, then southeast in Monroe Street, under the State Route 91, and continue to the intersection of Monroe Street and Cleveland Avenue. At that point, the alignment would continue southwest in Cleveland Avenue to connect with the approved 2005 Riverside-Corona Feeder alignment at the intersection of Cleveland Avenue and Irving Street (**Figure 3.0-7, Central Reach – Maximum 54-Inch Diameter Pipeline**). For this optional alignment, boring techniques may be utilized where the RCF is proposed to cross under the Riverside Canal, south of Indiana Avenue.

An additional portion (Reaches E, F, and G) of the 2005 Project Alignment was subsequently re-evaluated for realignment in the *Reaches E, F and G 2008 Refinement EIR*, and is included as part of this Alternative. Reaches E, F, and G were re-evaluated and Reaches F and G were refined slightly to provide connection to WMWD's Arlington Desalter Water Purification Facility. The Reaches E, F and G 2008 Refinement EIR incorporated the 2005 PEIR. Reaches E, F and G will be constructed in the following alignment which shall remain consistent for both realignment alternatives (**Figure 3.0-7**). Reach E is described under the 2005 Project Alignment Alternative, above. Reach F would start at the intersection of Cleveland Avenue and Irving Street and would follow Cleveland Avenue in a southwesterly direction to its intersection with La Sierra Avenue. It would then follow La Sierra Avenue in a northwesterly direction to its intersection with Indiana Avenue. It would turn southwesterly and follow Indiana Avenue to its intersection with Pierce Street. Reach G is a branch pipeline that connected the main RCF alignment to the existing Arlington Pump Station in Fillmore Street. This would be replaced by a new pump station located on Sterling Avenue which would be connected to the main RCF alignment via a branch alignment which would cross under the Arlington Channel in Pierce Street and follow Pierce northwesterly to its intersection with Sterling Avenue where it would turn easterly in Sterling to a new pump station to be located near WMWD's Arlington Desalter.

Boring techniques will be utilized to bore under rail lines and the Arlington Flood Control Channel. The pump station specifications are shown in **Table 3.0-D, Sterling Pump Station Facility**, below (Table 2-1 of the Reaches E, F, and G 2008 Refinement EIR). This pump station, due to its elevational relationship to the Mills Treatment Plant, has the capability to produce hydroelectricity, as shown in **Table 3.0-E, Sterling Hydro Station** (Table 2-2 of the Reaches E, F, and G 2008 Refinement EIR).

Table 3.0-D

STERLING PUMP STATION FACILITY

Location	On Sterling Avenue or extension of Sterling Avenue at Pierce St near the Arlington Desalter at 11615 Sterling Street
Foot Print	70 feet x 100 feet
Pump Lift	570 feet (from approx. 680 ft to 1250 ft USGS hydraulic grade line)
Horsepower at 75% efficiency	4000 horsepower at 45 cubic feet per second at 570 feet of lift

Table 3.0-E

STERLING HYDRO STATION

Location	Near the Arlington Desalter at 11615 Sterling Street
Foot Print	70 feet x 100 feet
Available Energy for Conservation	300 feet
Kilowatts Generated at 35% efficiency	265 kw at 30 cubic feet per second at 300 feet of head

Operations were assumed to be to the same as those analyzed in the 2005 Project Alternative.

Realignment Alternative with Additional Connections (Preferred Alternative)

The RCF Realignment Alternative with Additional Connections (Preferred Alternative) is the proposed project and includes the realignment of Reaches A through G from the 2005 Project Alignment, as described above for the Realignment Alternative. The realigned portion of this alternative is separated into two portions referred to as the Northern Reach and the Central Reach which are a realignment of Reaches A through D. The Northern Reach will span from the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino to the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County. The Central Reach will span from the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County to connect to the approved Riverside-Corona Feeder alignment near the intersection of Jackson Street and Cleveland Street in the City of Riverside. The project also proposes an optional alignment on a portion of the Central Reach. The optional alignment would change the proposed realignment between the intersection of Jackson Street and Colorado Avenue, in the City of Riverside, and the intersection of Cleveland Avenue and Irving Street, in the City of Riverside. This alternative includes a portion of Reach E, and F and G as analyzed in the 2008 Refinement EIR, and Reach H of the 2005 Project Alignment. Reaches E through H are analyzed for purposes of the EIS but are not required to be reanalyzed as part of the SEIR.

Operations of the Preferred Alternative would include the use of existing and/or new wells, as analyzed in the 2005 Project Alignment Final EIR, and/or the use of new wells analyzed as a part

of the Central Feeder Connection, described below. Up to a total of 20 wells could be used to properly manage water extractions associated with the RCF. Not all wells would operate at the same time; approximately 25 percent would be pumping at any one time. Wells may be located in the various well fields evaluated in the 2005 Project Alignment EIR and in the Central Feeder Connection area evaluated herein.

In addition, the Preferred Alternative includes facilities located within unincorporated San Bernardino and Riverside counties and the cities of Redlands and Riverside that would connect the RCF project to other regional facilities in ways that the other alternatives cannot. This provides for an added level of reliability for WMWD's water supply facilities.

Specifically, the Additional Connections would allow the operating option of avoiding all recharge to the Area of Historically High Groundwater (AHHG) and Newmark Cleanup area prior to pumping; tie into the Chino Desalter Phase 3 expansion to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin Dry-Year Yield Program via the Canal Street and La Sierra Pipeline Connection facilities; have additional operating options; and the ability to wheel water efficiently through WMWD's existing system via the Central Feeder Pipeline Connection and the Mills pipeline via the Mockingbird and La Sierra Connection facilities, as described below.

Central Feeder Connection

The Central Feeder Connection consists of approximately 6,350 linear feet of an up to 54-inch diameter pipeline located in the San Bernardino Avenue right-of-way between Alabama Street in unincorporated San Bernardino County and Webster Street in the City of Redlands. (**Figure 3.0-8, Central Feeder Connection**). Adjacent to the Central Feeder Pipeline are up to five new proposed 350 HP x 2,200 gallons per minute (GPM) groundwater production wells, including treatment facilities to meet drinking water standards, within the well field identified on **Figure 1.0-1** (exact locations not determined) which will be connected into the San Bernardino Valley Municipal Water District's Central Feeder Pipeline; thereby providing additional means for transporting San Bernardino Groundwater Basin water through regional pipeline facilities that are connected to the Riverside-Corona Feeder project. These five wells are included within the 20 total wells associated with the RCF.

In conjunction with the evaluation of the above Central Feeder facilities in this SEIR/EIS, proposed operations of the Central Feeder Connection were used as the framework for potential groundwater impacts during periods of drought and emergency periods. Analysis provided by Geoscience Support Services, Inc. in March 2010 was based on the following: the RCF is supported by, and fully consistent with, MWD's Integrated Resource Plan, the Santa Ana Watershed Project Authority's Integrated Watershed Plan, and the regional water planning efforts for the cities of Riverside, Norco, Corona, Elsinore Valley Municipal Water District, Jurupa Community Services District, Home Gardens County Water District, Lee Lake Water District and March Air Reserve Base. Groundwater modeling was performed to assess potential groundwater impacts that might result from the RCF including impacts to the Western Judgment and the Newmark Groundwater Superfund Site. See Sections 4.6 and 4.7 for detailed assumptions and results.



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Sources: Co. of San Bernardino, 2009; Digital Globe, 2008.

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Figure 3.0-8
Central Feeder Connection

Clay Street Connection

The Clay Street Connection is approximately 7,800 linear feet of pipeline, up to 48 inches in diameter, within unincorporated Riverside County; extending west within Limonite Avenue from the Limonite Avenue/Clay Street intersection, and then north in Pedley Road to 56th Street. This connection will allow the RCF project to connect to an existing Jurupa Community Services District (JCSD) waterline in 56th Street. Through this connection, the RCF project will be able to connect to JCSD's system, to tie into the Chino Desalter Phase 3 expansion, and to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin Dry-Year Yield Program. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction. (**Figure 3.0-9, Clay Street Connection**)

Mockingbird Connection

The Mockingbird Connection consists of approximately 5,900 linear feet of pipeline, up to 42 inches in diameter, located within street rights-of-way, and within pipeline easements within the City of Riverside and adjacent unincorporated Riverside County, a five million-gallon reservoir/tank and a related pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station. The pump station will include pumps and flow control facilities to convey water in either direction. (**Figure 3.0-10, Mockingbird Connection**) In addition to the crossings described in the Black & Veatch report, micro-tunneling or other boring techniques are proposed to install that portion of the Mockingbird Connection that crosses under Van Buren Boulevard.

The reservoir/tank has only a very preliminary design at this point, based on the siting study. The tank is proposed to be 20 to 32 feet in height and 206 to 163 feet in diameter. (A lower height requires a larger diameter and conversely, a taller tank requires a smaller diameter.) The top of the tank is not planned to be covered with dirt, however, all sides will be buried into the natural slope or covered with dirt and landscaped. The pump station which is also planned for the same lot as the tank will be within a 94' x 50' pump station building to be located on the previously approved residential pad that the City of Riverside has approved for this lot.

La Sierra Pipeline

The La Sierra Pipeline is approximately 10,800 linear feet of up to 42-inch diameter pipeline located within the La Sierra Avenue right-of-way in unincorporated Riverside County. The La Sierra Pipeline would extend south from the intersection of La Sierra Avenue and Cleveland Avenue to connect to the existing Mills Gravity Pipeline, located at the intersection of La Sierra Avenue and El Sobrante Road. This pipeline would provide an additional connection between Reach F of the RCF project and the Mills Gravity Pipeline. (**Figure 3.0-11, La Sierra Pipeline**)



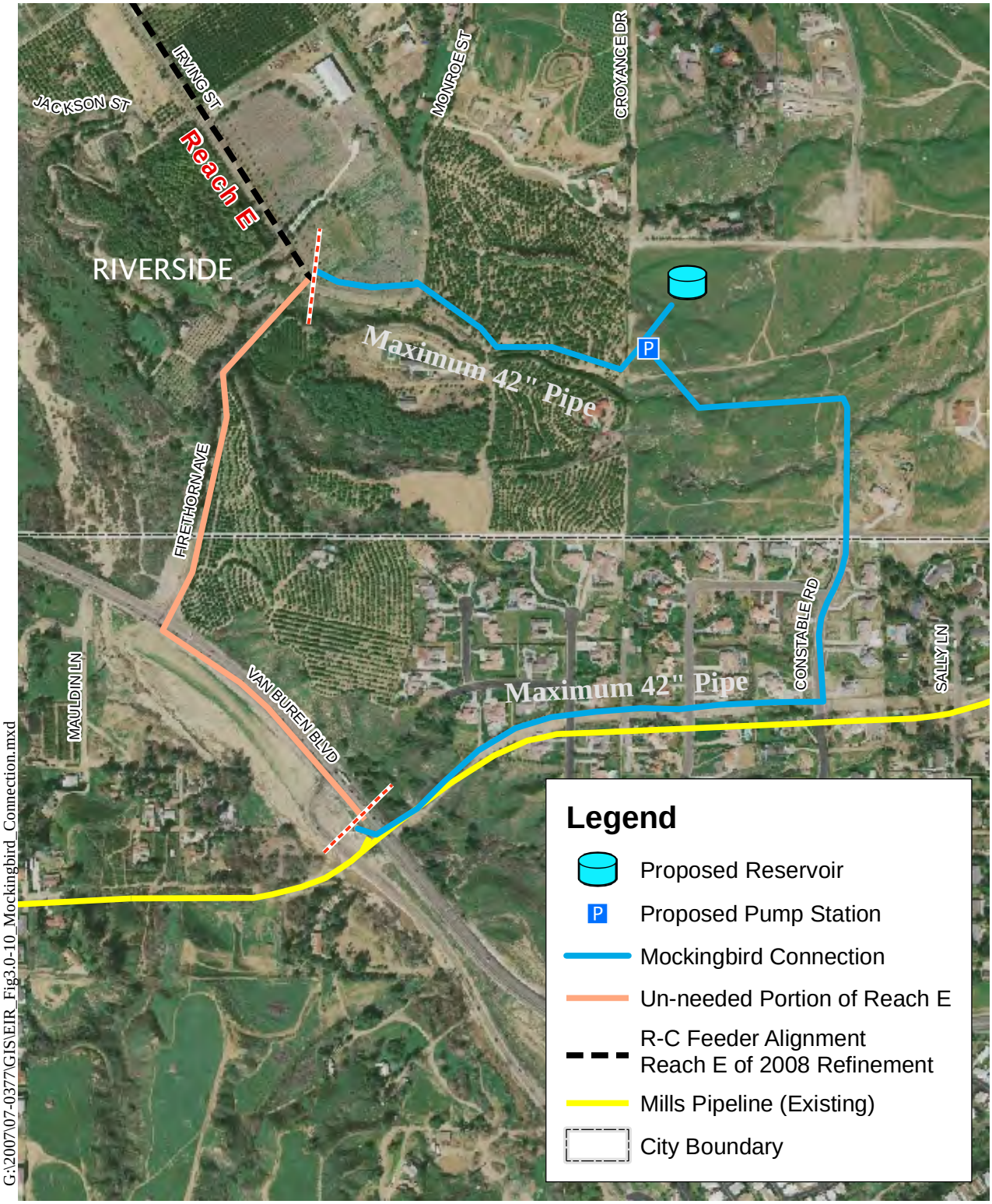
G:\2007\07-0377\GIS\EIR_Fig3.0-9_Clay_Street_Connection.mxd

Sources: Riverside County, 2009; Digital Globe, 2008.

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Figure 3.0-9
Clay Street Connection

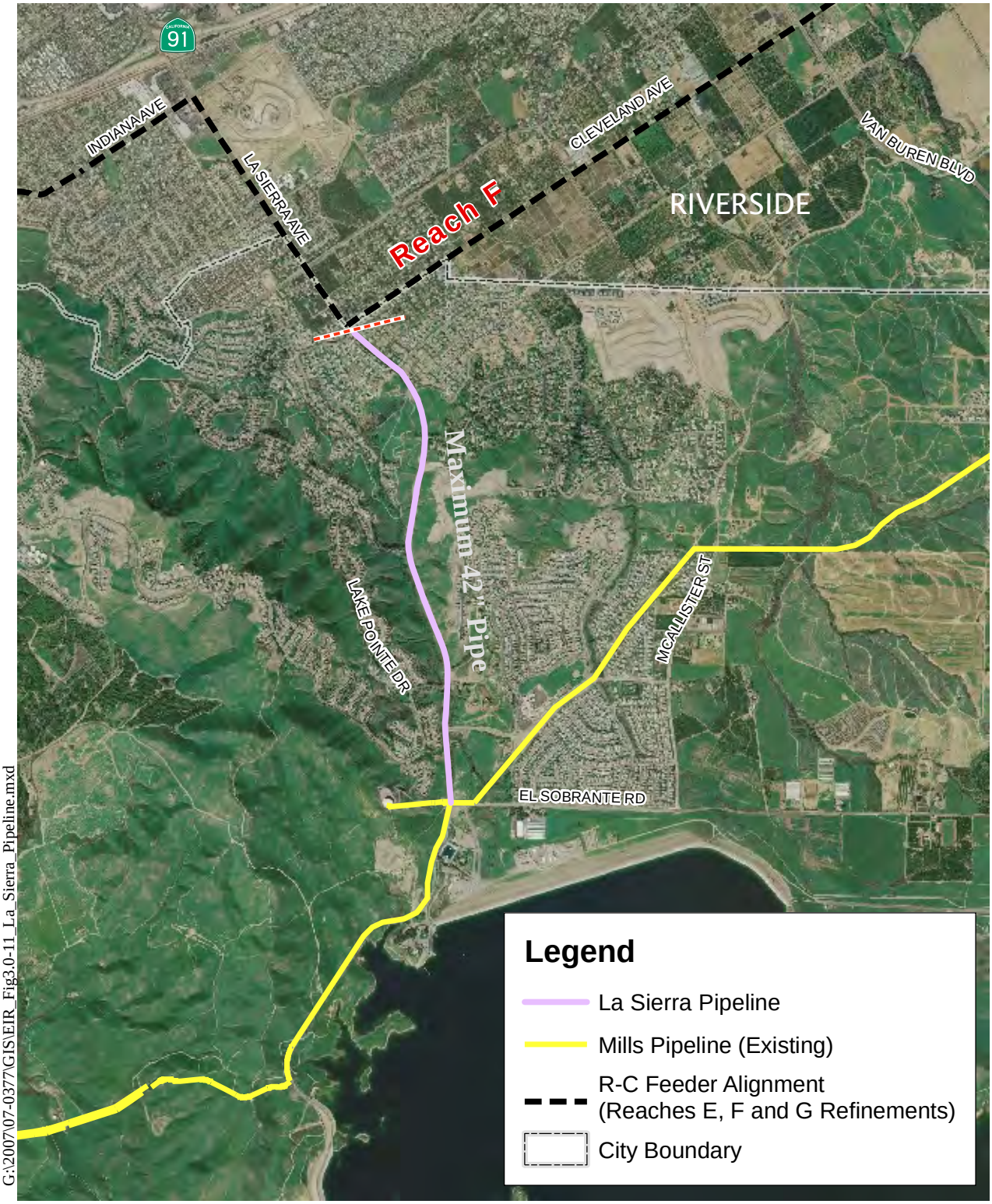


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Sources: Riverside County, 2009;
Digital Globe, 2008.

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Figure 3.0-10
Mockingbird Connection



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Sources: Riverside County, 2009;
Digital Globe, 2008.

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Figure 3.0-11
La Sierra Pipeline

3.8 PROJECT PHASING

The RCF will be constructed in operable phases and as funding becomes available. The project will begin within the next two years with the last phase potentially being started over ten years after project initiation. It is anticipated that phasing will occur as follows:

1. Reaches E, F, and G 2008 Refinement, Mockingbird Connection
2. Central Reach across the Santa Ana River and the Clay Street Connection
3. Central Feeder Connection and wells
4. Northern Reach, La Sierra Pipeline Connection, and Reach H

Exact construction phasing of the project is not known at this time. The construction of facilities that are included within any phase may occur concurrently, however, for this type of project, it is reasonable to assume a total of 205 construction days per year, which take into account delays due to weather, holidays, biological constraints and other interruptions of work.

It is anticipated that the construction of facilities within each phase will be a multi-year process. It is reasonable to assume that some percentage of multiple construction components and facilities can be constructed concurrently within a given year. For example, a logical set of facilities within Phase 2 which could be constructed within a year include the trenching of the Central Reach north of the Santa Ana River crossing, boring of the Central Reach crossing the Santa Ana River and any crossings northward, and complete construction of the Clay Street Connection facilities. Likewise, in Phase 1, the reservoir/tank and its associated pump station will likely be built in one year with a portion of the pipeline, while the other pump station and remaining pipeline would be constructed in a prior or subsequent year.

4.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

4.1 AESTHETICS/VISUAL

Potential impacts related to aesthetics were found to be less than significant in the Initial Study/NOP prepared for the Riverside-Corona Feeder (RCF) Pipeline Realignment (project) because although exposed surfaces, construction debris, and construction equipment may temporarily impact the aesthetic quality of the immediate area; the impacts would be short-term and would cease upon project completion. Additionally, the project will be constructed primarily within existing road rights-of-way and will be buried underground, and it is not located within a designated state scenic highway. (Appendix A). However, an additional connection facility (Mockingbird Connection) has been added to the project and includes a 5-million gallon reservoir and pump station on a hillside which has the potential to be visible from public areas. Aesthetics were addressed in Section II-1 (pp. II-1-1 through II-1-5) of the 2005 Certified Program EIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment), which are hereby incorporated by reference. The following discussion is a summary of the Aesthetics section of the 2005 PEIR and an evaluation of the tank site.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- City of Redlands Community Development Department, *1995 General Plan*, August 1995, As Amended on December 12, 1997. (Available at http://www.ci.redlands.ca.us/community/general_plan.htm, accessed on November 18, 2009.)
- City of Redlands, *Municipal Code*. (Available at http://www.ci.redlands.ca.us/community/municipal_code.htm, accessed on November 18, 2009.)
- City of Riverside Planning Department, *General Plan 2025*, November, 2007. City of Riverside Planning Department, *General Plan 2025*, November, 2007. (Available at http://www.riversideca.gov/planning/cityplans.asp, accessed on November 18, 2009.)
- County of Riverside, *Riverside County Integrated Project General Plan, County of Riverside*, Adopted October 7, 2003. (Available at http://www.rctlma.org/genplan/content/gp.aspx, accessed on November 18, 2009.)
- County of Riverside, *Ordinance No. 655, Regulating Light Pollution*. (Available at http://www.clerkoftheboard.co.riverside.ca.us/ords.htm, accessed on November 18, 2009.)
- County of Riverside, *Riverside County Planning Department – Design Guidelines Web Site.* (Available at

www.tlma.co.riverside.ca.us/planning/content/devproc/guidelines/design_guide.html, Accessed on November 18, 2009.)

- County of San Bernardino Land Use Services Department, *San Bernardino 2007 General Plan*, March 13, 2007. (Available at http://www.co.san-bernardino.ca.us/landuseservices/general_plan/Default.asp, accessed on November 18, 2009.)
- County of San Bernardino, *County Code*. (Available at http://www.sbcounty.gov/cob/otherServices.asp#G, accessed on November 18, 2009.)

4.1.1 Setting/Affected Environment

The proposed 2005 Project Alignment pipeline winds its way through the valley and hills. In addition to this natural landscape, most of the jurisdictions that the 2005 Project Alignment traverses are old established communities that may have mature street trees, agricultural windrows, or other landscaping that is mature and not easily replaceable from an aesthetic standpoint. Some of these jurisdictions or areas still maintain their sense of identity and aesthetic value from the existing historic citrus landscape which includes the citrus trees themselves, windrows of eucalyptus trees, and rows of palms that helped define the edges of groves and entries to home sites. The Realignment Alternative pipelines traverse more industrial and vacant areas than the 2005 Project Alignment. The Central Feeder Connection and the Clay Street Connection are located in open/vacant areas with surrounding development. The Mockingbird and La Sierra Pipeline Connections are located in the hilly areas along the southerly edge of the City of Riverside.

Manmade landscapes can have both aesthetic and cultural (historic) value and are categorized in two broad groups, "Designed Landscapes" and "Vernacular Landscapes." A Designed Landscape is a landscape that is consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. Public examples typically include parks, campuses, and street parkways and medians. A Vernacular Landscape is a landscape that evolved through use by the people whose activities shaped that landscape. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms. Examples include rural villages, industrial complexes, and agricultural landscapes.

Natural landscapes consist of areas with little human intervention that often support biological and surface water resources, and may also have aesthetic value. Within the areas traversed by the project alternatives, natural landscapes with some aesthetic value include the Santa Ana River, other washes which have not been channelized, and hillside areas in Riverside. The 2005 Project Alignment, the Central Feeder Connection, and the Mockingbird Connection are located in areas with natural, Designed and Vernacular landscapes. The City of Riverside has made an effort to preserve both street trees (designed landscapes) and the historic citrus landscape (vernacular landscapes) throughout its greenbelt area. Riverside's commitment to these aesthetic resources is reflected in its policies, ordinances, and staffing. Similar vernacular landscapes existed elsewhere along the 2005 Project Alignment in Grand Terrace and the County of Riverside's Highgrove area, and in the vicinity of the Mockingbird and Central Feeder Connections.

4.1.2 Summary of the 2005 Certified Program EIR for the Riverside-Corona Feeder Project

Design Considerations/Avoidance

The 2005 Project Alignment is primarily located within street rights-of-way. Since the exact location of the 2005 Project Alignment pipe within any given street will be determined as construction documents are prepared, it is not known whether the pipe will impact median, parkway, or parking lot landscaping and/or mature trees.

Potential Significant Impacts/Environmental Consequences

The NOP for the 2005 Certified PEIR determined that the 2005 Project Alignment would have no impact or a less than significant impact. In response to that NOP, a comment letter raised the issue of the potential loss of existing landscaping and mature street trees as a potentially significant aesthetic impact that could result from the proposed pipeline project. The focus of the analysis contained in the 2005 PEIR was related to such potential impacts.

***Threshold**: Substantially damage scenic/aesthetic resources, including, but not limited to, trees, rock outcroppings, and historic buildings.*

The 2005 Project Alignment will be located within road or utility rights-of-way and across some developed parking lots. This proposed alignment will not require the removal of any buildings or rock outcroppings. The project will not create impacts to these scenic resources.

Both Designed and Vernacular Landscapes are located within the potential impact area of the 2005 Project Alignment. In some places affected by the 2005 Project Alignment, landscaping is newer and immature. The simple replacement in-kind of such areas disturbed by the project construction would be sufficient to reduce aesthetic impacts to these areas to a less than significant level. A mature wood tree is considered to have a diameter of 8-10 inches or more at 4½ feet off the ground. A palm tree is considered to be mature at 25 feet or more in height.

Other landscaped areas that may be affected by the proposed pipeline construction are considered by the local jurisdiction within which they are located to be a significant aesthetic resource regardless of the age of the landscaping. Mature landscaping can be replaced, but its loss from an aesthetic point of view can be significant. Trying to save the existing plant material and/or replacing it with a greater number of plants to achieve a similar visual affect are common approaches to mitigating such impacts.

The most sensitive aesthetic resource that may be impacted by the 2005 Project Alignment is the Designed Landscaping along Victoria Avenue within the City of Riverside. The landscaping along this street is one of the primary reasons for its designation on the National Register of Historic Places. The 2005 Project Alignment includes the portion of Victoria Avenue between Arlington Avenue and Lincoln Avenue (approximately 900 linear feet). Loss of the historic landscape along Victoria Avenue would be considered significant both aesthetically and historically.

In addition, sensitive Vernacular Landscapes also exist adjacent to the proposed pipeline alignment. Such landscapes include palm rows and citrus trees within the California Citrus State Historic Park and other streets within the City of Riverside's Greenbelt area. Other jurisdictions that may have Vernacular Landscapes that include citrus trees and windrows adjacent to (sometimes within) road rights-of-way where this pipeline is proposed to be located include the County of Riverside in the Highgrove area and Grand Terrace.

Different types and ages of trees respond differently to construction within close proximity of their trunks. Palms have a very limited root structure and are more easily relocated than "wood" trees. Trenching closer than 8 feet of the closest face of a palm tree may be significant depending on the size and location of the palm. Trenching within 30 feet of the drip line of trees other than palms may be significant, depending on the species and age of the tree. Each tree and its related location, soil type, etc., can be affected differently by trenching and construction activities.

The Santa Ana River contains sensitive natural vegetation. At the proposed river crossing, the vegetation consists of a mix of riparian communities, including Southern Willow Scrub and Mule-fat Scrub. Loss of mature riparian vegetation within the Santa Ana River would be considered significant both aesthetically and biologically.

Loss or significant damage to existing Designed, Vernacular Landscapes, and/or natural riparian vegetation that function as scenic resources is considered significant.

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were adopted in the 2005 Certified PEIR to reduce potentially significant impacts related to aesthetics:

MM Aes 1: Plants and trees removed or damaged by the proposed project shall be replaced pursuant to the standards and requirements of each jurisdiction within which the loss or damage occurs.

MM Aes 2: The location of all existing mature trees, palms, and other landscaping shall be noted on the construction drawings that will be prepared for this project to facilitate review and proper permitting by the affected jurisdiction. Generally, a mature wood tree is considered to have a diameter of 8-10 inches or more at 4½ feet off the ground. A palm tree is considered to be mature at 25 feet or more in height. Citrus trees are mature when commercial levels of fruit-bearing occur at about 5 to 7 years.

MM Aes 3: If construction activities that require digging are located closer than eight feet from a mature palm, (over 25 feet in height) a certified arborist shall evaluate the specific palm(s) to determine if the palm can remain in place, be relocated successfully or if project redesign may be warranted. If the palm must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the palm(s) is/are located.

MM Aes 4: If construction activities that require digging are located closer than thirty feet from the drip line of a mature wood tree, a certified arborist shall evaluate the specific tree(s). The arborist will recommend the course of action most likely to preserve the tree including but not limited to trimming to help with stability, no action and the tree remains in place as is, project redesign, or the means to achieve a successful relocation. If the tree must be removed,

replacement shall be pursuant to the requirements of the jurisdiction within which the tree(s) is/are located.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the original Riverside-Corona Feeder alignment found that with the implementation of Mitigation Measures **MM Aes 1** through **MM Aes 4**, which are designed to evaluate and replace existing trees and landscaping, as appropriate, potential significant scenic/aesthetic impacts due to the loss of trees and landscaping will be reduced to less than significant levels.

4.1.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation to Proposed Realignment

The impacts and findings discussed in the 2005 PEIR related to aesthetics were specifically related to the 2005 Project Alignment. The proposed project will substitute a new alignment and additional connections and facilities for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR. The proposed realignment will avoid the potential impacts associated with construction within that portion of Victoria Avenue between Arlington Avenue and Lincoln Avenue (Reach D) and within the Highgrove area and the City of Grand Terrace (Reach B). Potential impacts related to crossing Victoria Avenue at Adams Street would be avoided at that location, but could occur when crossing Victoria Avenue along either Jackson Street or Monroe Street. Other described impacts related to Designed and Vernacular Landscapes will remain the same as described in the 2005 PEIR. The proposed Central Feeder Connection and Mockingbird Connection include similar landscape features as those described in the 2005 Project Alignment including citrus groves and palm rows. The 2005 PEIR remains adequate to address potential impacts related to aesthetics impacts to Designed and Vernacular Landscapes and the mitigation measures contained therein, as described above, will be applicable to the Realignment Alternative.

In addition, the Mockingbird Connection and Clay Street Connection include above-ground facilities, the location or appearance of which could result in potential significant adverse visual effects if not effectively screened or otherwise mitigated from view. The Mockingbird Connection includes a 5-million gallon reservoir (tank) and associated pump station. The Clay Street Connection includes a booster station with pumps, meters, flow control, and disinfection facilities. Therefore, the analysis conducted in this section of the SEIR/EIS will be provided to make the previous EIR adequate for the entire Riverside-Corona Feeder Project.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Western Municipal Water District's "Environmental Checklist" for the subject project (see Appendix A of this document) is used as a basis for the following thresholds and indicates that impacts related to aesthetics may be considered potentially significant if the project would:

- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway or substantially degrade the existing visual character or quality of the site and its surroundings.

Related Regulations

Each jurisdiction along the project alignment has its own unique rules governing the removal of or injury to street trees and other landscaping. The following summarizes each jurisdiction's requirements related to this issue.

City of Colton

The City of Colton General Plan includes an Open Space and Conservation Element that addresses the desire of the city to establish and maintain "street tree planting and landscaped medians." Title 12 of the City of Colton Municipal Code regulates the removal, trimming and disturbance of street trees, shrubs and plants in public streets, planting strips, parkways or alleys. All or some of Sections 12.20.040, 12.20.50, and 12.20.70 may apply to the proposed project. Generally these sections require that no person, firm or corporation maintaining any pipes or underground conduits shall trim, prune, plant, injure or interfere with any tree, shrub or plant upon any public street, planting strip, parkway or alley in the city without permission from the recreation and parks director. The recreation and parks director is authorized to grant a permit at his discretion, provided, however, such authority shall not arbitrarily be withheld. Tree replacement is not mandatory, but impacted existing landscapes will need to be address per city permit requirements.

City of Corona

The City of Corona General Plan does not designate any of the project-affected streets as Scenic Highways or Corridors, however, the Community Design and Scenic Highways Element does include "streets with ornamental landscaping, landscape medians and areas that contain "mature vegetation" as "other scenic resources" within the city. In the City of Corona, removal or replacement of trees next to streets requires a permit issued by the Parks and Community Services Department pursuant to Corona Municipal Code Section 12.22.070. The city requires the maintenance of replanted trees by the responsible party (WMWD) for a one-year period after planting. The proposed project will be required to address loss of street trees and important landscaping within the City of Corona pursuant to city policy.

City of Grand Terrace

The City of Grand Terrace's General Plan does not identify street trees or landscaping as an aesthetic resource within the city. Per personal communication with city staff (Grand Terrace) the city would simply require the replacement of like species of trees when the encroachment permit for work within the roadway is issued.

City of Redlands

Chapter 12.52 of the City of Redlands Municipal Code recognizes that "mature trees contribute to the long term aesthetic, environmental and economic benefits to the city. Aesthetically, trees offer dimensions in the form of color, shape, texture, scale and variety." The provisions of this chapter of the Municipal Code provide protection for native and specimen trees, landmark trees and public trees as defined in the chapter. Section 12.52.140 within this chapter states that no person shall remove a tree from a parkway or tree lawn for the purpose of construction, or for any other reason, without first being issued a permit from the city's public works director, the city's public works operations manager, or the city's public works director designee. This provision also requires the replacement of any removed trees.

City of Riverside

Victoria Avenue (the avenue), within the City of Riverside, is listed on the National Register of Historic Places and is a local City Historic Landmark. The portion of the avenue that is located between Arlington Avenue and Boundary Lane is the portion on the National Register. The City Landmark also includes the portion of the avenue between Arlington Avenue and Myrtle Avenue. One of the stated objectives of the city's general plan is to "Protect Victoria Avenue from any development or other potential changes contrary to its status as a major historic and community asset." (Objective LU-13) Policies contained in the general plan's Land Use Element are for the city to adopt strong measures to protect Victoria Avenue's signature landscaping (Policy LU-13.3) and to establish Victoria Avenue as a linear park (Policy LU-13.6). Additionally, the city's general plan provides policies to protect natural resources, such as geological features, heritage trees, and landscapes in the planning and development review process and in park and open space planning. (Policy HP-1.4); limit the extent and intensity of uses and development in areas of scenic vistas and arroyos (Policy OS-2.2); control the grading of land to limit the potential negative aesthetic impact of excessive modification of natural landforms (Policy OS-2.3); and to recognize the value of ridgelines, hillsides and arroyos as significant natural and visual resources (Policy OS-2.4). Based on these policies, tree replacement is not mandatory, but impacted existing landscapes will need to be address per city permit requirements which could include replacement and/or avoidance.

Federal Section 106 process for evaluating impacts to historic resources will be required for the portion of the project that impacts Victoria Avenue. Local review and approval must also be acquired from the City of Riverside Cultural Heritage Board with or without federal involvement. As stated in the Cultural Resources section of this EIR, the Secretary of the Interior is responsible for establishing professional standards and providing advice on the preservation of cultural resources listed in or eligible for listing in the National Register of Historic Places, including historic landscapes. The Secretary's Guidelines for the Treatment of Cultural

Landscapes are used by the City of Riverside to evaluate impacts and recommend project changes/mitigation for proposed projects that affect Victoria Avenue.
The state of California Department of Parks owns and operates the California Citrus State Historic Park located within the City of Riverside. The primary goal of this park is to preserve the citrus industry-related landscape and interpret it for the public. This park borders Irving Street, within which the proposed project will be located. State permits and approvals would have to be granted if the proposed project required the removal of the citrus and/or palm trees which line Irving Street.

City of San Bernardino

The City of San Bernardino General Plan includes the Urban Design for Public Spaces Element which addresses "the physical and visual character of the San Bernardino planning area [and] determines to a large degree the city's environmental quality of life and image." Policy 5.3.10 "require[s] that street trees be adequately maintained and replaced if removed due to damage or health." The proposed project will be required to address loss of street trees and important landscaping within the City of San Bernardino pursuant to this policy. City Public Works Department Encroachment Permit(s) for the construction will grant permission for removal and will likely require replacement "in-kind and –like" (same species and similar size) landscaping and street trees (San Bernardino). Potentially sensitive areas within San Bernardino may include mature trees in the vicinity of the Santa Ana River, and landscape/streetscape improvements around Hospitality Lane.

County of Riverside

The Riverside County General Plan, which establishes land use policies for the unincorporated portions of the County of Riverside, addresses aesthetics only in terms of "scenic resources" and "scenic corridors." The General Plan describes scenic resources as "areas visible to the general public and considered visually attractive. In addition to scenic corridors, described below, scenic resources include natural landmarks and prominent or unusual features of the landscape." "Scenic corridors" are roadway corridors along scenic highways, including State and county eligible and designated highways. Scenic vistas are described as "points, accessible to the general public, that provide a view of the countryside."

In 1988, the County of Riverside adopted Ordinance No. 655 regulating light pollution. Ordinance No. 655 establishes standards to limit light leakage in order to reduce interference with nighttime astrological observation and research conducted at the Mount Palomar Observatory. Ordinance No. 655 established two zones based on radial distance from the Mount Palomar Observatory, which is located in northern San Diego County. Zone A is defined as a circular area within a 15-mile radius of the observatory. Zone B includes the area between the 15-mile radius of Zone A and a circle with a 45-mile radius centered on the observatory. The RCF project is not located within 45 miles of the Mount Palomar Observatory and therefore is not subject to the lighting restrictions set forth in Ordinance No. 655.

The RCF project is located within Riverside County's First and Second Supervisorial Districts. The Riverside County Board of Supervisors has adopted "Countywide Design Standards and Guidelines" and "Design and Landscape Guidelines for Development in the Second

Supervisorial District." The guidelines encourage features such as consistency in design features of a neighborhood, articulation of building facades and roof planes, architectural design elements on facades of residences visible from the street or open space, multiple floor plans and elevations, variable front yard setbacks, and varied colors and materials. These design standards and guidelines apply to residential and commercial projects within unincorporated portions of Riverside County and therefore are not applicable to the RCF project.

County of San Bernardino

Policy OS 5.3 of the San Bernardino County General Plan states that the County "desires to retain the scenic character of visually important roadways throughout the County." A "scenic route" is defined as a roadway that has scenic vistas and other scenic and aesthetic qualities that over time have been found to add beauty to the County. None of the portions of the RCF project are located within the scenic roadways identified by the San Bernardino General Plan. It is noted that although a portion of San Bernardino Avenue within the Redlands sphere of influence is designated by this policy as a scenic route, that designated portion of San Bernardino Avenue is located east of the proposed Central Feeder Connection.

Chapter 88.01 of the San Bernardino County Code provides for plant protection and management. This chapter requires the issuance of a Tree or Plant Removal Permit for the removal of regulated trees and plants. Section 88.01.070 applies to native living trees with a six-inch or greater diameter or 19 inches in circumference measured four and one-half feet above natural grade, and to three or more palm trees in linear plantings which are 50 feet or greater in length within established windrows or parkway plantings. The latter are considered to be heritage trees by the County of San Bernardino. Based on these policies, tree replacement is not mandatory, but impacted existing landscapes will need to be address per County permit requirements which could include replacement and/or avoidance.

Design Considerations/Avoidance

In addition to pipelines, the proposed Mockingbird Connection includes a five million-gallon reservoir and a related booster station. The Mockingbird Connection's booster station consists of an approximately 4,700-square foot (50' x 94') 16-foot high block building located on a 21,000-square foot pad. The five million-gallon reservoir will range from 163 to 206 feet in diameter and from 20 to 32 feet in height. The reservoir is proposed to be buried by backfilling soil against the sides of the reservoir, in order to avoid potential visual impacts. The proposed Clay Street Connection includes an approximately 5,000-square foot booster station consisting of an approximately 16-foot high block building and related small structures for an electrical transformer, emergency generator and disinfection facilities.

Potential Significant Impacts/Environmental Consequences

***Threshold**: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway or substantially degrade the existing visual character or quality of the site and its surroundings.*

Realignment Alternatives

The Realignment Alternative consists of the Northern Reach, the Central Reach and Reaches E through H of the 2005 Project Alignment. The Realignment Alternative with Additional Connections (Preferred Alternative) also includes the four additional connections (Central Feeder Connection, Clay Street Connection, La Sierra Pipeline, and Mockingbird Connection) (**Figure 3.0-3**). Construction of the Northern Reach, the Central Reach, and Reaches E through H of the 2005 Project Alignment facilities and the pipeline components of the additional connections consist primarily of pipelines that will be constructed within existing paved rights-of-way or utility rights-of-way and across some developed parking lots. Jack and bore construction technique will be used for the Central Feeder crossing of the Santa Ana River and thereby avoiding visual impacts upon the Santa Ana River. Following completion, all of these pipelines will be located underground and therefore will have no impact upon the visual character or quality of the site and its surroundings. Additionally, these proposed pipelines will not require the removal of any buildings or rock outcroppings, except as described below.

The Mockingbird Connection includes the construction of a reservoir and related booster station in addition to proposed pipeline. The proposed reservoir and booster station would be located on Lot 20 of approved Tentative Tract No. 34059 in the City of Riverside. This lot includes granite outcroppings typical of those found throughout Tentative Tract No. 34059 and in the surrounding area. The proposed reservoir and booster station have the potential to require the removal of some of the outcroppings found on Lot 20, during construction activities. However, the outcroppings located on the project site have not been identified as significant scenic resources and therefore, the potential impact upon rock outcropping is considered to be less than significant.

The Mockingbird Connection is located within the City of Riverside. As noted above, the city's general plan contains policies that recognize the value of ridgelines, hillsides and arroyos as significant natural and visual resources and that control the grading of land to limit the potential negative aesthetic impact of excessive modification of natural landforms. The proposed Mockingbird Connection will place a reservoir and booster station on a hilly terrain.

The tank has only a very preliminary design at this point, based on the sighting study. The tank is proposed to be 20 to 32 feet in height and 206 to 163 feet in diameter. (A lower height requires a larger diameter and conversely, a taller tank requires a smaller diameter.) The top of the tank is not planned to be covered with dirt, however, all sides will be buried into the natural slope or covered with dirt and landscaped. The pump station which is also planned for the same lot as the tank will be within a 94' x 50' pump station building to be located on the previously approved residential pad that the City of Riverside has approved for this lot.

The hill on Lot 20 where the tank is proposed (at the 1,200-foot elevation) is not currently visible from very many public locations including streets in the vicinity and the California Citrus State Historic Park, as described in the following paragraph. The existing hill on Lot 20 may be visible from some private residences to the south in the Regency Ranch development, possibly from immediately adjacent residences on Irving Street, Monroe Street or Croyance Drive, and from homes located over three-quarters of a mile away and west of Van Buren Boulevard off Ridge

Road. The pump station site on Lot 20 is lower than the reservoir/tank site and would not be visible to most private homes in the area or any public streets.

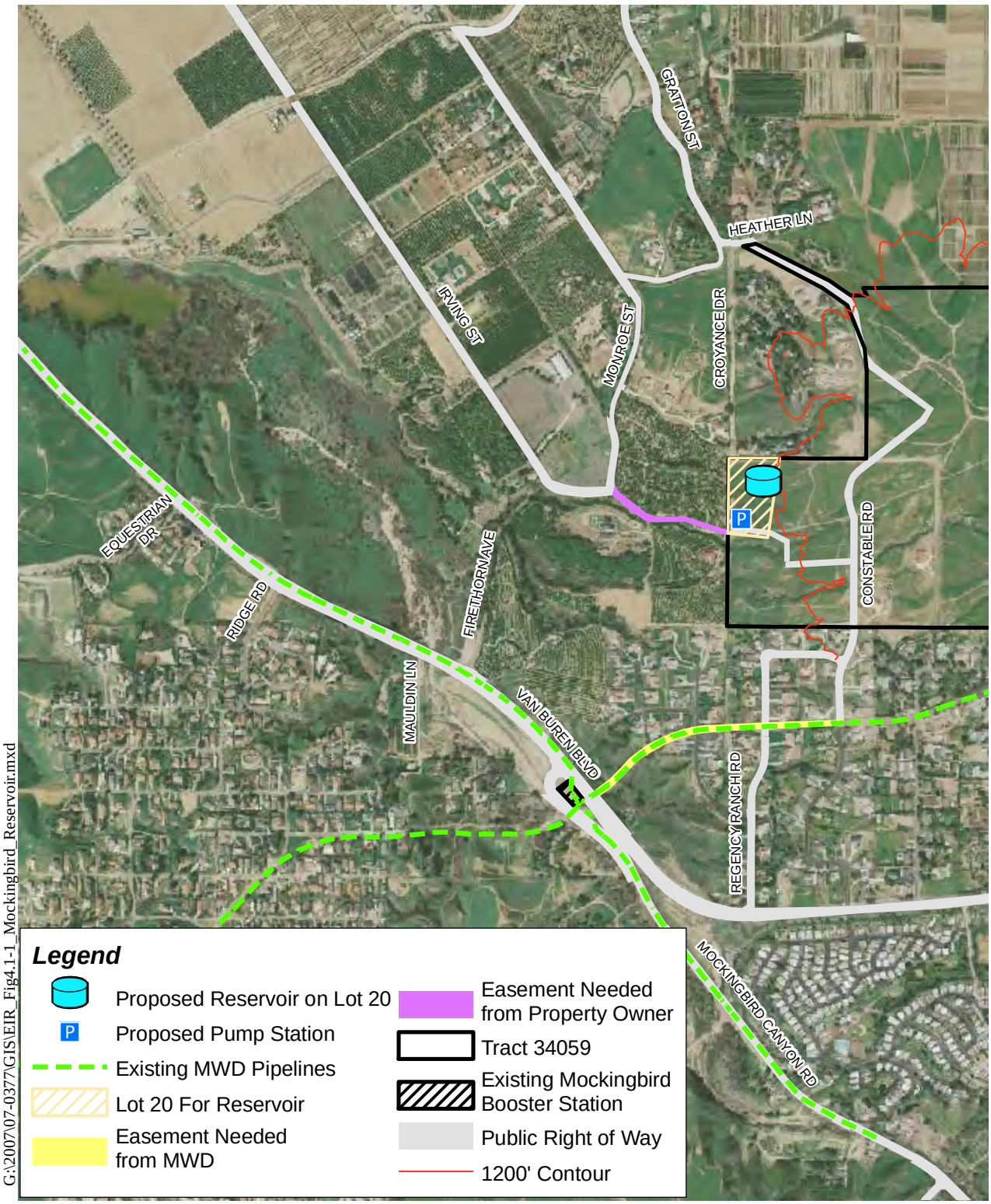
The proposed tank site is not visible from Van Buren Boulevard due to the elevation differences, citrus groves and intervening hills, except for a very short stretch in the vicinity of Equestrian Drive and Ridge Road; the distance from the site and intervening landscape features do not allow Lot 20 to hold a prominent place in the viewshed. (See **Figure 4.1-1, Mockingbird Reservoir Site**.) Other public streets in the area from which Lot 20 is not visible include: Firethorn Avenue, Monroe Street, Gratton Street, Heather Lane, Coteau Drive, and most of Irving Street. The top of the hill on Lot 20 is visible from about a 100-foot stretch of Irving Street southeast of Firethorn Avenue and from the existing terminus of Constable Road at the southern boundary of TT 34059.

The tank site is not visible from any portion of the Citrus State Historic Park that abuts Irving or Jackson Streets. The highest point in the park is located over 1 ¼-mile northwest of the tank site so intervening landscaping interrupts any possible views from what would be the best vantage point in the park.

If the tank were placed atop the existing hill (i.e. not buried or "at-grade") it would create a significant change in the aesthetics of the current setting without mitigation. In order to reduce the visual impact of the reservoir if it were placed at-grade, the reservoir will be buried into the hillside on the uphill side of the reservoir, and soil will be backfilled against any exposed sides of the reservoir in order to recreate a natural hillside appearance to the reservoir. This design feature, which is also required by mitigation measure **MM Aes 5**, will reduce the potential visual impacts of the reservoir to less than significant levels. Mitigation measure **MM Aes 6**, which require that above-grade facilities associated with pump/booster stations shall be enclosed and/or screened with landscaping, walls or fencing, will reduce the potential visual impacts of the booster station to less than significant levels.

The Clay Street Connection site is located within an area containing existing development and vacant properties. The potential booster station sites do not contain scenic resources. However, in order to reduce the potential visual impact of the booster station facilities upon surrounding properties, this facility will also be subject to the screening/landscaping requirements set forth in mitigation measure **MM Aes 6**.

The majority of the alternatives are not located within proximity to designated scenic highways. However, the southernmost portion of the proposed La Sierra Avenue Pipeline Connection is located within that portion of La Sierra Avenue shown on the Riverside County General Plan's Figure C-9 as a "County Eligible" scenic highway. Figure C-9 also shows Interstate 15, south of State Route 91, as a "State Eligible" scenic highway. That portion of Reach H of the 2005 Project Alignment located within the City of Corona parallels and crosses under Interstate 15. The facilities that will be constructed within these areas are pipelines and upon completion will not be visible from these eligible scenic highways.



G:\2007\07-0377\GIS\EIR_Fig4.1-1_Mockingbird_Reservoir.mxd

Sources: Riverside County, 2009; Digital Globe, 2008.

Figure 4.1-1
Mockingbird Reservoir Site

The most sensitive aesthetic resource that may be impacted by the Realignment Alternatives is the Designed Landscaping along Victoria Avenue within the City of Riverside. The landscaping along this street is one of the primary reasons for its designation on the National Register of Historic Places. The Realignment Alternatives will cross Victoria Avenue at its intersection with either Jackson Street or Monroe Street. Loss of the historic landscape along Victoria Avenue would be considered significant both aesthetically and historically. Additionally, the Realignment Alternative will Additional Connections also has the potential to impact citrus and palm trees located along the Mockingbird Connection. As noted above, these trees may be considered significant visual resources by the City of Riverside and/or California State Parks. Palm trees located along San Bernardino Avenue, which may be impacted by construction of the Central Feeder Connection are considered to be significant visual resources by the San Bernardino County and the City of Redlands.

The exact location of the project's pipelines within any given street will be determined as construction documents are prepared and therefore it is not known whether pipeline construction will impact visually important mature palm trees and/or wood trees. However, implementation of mitigation measures **MM Aes 1** through **MM Aes 4** will reduce potential impacts to less than significant levels.

Realignment Alternatives Proposed Mitigation Measures/Minimization

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

*As described above, the mitigation measures **MM Aes 1** through **MM Aes 4** set forth in the 2005 PEIR, are still applicable to the proposed RCF Pipeline Realignment at key locations. Mitigation measures **MM Aes 5** through **MM Aes 6** have been added by this SEIR to address potential impacts related to the proposed above-ground facilities associated with the four additional connection facilities (Central Feeder, Clay Street Mockingbird and La Sierra Pipeline). Mitigation measures AES-1 through AES-4 are mitigation measures established in the Reaches E, F, and G 2008 Refinement EIR. The measures below mitigate the same issues and provide a consolidated approach to mitigation for all the project alternatives. Thus, the MMs below indicate which measures from the Reaches E, F, and G 2008 Refinement EIR list are addressed by that MM. For example, MM Aes 1 is the same as AES-1, as indicated.*

MM Aes 1 (AES-1)**:** Plants and trees removed or damaged by the proposed project shall be replaced pursuant to the standards and requirements of each jurisdiction within which the loss or damage occurs.

MM Aes 2 (AES-2): The location of all existing mature trees, palms, and other landscaping shall be noted on the construction drawings that will be prepared for this project to facilitate review and proper permitting by the affected jurisdiction. Generally, a mature wood tree is considered to have a diameter of 8-10 inches or more at 4½ feet off the ground. A palm tree is considered to be mature at 25 feet or more in height. Citrus trees are mature when commercial levels of fruit-bearing occur at about 5 to 7 years.

MM Aes 3 (AES-3)**:** If construction activities that require digging are located closer than eight feet from a mature palm (over 25 feet in height) a certified arborist shall evaluate the specific palm(s) to determine if the palm can remain in place, be relocated successfully or if project redesign may be warranted. If the palm must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the palm(s) is/are located.

MM Aes 4 (AES-4)**:** If construction activities that require digging are located closer than thirty feet from the drip line of a mature wood tree, a certified arborist shall evaluate the specific tree(s). The arborist will recommend the course of action most likely to preserve the tree including but not limited to trimming to help with stability, no action and the tree remains in place as is, project redesign, or the means to achieve a successful relocation. If the tree must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the tree(s) is/are located.

MM Aes 5: To minimize the visual impact of a large reservoir/tank from public roads and hilltops in the vicinity, the Mockingbird Connection tank shall be buried and backfilled with dirt to where no more than three (3) feet of tank is visible. The top of the tank need not be buried, so as to allow for maintenance access. The disturbed and manmade slopes around the tank shall be stabilized and re-landscaped with a palette of plants consistent with the plant mix that is established as part of the revegetation requirements for the site, as determined by WMWD and the US Fish and Wildlife Service during Section 7 Consultation. Prior to the approval of grading plans, the grading and landscape plans for the reservoir/tank will be reviewed by WMWD and the City of Riverside.

MM Aes 6: To minimize the visual impact of above-grade facilities associated with pump/booster stations, all the pump/booster stations shall be enclosed and/or screened within a building, walls or fencing, and with landscaping. Prior to building plans, pump enclosure plans and landscape plans will be reviewed by WMWD.

Realignment Alternatives Determination of Significance under CEQA

With implementation of the mitigation measures listed above, potential significant environmental effects related to aesthetics will be reduced to less than significant levels.

4.1.4 No Project/Action Alternative

The No Project/Action Alternative will not construct any facilities and therefore will result in no change to the present visual environment.

4.2 AIR QUALITY/CLIMATE CHANGE

Potential impacts related to exposing sensitive receptors to substantial pollutant concentrations and production of objectionable odors were found to have less than significant impacts in the Initial Study/NOP prepared for this project (Appendix A). The focus of the following discussion is related to the project's consistency with applicable air quality plans, compliance with air quality standards, and cumulative increases of criteria air pollutants and greenhouse gases. The Air Quality Impact Analysis prepared for this project (Appendix C) evaluated whether the expected criteria air pollutant emissions generated as a result of construction and long-term operations (i.e., vehicle emissions) of the proposed project would cause significant impacts to air resources in the project area. The Air Quality Impact Analysis (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 resources. As recommended by SCAQMD staff, the URBEMIS 2007 for Windows version 9.2.4 computer program was used to quantify project-related emissions.

In addition to the 2005 Certified PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

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4.2.1 Setting/Affected Environment

The project alternatives are located within the boundaries of the cities of Colton, Corona, Grand Terrace, Redlands, Rialto, Riverside, and San Bernardino, and unincorporated areas of the counties of Riverside and San Bernardino.

The 2005 Project Alignment Alternative Includes Reaches A though H, with Reach A starting in San Bernardino and Reach H ending in Corona. The majority of this alternative is located within the City of Riverside (Reaches B through H).

The proposed Riverside-Corona Feeder Realignment Alternative separated into two portions referred to as the Northern Reach and the Central Reach, plus generally Reaches E through H of the 2005 Project Alignment. The Northern Reach will span from the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino to the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County. The Central Reach will span from the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County to connect to the approved Riverside-Corona Feeder alignment near the intersection of Jackson Street and Cleveland Street in the City of Riverside. The project also proposes an optional alignment on a portion of the Central Reach. The optional alignment would change the proposed realignment between the intersection of Jackson Street and Colorado Avenue, in the City of Riverside, and the intersection of Cleveland Avenue and Irving Street, in the City of Riverside.

The Realignment Alternative with Additional Connections (Preferred Alternative) includes all the facilities of the Realignment Alternative plus four additional facilities that include: the Central Feeder Connection, the Clay Street Connection, the Mockingbird Connection and the La Sierra Pipeline Connection.

The proposed project site lies within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (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 elevation, 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 generally lies within the terrain south of the San Bernardino Mountains, east of the Santa Ana Mountains, and west of the San Jacinto Mountains. The entire project area lies with the eastern portion of the Basin. The Jurupa Mountains are west of a portion of the alignment and the Pedley Hills are north of a portion of the alignment in the unincorporated Jurupa area of Riverside County; 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. The project site is located in a relatively flat to moderately sloped terrain, except in the drainage bottoms with no intervening hills or mountains of substantial size nearby to divert the prevailing winds.

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. Riverside averages 9 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.

Categories of Emission Sources

Air pollutant emissions sources are typically grouped into two categories: stationary and mobile sources. These emission categories are defined and discussed in the following subsections.

Stationary Sources

Stationary sources are divided into two major subcategories: point and area sources. Point sources consist of a single emission source with an identified location at a facility. A single facility could have multiple point sources located on-site. Stationary point sources are usually associated with manufacturing and industrial processes. Examples of point sources include boilers or other types of combustion equipment at oil refineries, electric power plants, etc. Area sources are small emission sources that are widely distributed, but are cumulatively substantial because there may be a large number of sources. Examples include residential water heaters; painting operations; lawn mowers; agricultural fields; landfills; and consumer products, such as barbecue lighter fluid and hair spray.

Mobile Sources

Mobile sources are motorized vehicles, which are classified as either on-road or off-road. On-road mobile sources typically include automobiles and trucks that operate on public roadways. Off-road mobile sources include aircraft, ships, trains, and self-propelled construction equipment that operate off public roadways. Mobile source emissions are accounted for as both direct source emissions (those directly emitted by the individual source) and indirect source emissions, which are sources that by themselves do not emit air contaminants but indirectly cause the generation of air pollutants by attracting vehicles. Examples of indirect sources include office complexes, commercial and government centers, sports and recreational complexes, and residential developments.

Air Pollution Constituents

Criteria Air Pollutants

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 ROG/VOC/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 4.2-A** and **Table 4.2-B**). The six criteria pollutants are: ozone, carbon monoxide, particulates less than 10 microns in size and particulates less than 2.5 microns in size, nitrogen dioxide, sulfur dioxide, and lead. The following is a further discussion of the *criteria pollutants*, as well as volatile organic compounds.

- **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, 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 nitric 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 (EPA 2005).
- **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 percent 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 in the area comes from dust (unpaved roads, unpaved yards, agricultural lands, and 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 (EPA 2005). 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 (EPA 2005). 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.

Greenhouse Gases and Climate Change

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, increase 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), chlorofluorocarbons (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 a report published by the California Energy Commission (CEC) in December 2006, transportation was responsible for 41 percent of the state's GHG emissions, followed by electricity generation for the most recent reporting year, 2004 (CEC 2006a). In November 2007, CARB reported that transportation was 38 percent of the state's GHG emissions, followed by electricity generation for 2004 (CARB 2007). Emissions of carbon dioxide (CO_2) and nitrous oxide (N2O) 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 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. 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 potential hundreds to thousands of times more effective than carbon dioxide. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, wastewater 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 climate change. 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 climate change 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.

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.

Many factors contribute to an area being at risk or structural fire in terms of the local fire departments' capabilities to control them, including the construction size and type, built-in protection, density of construction, street widths, and occupancy size. As stated in the Initial Study (Appendix A), the project area is located in a predominantly developed area within close

proximity to freeways with little to no wildland areas present. The proposed project site is not located within a designated hazardous fire area.

Due to its weather, topography, and native vegetation, nearly all 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.

Conservative estimates indicate the risk of large statewide wildfires, characterized as approximately 500 acres, 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 San Bernardino/Riverside metropolitan areas. The results the San Bernardino/Riverside 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 San Bernardino/Riverside 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 San Bernardino/Riverside metropolitan area residents to heat during the hottest summers (CEC 2006c).

Unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, global climate change 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). 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).

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 (MMTCO2e) 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 MMTCO2e.

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 entire project area is located within SCAQMD Source Receptor Area (SRA) 23 and SRA 34. SRA 23 encompasses the Riverside County portion of the Northern Reach and Central Reach while SRA 34 encompasses the portion of the Northern Reach within San Bernardino County. The most recent published data for SRA 23 and SRA 34 are presented in **Table 4.2-A** and **Table 4.2-B**. This data indicates that the baseline air quality conditions in the project area include occasional events of very unhealthful air. However, the frequency of smog alerts has dropped significantly in the last decade. Atmospheric concentrations of ozone and particulate matter are the two most significant air quality concerns in the project area. The yearly monitoring records document that prior to 1998, approximately one-third or more of the days each year experienced a violation of the state hourly ozone standard, with around ten days annually reaching first stage alert levels of 0.20 parts per million (ppm) for one hour. It is encouraging to note that ozone levels have decreased in the last few years with approximately one-fourth or less days each year experiencing a violation of the state hourly ozone standard since 1998. Locally, no second stage alert (0.35 ppm/hour) has been called by SCAQMD in the last twenty years. In fact, the last second stage alert was in 1988 in Upland.

The California Air Resources Board (CARB) established a new 8-hour average California ozone standard of 0.07 ppm, effective May 17, 2006. The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard of 0.08 ppm effective in June 2005. The federal 8-hour ozone standard was recently revised from 0.08 ppm to 0.075 ppm and became effective on May 27, 2008.

The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective in June 2005. The California NO_2 standards were amended and lowered the 1-hour standard from 0.25 ppm to 0.18 ppm and established a new annual standard of 0.030 ppm effective on March 20, 2008.

Monitoring for PM-2.5 did not begin until 1999. Since then, the annual standard has been consistently exceeded in SRA 23 and SRA 34. The 1997 federal annual average standard for PM-2.5 (15 $\mu g/m^3$) was upheld by the U.S. Supreme Court in February 2001. Effective in December 2006, the federal 24-hour PM-2.5 standard was revised from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. The state standard annual average standard for PM-2.5 (12 $\mu g/m^3$) was finalized in 2003 and became effective on July 5, 2003. Additionally, the federal annual PM-10 standard was revoked in December 2006.

Table 4.2-A, SRA 23 Air Quality Monitoring Summary – 1998–2007

	Pollutant/Standard Source: SCAQMD	Monitoring Year									
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. Days Exceeded	**Ozone:**										
	Health Advisory - 0.15 ppm	--	--	--	0	1	4	0	0	1	0
	California Standard:										
	1-Hour - 0.09 ppm	70	38	41	41	56	80	59	46	45	31
	8-Hour - 0.070 ppm [a]	--	--	--	--	--	--	75	62	59	69
	Federal Primary Standards:										
	1-Hour - 0.12 ppm	32	3	3	7	12	18	8	3	8	2
	8-Hour - 0.08 ppm (0.075 ppm)[a]	57	27	29	34	38	62	35	33	30	15(46)
	Max 1-Hour Conc. (ppm)	0.20	0.14	0.14	0.143	0.155	0.169	0.141	0.144	0.15	0.131
	Max 8-Hour Conc. (ppm)	0.17	0.11	0.113	0.120	0.124	0.140	0.117	0.129	0.116	0.111
No. Days Exceeded	**Carbon Monoxide:**										
	California Standard:										
	1-Hour - 20 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	1-Hour - 35 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Max 1-Hour Conc. (ppm)	6.0	7.0	5.0	5.0	8.0	5	4	3	3	4
	Max 8-Hour Conc. (ppm)	4.6	4.4	4.3	3.4	3.0	3.7	3.0	2.5	2.1	2.9
No. Days Exceeded	**Nitrogen Dioxide:**										
	California Standard:										
	1-Hour - 0.18 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Standard:										
	Annual Arithmetic Mean (ppm) [b]	0.023	0.026	0.024	0.025	0.024	0.022	0.017	0.022	0.020	0.021
	Max. 1-Hour Conc. (ppm)	0.10	0.13	0.10	0.15	0.10	0.09	0.09	0.08	0.08	0.07
No. Days Exceeded	**Sulfur Dioxide:**										
	California Standards:										
	1-Hour – 0.25 ppm	0	0	0	0	0	0	0	0	0	0
	24-Hour – 0.04 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	24-Hour – 0.14 ppm	0	0	0	0	0	0	0	0	0	0
	Annual Standard – 0.03 ppm [c]	No	No	No	No	No	No	No	No	No	No
	Max. 1-Hour Conc. (ppm)	0.03	0.03	0.11	0.02	0.02	0.02	0.02	0.02	0.01	0.02
	Max. 24-Hour Conc. (ppm)	0.010	0.011	0.041	0.011	0.002	0.012	0.015	0.011	0.004	0.002
No. Days Exceeded	**Suspended Particulates (PM10):**										
	California Standards:										
	24-Hour - 50 $\mu g/m^3$	42	46	68	78	81	62	72	69	71	66
	Federal Primary Standards:										
	24-Hour – 150 $\mu g/m^3$	0	1	0	0	0	2	0	0	0	0
	Annual Arithmetic Mean ($\mu g/m^3$) [d]	58.2	72.3	60.1	63.1	58.5	56.9	55.5	52.0	54.4	54.7
	Max. 24-Hour Conc. ($\mu g/m^3$)	116	153	139	136	130	164	137	123	109	118
No. Days Exceeded	**Suspended Particulates (PM2.5):**										
	California & Federal Primary Standards:										
	24-Hour – 65 $\mu g/m^3$ (35$\mu g/m^3$) [e]	--	9	11	19	8	8	5	4	1(32)	3(33)
	Annual Arithmetic Mean ($\mu g/m^3$) [f]	--	30.9	28.2	31.3	27.5	24.9	22.1	21.0	19.0	19.1
	Max. 24-Hour Conc. ($\mu g/m^3$)	--	111.2	119.6	98.0	77.6	104.3	91.7	98.7	68.5	75.7

Note: -- No data available.

a. 2004 is first year of SCAQMD records for state 8-hour Ozone standard. Federal 8-hour ozone standard 0.075 ppm effective May 27, 2008.

b. Federal NO_2 standard is AAM > 0.053; State NO_2 standard of AAM > 0.030 effective March 20, 2008.

c. Yes or No indicating whether or not the standard has been exceeded for that year.

d. Federal PM-10 standard is AAM> 50$\mu g/m^3$ was revoked December 17, 2006. State standard is AAM> 20$\mu g/m^3$, effective July 5, 2003.

e. 1999 is first year of SCAQMD records for federal 24-hour PM-2.5 standard and data summary. Threshold changed to 35$\mu g/m^3$ in 2006.

f. Federal PM-2.5 standard is annual average (AAM) > 15$\mu g/m^3$. State standard is annual average (AAM) > 12$\mu g/m$

Table 4.2-B, SRA 34 Air Quality Monitoring Summary – 1998–2007

	Pollutant/Standard Source: SCAQMD	Monitoring Year									
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. Days Exceeded	**Ozone:**										
	Health Advisory - 0.15 ppm	--	--	--	5	1	4	1	4	3	1
	California Standard:										
	1-Hour - 0.09 ppm	85	45	48	55	43	59	55	54	52	48
	8-Hour - 0.07 ppm [a]	--	--	--	--	--	--	58	58	57	74
	Federal Primary Standards:										
	1-Hour - 0.12 ppm	39	14	7	18	6	19	9	9	10	8
	8-Hour - 0.08 ppm (0.075 ppm)[a]	50	31	27	39	30	45	38	31	29	24(51)
	Max 1-Hour Conc. (ppm)	0.21	0.16	0.15	0.184	0.147	0.160	0.157	0.163	0.15	0.153
	Max 8-Hour Conc. (ppm)	0.18	0.13	0.125	0.144	0.113	0.137	0.130	0.129	0.127	0.121
No. Days Exceeded	**Carbon Monoxide:**										
	California Standard:										
	1-Hour - 20 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	1-Hour - 35 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Max 1-Hour Conc. (ppm)	6	5	5	4	5	5	4	4	3	4
	Max 8-Hour Conc. (ppm)	4.8	4.0	4.3	3.25	3.3	4.6	3.3	2.4	2.3	2.3
No. Days Exceeded	**Nitrogen Dioxide:**										
	California Standard:										
	1-Hour - 0.18 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Standard:										
	Annual Arithmetic Mean (ppm) [b]	0.034	0.036	0.033	0.030	0.029	0.027	0.026	0.026	0.025	0.025
	Max. 1-Hour Conc. (ppm)	0.11	0.14	0.10	0.11	0.11	0.10	0.12	0.08	0.09	0.08
No. Days Exceeded	**Sulfur Dioxide:[c]**										
	California Standards:										
	1-Hour – 0.25 ppm	0	0	0	0	0	0	0	0	0	0
	24-Hour – 0.04 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	24-Hour – 0.14 ppm	0	0	0	0	0	0	0	0	0	0
	Annual Standard – 0.03 ppm [d]	No	No	No	No	No	No	No	No	No	No
	Max. 1-Hour Conc. (ppm)	0.02	0.01	0.02	0.01	0.03	0.01	0.01	0.01	0.01	0.01
	Max. 24-Hour Conc. (ppm)	0.010	0.010	0.010	0.010	0.010	0.004	0.006	0.004	0.003	0.004
No. Days Exceeded	**Suspended Particulates (PM10):**										
	California Standards:										
	24-Hour - 50 μg/m^3	22	33	32	31	33	23	28	23	24	28
	Federal Primary Standards:										
	24-Hour – 150 μg/m^3	0	0	0	0	0	0	0	0	0	0
	Annual Arithmetic Mean (μg/m^3) [e]	48.3	56.5	50.1	52	50.4	44.9	48.6	42.3	46.0	51.4
	Max. 24-Hour Conc. (μg/m^3)	114	134	108	106	94	98	118	72	92	136
No. Days Exceeded	**Suspended Particulates (PM2.5):**										
	California & Federal Primary Standards:										
	24-Hour – 65 μg/m^3 (35μg/m^3) [f]	--	4	3	5	3	1	4	1	0(8)	3(11)
	Annual Arithmetic Mean (μg/m^3) [g]	--	25.7	25.4	26.2	25.7	22.2	22.0	17.4	17.8	18.3
	Max. 24-Hour Conc. (μg/m^3)	--	121.5	89.8	78.5	82.1	73.9	93.4	106.3	55.0	72.1

Note: -- No data available.

a. 2004 is first year of SCAQMD records for state 8-hour Ozone standard. Federal 8-hour ozone standard 0.075 ppm effective May 27, 2008.

b. Federal NO_2 standard is AAM > 0.053; State NO_2 standard of AAM > 0.030 effective March 20, 2008.

c. Central San Bernardino Valley 1 air monitoring station (SRA 34) data summaries used.

d. Yes or No indicating whether or not the standard has been exceeded for that year.

e. Federal PM-10 standard is AAM> 50μg/m^3 was revoked December 17, 2006. State standard is AAM> 20μg/m^3, effective July 5, 2003.

f. 1999 is first year of SCAQMD records for federal 24-hour PM-2.5 standard and data summary. Threshold changed to 35μg/m^3 in 2006.

g. Federal PM-2.5 standard is annual average (AAM) > 15μg/m^3. State standard is annual average (AAM) > 12μg/m

4.2.2 Summary of 2005 Certified Program EIR for Riverside-Corona Feeder Project

Design Considerations/Avoidance

In order to reduce impacts related to traffic circulation, biological resources, several major roadways and riparian areas will be tunneled or bored under during pipeline installation. Although the proposed boring/tunneling activities may produce slightly less PM-10 than open trenching, boring/tunneling is also more likely to generate more diesel exhaust than trenching due the type of equipment that will be required.

Potential Significant Impacts/Environmental Consequences

Air Quality was addressed in Section II-2 (pp. II-2-1 through II-2-26) of the 2005 Certified Program EIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment), which are hereby incorporated by reference. The following discussion is a summary of the Air Quality section of the 2005 PEIR.

Threshold: *Air quality impacts would be considered significant if project-generated emissions violate federal or state ambient air quality standards.*

The 2005 PEIR found that impacts related to short-term construction of the project would result in significant impacts as shown below. Long-term impacts from project operation were found to be less than significant as shown below.

Air quality impacts were divided into short-term and long-term impacts. Short-term impacts occur during site grading and project construction. Long-term air quality impacts occur once the project is in operation.

The short-term impacts included fugitive dust and other particulate matter, as well as exhaust emissions generated by earthmoving activities and operation of grading equipment during site preparation. Short-term impacts also included emissions generated during tank and pad construction, installation of the connecting piping and roadway paving as a result of equipment operation, operation of personal vehicles by construction workers, and asphalt off gassing.

Construction of the 2005 Project Alignment was divided into eight pipeline segments titled Reaches A through H. Because the pipeline was assumed to be constructed in phases, two construction scenarios were chosen for analysis based on worst-case conditions. These two scenarios analyzed were construction of Reaches A and C. They were determined to be the worst-case scenario for short-term emissions because these portions of the project include tunneling or boring operations and the largest diameters of pipeline segments. Reach A also includes construction of a pump station. Of the remaining reaches, Reach B was eliminated from analysis because it does not include tunneling or boring operations, Reaches D through E were eliminated from analysis because they are of smaller diameter pipe, shorter lengths, and do not include tunneling or boring operations. Reach H was eliminated from analysis because it is of much smaller diameter and includes boring only under the Gage Canal in one location.

Reach "A" of the project encompasses 8,000 linear feet of 72-inch diameter pipeline that will be constructed from the southerly terminus of the San Bernardino Valley Municipal Water District Baseline South Feeder, at a point on the north side of the Santa Ana River near the City of Riverside's Rice Thorne Pipeline where it intersects with the Warm Creek Bypass maintenance road in the City of San Bernardino. From that point the pipeline is proposed to be constructed south under the Santa Ana River utilizing micro-tunneling techniques within a 92-inch casing pipe. South of the Santa Ana River, Reach A will continue south through a commercial business park parking lot, south within the right-of-way of Hunts Lane, under Interstate 10, west on Steel Road to a point approximately 600 feet east of Interstate 215, south through an industrial park to Cooley Drive, south on Cooley Drive, southwesterly on Washington Street then east on Barton Road for approximately 1,100 feet where the pipeline will connect to the 100 CFS mainline meter facility on Barton Road located just east of Reche Canyon Road. The pipeline will be placed underground utilizing boring techniques where it will travel under Hospitality Lane, Interstate 10 and under the flood control facility located just west of Reche Canyon Road. Total micro-tunneling and conventional boring will encompass approximately 2,000 lineal feet. The remainder of the pipeline would be installed using conventional open trenching techniques. In addition, a proposed pump station will be constructed in a vacant lot near the intersection of Orange Show Road and Waterman Avenue in the City of San Bernardino as part of Reach "A." Micro-tunneling, excavation and conventional boring to install the pipeline will be done sequentially. The proposed pump station will be built concurrent with pipeline installation. The construction of the various components of Reach "A" can be summarized as follows:

If micro-tunneling techniques become infeasible due to geologic conditions under the Santa Ana River, open trench construction methods will be utilized for Reach A at the Santa Ana River crossing location.

Reach "C" of the project encompasses 29,000 lineal feet of 60-inch diameter pipeline. The easterly terminus of Reach "C" is located at the proposed Turnout No. 1 near the intersection of Rustin Avenue at Marlborough Avenue in the City of Riverside. From that point, construction of Reach "C" will progress west in Marlborough Avenue, extend south in Chicago Avenue, then west again in Arlington Avenue to the proposed Turnout No. 2 located near the intersection of Arlington Avenue at Hawarden Drive in the City of Riverside. Conventional boring techniques will be utilized to construct under the paved right-of-ways of Iowa Avenue, Interstate 215/State Route 60, Third Street, University Avenue, Martin Luther King Boulevard, and Central Avenue, as well as the Union Pacific rail line located just east of Chicago Avenue. The remainder of Reach "C" will be constructed using typical excavation construction methods. Boring and excavation will be done sequentially.

Boring will be required along approximately 1,900 lineal feet of the pipeline in Reach "C." Casings 84-inches in diameter will be used to encase the pipeline. Boring techniques reduce surface disturbance to areas around each end of the operation. Surface disturbance will include stockpiles of spoils, spoil removal activities, and equipment and materials storage. Ancillary equipment required of the operation includes an electric motor powered hydraulic pumps, an articulating crane, electric generator sets, a front end loader, and haul trucks to remove the spoils. Work crews connected with boring operation typically work 24-hours a day until the boring

operation is completed. Removal of the spoils can be limited to daylight hours provided there is room on-site to stockpile the spoils.

Tables 4.2-C and 4.2-D summarize the results from construction of Reach A as the project is proposed including tunneling under the Santa Ana River. Evaluation of Reach A includes two scenarios: 1) proposed tunneling under the Santa Ana River would occur simultaneously with pump station construction and 2) excavation for pipeline installation will occur simultaneously with Pump Station Construction. Two scenarios were also evaluated for construction activities for Reach C: 1) emissions related to boring activities and 2) emissions related to excavation for pipeline installation. Evaluation results from construction of Reach "C" using excavation and boring techniques are summarized in **Tables 4.2-E** and **4.2-F**, respectively.

Table 4.2-C
Estimated Short-Term Emissions – Reach A Scenario 1 - Tunneling/Boring for Pipeline Installation and Concurrent Pump Station Construction

Pollution Source	NO_X	CO	ROC	SO_X	PM-10
Grading and Boring/Tunneling Activities	NG[1]	NG[1]	NG[1]	NG[1]	6.99
Mobile Off-road Construction Equipment	183.29	73.24	19.86	16.68	13.23
Heavy-duty Truck trips	65.13	48.73	5.88	0.72	1.64
Commuting Traffic	0.64	1.22	0.46	NG[1]	0.12
Stationary Equipment	480.02	293.71	53.46	52.52	26.73
Asphalt Paving	NG[1]	NG[1]	0.52	NG[1]	NG[1]
Architectural Coatings	NG[1]	NG[1]	9.76	NG[1]	NG[1]
Maximum Daily Emissions (lbs/day)	729.08	416.90	89.95	69.92	48.71
Emissions Totals[3] (tons/quarter)	23.70	13.55	2.92	2.27	1.58
SCAQMD Thresholds	100 lbs/day 2.5 tons/qtr	550 lbs/day 24.75 tons/qtr	75 lbs/day 2.5 tons/qtr	150 lbs/day 6.75 tons/qtr	150 lbs/day 6.75 tons/qtr

Notes: [1] Criteria pollutants that have estimated negligible values are designated NG (negligible emissions).
[2] CO emissions for stationary and mobile equipment were calculated from the CEQA Air Quality Handbook
[3] Quarterly emission totals for all criteria pollutants reflect 65 workdays per quarter of construction activity. See Appendix B for model output report.

Table 4.2-D
Estimated Short-Term Emissions-Reach A Scenario 2 – Excavation for Pipeline Installation and Concurrent Pump Station Construction

Pollution Source	NO_X	CO	ROC	SO_X	PM-10
Grading and Excavation	NG[1]	NG[1]	NG[1]	NG[1]	6.99
Mobile Off-road Construction Equipment	619.12	269.66	65.92	49.55	39.65
Heavy-duty Truck trips	61.72	45.01	5.45	0.68	1.56
Commuting Traffic	0.64	1.22	0.46	NG[1]	0.12
Stationary Equipment	113.91	70.34	12.91	11.03	6.48
Asphalt Paving	NG[1]	NG[1]	0.57	NG[1]	NG[1]
Architectural Coatings	NG[1]	NG[1]	9.76	NG[1]	NG[1]
Maximum Daily Emissions (lbs/day)	795.39	386.23	95.07	61.26	54.80
Emissions Totals[3] (tons/quarter)	25.85	12.55	3.09	1.99	1.78
SCAQMD Thresholds	100 lbs/day 2.5 tons/qtr	550 lbs/day 24.75 tons/qtr	75 lbs/day 2.5 tons/qtr	150 lbs/day 6.75 tons/qtr	150 lbs/day 6.75 tons/qtr

Notes: [1] Criteria pollutants that have estimated negligible values are designated NG (negligible emissions).
[2] CO emissions for stationary and mobile equipment were calculated from the CEQA Air Quality Handbook
[3] Quarterly emission totals for all criteria pollutants reflect 65 workdays per quarter of construction activity. See Appendix B for model output report.

Table 4.2-E
Estimated Short-Term Emissions – Reach C Scenario 1 – Boring For Pipeline Installation

Pollution Source	NO_X	CO	ROC	SO_X	PM-10
Grading and Excavation	NG[1]	NG[1]	NG[1]	NG[1]	27.25
Mobile Off-road Construction Equipment	76.19	32.14	8.78	6.63	6.04
Heavy-duty Truck trips	32.39	26.48	3.09	0.36	0.81
Commuting Traffic	0.64	1.22	0.46	NG[1]	0.12
Stationary Equipment	432.00	264.00	48.00	48.00	24.00
Maximum Daily Emissions (lbs/day)	541.22	323.84	60.33	54.99	58.22
Emissions Totals[3] (tons/quarter)	17.59	10.52	1.96	1.78	1.89
SCAQMD Thresholds	100 lbs/day 2.5 tons/qtr	550 lbs/day 24.75 tons/qtr	75 lbs/day 2.5 tons/qtr	150 lbs/day 6.75 tons/qtr	150 lbs/day 6.75 tons/qtr

Notes: [1] Criteria pollutants that have estimated negligible values are designated NG (negligible emissions).
[2] CO emissions for stationary and mobile equipment were calculated from the CEQA Air Quality Handbook
[3] Quarterly emission totals for all criteria pollutants reflect 65 workdays per quarter of construction activity. See Appendix B for model output report.

Table 4.2-F
Estimated Short-Term Emissions – Reach C
Scenario 2 – Excavation for Pipeline Installation

Pollution Source	NO_X	CO	ROC	SO_X	PM-10
Grading and Excavation	NG[1]	NG[1]	NG[1]	NG[1]	1.21
Mobile Off-road Construction Equipment	512.02	228.56	54.84	39.50	32.46
Heavy-duty Truck trips	36.13	26.29	3.20	0.40	0.91
Commuting Traffic	0.64	1.22	0.46	NG[1]	0.12
Stationary Equipment	65.89	40.63	7.45	6.51	3.75
Asphalt Paving	NG[1]	NG[1]	0.05	NG[1]	NG[1]
Maximum Daily Emissions (lbs/day)	614.68	296.70	66.00	46.41	38.45
Emissions Totals[3] (tons/quarter)	19.98	9.64	2.15	1.51	1.25
SCAQMD Thresholds	100 lbs/day 2.5 tons/qtr	550 lbs/day 24.75 tons/qtr	75 lbs/day 2.5 tons/qtr	150 lbs/day 6.75 tons/qtr	150 lbs/day 6.75 tons/qtr

Notes: [1] Criteria pollutants that have estimated negligible values are designated NG (negligible emissions).
[2] CO emissions for stationary and mobile equipment were calculated from the CEQA Air Quality Handbook
[3] Quarterly emission totals for all criteria pollutants reflect 65 workdays per quarter of construction activity. See Appendix B for model output report.

Evaluation of **Tables 4.2-C** through **4.2-F** indicates that projected NO_X emissions are above the SCAQMD recommended daily and quarterly thresholds in both Reaches "A" and "C" and ROC emissions are above the SCAQMD recommended daily and quarterly thresholds during construction of Reach A only. The primary sources of NO_X and ROC emissions are the mobile construction equipment, diesel powered electric generator, and heavy-duty diesel trucks. Exceedance of these thresholds is considered significant without mitigation.

To determine the impacts that would result from open trenching across the Santa Ana River, a brief comparative analysis was made between the two possible construction methods. The air quality impacts that result from the 900-foot crossing constructed using micro-tunneling versus open cut excavation construction techniques are compared below. All applicable construction assumptions from the 2003 Air Quality Impact Analysis report were used for the following analysis.

Construction emissions were estimated using the tables for construction of Reach A found in Appendix A of the 2003 Air Study. **Tables 4.2-G and 4.2-H** summarize the daily and quarterly emissions from either microtunneling or excavation of the section of pipe described above.

Table 4.2-G
Estimated Maximum Daily Construction Emissions – Tunneling vs. Excavation of Santa Ana River

Emission Threshold	ROG	NO_X	CO	SO_X	PM-10
Daily Threshold (lbs/day)	**75**	**100**	**550**	**150**	**150**
Microtunneling	61.02	547.96	326.47	55.07	58.34
Excavation	66.10	614.27	295.80	46.41	38.39
Change [1]	+5.08	+66.31	-30.67	-8.66	-19.95

[1] The 2003 Air Quality Impact Analysis assumed this section of pipe would be constructed using microtunneling. Since the other construction assumptions used are still valid, the only difference in amount of emissions would be due to excavation of the 900 feet section of pipeline. Therefore, the change in emissions using excavation would represent the maximum amount of reduction or increase in the daily construction emissions.

Table 4.2-H
Estimated Maximum Quarterly Construction Emissions – Tunneling vs. Excavation of Santa Ana River

Emission Threshold	ROG	NO_X	CO	SO_X	PM-10
Quarterly Threshold (tons/qtr)	**2.5**	**2.5**	**24.75**	**6.75**	**6.75**
Microtunneling [1]	1.37	12.33	7.35	1.24	1.31
Excavation [2]	0.40	3.69	1.96	0.33	0.23
Change [3]	-0.97	-8.64	-5.39	-0.91	-1.08

[1] Microtunneling will occur at about 20' - 30' per day, therefore a 900' section of pipeline will take about 30 – 45 days to complete. Thus quarterly emissions were calculated using 45 days per quarter.

[2] Excavation will occur at about 80' per day, therefore a 900' section of pipeline will take about 12 days to complete. Thus quarterly emissions were calculated using 12 days per quarter.

[3] The 2003 Air Quality Impact Analysis assumed this section of pipe would be constructed using microtunneling. Since the other construction assumptions used are still valid, the only difference in amount of emissions would be due to excavation of the 900 feet section of pipeline. Therefore, the change in emissions using excavation would represent the maximum amount of reduction or increase in the quarterly construction emissions.

The maximum daily emissions of ROG and NO_X are higher for microtunneling, while maximum daily emissions of CO, SO_X, and PM-10 are higher for excavation. However, the maximum quarterly construction emissions for microtunneling are larger than for excavation due to the longer time required for microtunneling.

Comparison of project emissions from construction of the 900-foot Santa Ana River crossing (**Table 4.2-I**, below) shows that even with the changes in amounts of emissions of excavation versus microtunneling, the significance of air quality impacts have not changed with NO_X remaining above threshold and all other constituent pollutants remaining below thresholds.

Table 4.2-I
Estimated Maximum Daily and Quarterly Construction Emissions Overview – Tunneling vs. Excavation of Santa Ana River

Emission Threshold	ROG	NO_X	CO	SO_X	PM-10
Daily Threshold (lbs/day)	**75**	**100**	**550**	**150**	**150**
Reach A Boring [1]	53.64	392.26	216.26	31.46	56.84
Exceeds Threshold?	*No*	*Yes*	*No*	*No*	*No*
Change resulting from Excavation Techniques[2]	+5.08	+66.31	-30.67	-8.66	-19.95
New Total	58.72	458.57	185.59	22.80	36.89
Exceeds Threshold?	*No*	*Yes*	*No*	*No*	*No*
Quarterly Threshold (tons/qtr)	**2.5**	**2.5**	**24.75**	**6.75**	**6.75**
Reach A Boring [1]	1.74	12.75	7.03	1.02	1.85
Exceeds Threshold?	*No*	*Yes*	*No*	*No*	*No*
Change resulting from Excavation Techniques[2]	-0.97	-8.64	-5.39	-0.91	-1.08
New Total	0.77	4.11	1.64	0.11	0.77
Exceeds Threshold?	*No*	*Yes*	*No*	*No*	*No*

[1] Data from Table 9 of 2003 Air Study.
[2] Data from Tables II-2-Ia and II-2-Ib above.

Long-term Impacts

Operation of the proposed pipeline will involve: long-term emissions of air pollutants from an increase in electrical demand, weekly test runs of the back-up diesel powered electric generator at the pump station, and vehicle trips generated by employees needed for operations and maintenance of the 2005 Project Alignment. Water District staff members that currently maintain and operate the existing water facilities in the project area will also maintain and operate the proposed facilities. It is estimated that approximately 5 new employees will be needed when the project is at full capacity (assumed build-out of 2010). Each employee is expected to make 2 round-trips or 4 trips per day.

Table 4.2-J
Estimated Long-Term Mobile Emissions[1]

Pollution Source	NO_X (Lbs/Day)	CO (Lbs/Day)	ROC (Lbs/Day)	SO_X (Lbs/Day)	PM-10 (Lbs/Day)
Worker Commutes	0.32	3.38	0.37	NG	0.04

Note: [1]Average speed of commuter trips is estimated at 35 MPH.
Criteria pollutants that have estimated negligible values are designated NG (negligible emissions).
See Appendix B for model output report.

The proposed pump station will be connected to the local electric utility for normal operations. Electric usage rates for the pump station and wells are presented in the 2003 Air Quality Report (Webb) (Appendix B). **Table 4.2-K, Estimated Emissions from Electrical Consumption**, presents anticipated emissions of criteria pollutants from electrical consumption at project build-out.

Table 4.2-K
Estimated Long-Term Emissions From Electrical Consumption

Pollution Source	NO_X (lbs/day)	CO (lbs/day)	ROC (lbs/day)	SO_X (lbs/day)	PM-10 (lbs/day)
Electrical Consumption	7.79	10.38	0.52	6.23	2.08

Note: See Appendix B for electrical usage emissions calculations.

On occasion, the back-up generator associated with the proposed pump station on Waterman Avenue will emit diesel particulates. The back-up generator is anticipated to be approximately 600 hp and will be test run at full power once a week for 15 minutes. Estimated emissions for the back-up generators are presented in **Table 4.2-L, Estimated Emissions from Back-up Generator Tests**.

Table 4.2-L
Estimated Long-Term Emissions From Back-Up Generator Tests

Emission Factor (gms/Hp hour)[1]					7Horse-power	Hours per week	Daily Emissions (lbs/day)[2]				
NO_X	CO	ROC	SO_X	PM10			NO_X	CO	ROC	SO_X	PM10
6.90	8.50	1.00	0.73	0.40	600	0.25	2.28	2.81	0.33	0.24	0.13

Notes: [1] Emission factors for all criteria pollutants except SO_X are from SCAQMD BACT requirements effective January 1, 2000. The emission factor for SO_X is estimated using emissions data from a 2000kv standby diesel generator.
[2] Emission factor is in grams per Hp hour assuming both emergency generators are running the same day. Daily emission total reflects conversion of grams to pounds (454 grams per pound).

Table 4.2-M summarizes pollutant emissions for both mobile and stationary sources anticipated for daily long-term operations.

Table 4.2-M
Composite Long-Term Emissions

Pollution Source	NO_X (lbs/day)	CO (lbs/day)	ROC (lbs/day)	SO_X (lbs/day)	PM-10 (lbs/day)
Vehicle trips	0.32	3.38	0.37	NG	0.04
Electric Usage	7.79	10.38	0.52	6.23	2.08
Back-up Diesel	2.28	2.81	0.33	0.24	0.13
Total Emissions	10.39	16.57	1.22	6.47	2.25
SCAQMD Thresholds	55 lbs/day	550 lbs/day	55 lbs/day	150 lbs/day	150 lbs/day

Note: See Appendix B for electrical usage emissions calculations.

All of the long-term emissions projections are below the applicable SCAQMD thresholds for significance. The 2005 Project Alignment will not result in significant long-term air quality impacts related to project operations.

Threshold: *Air quality impacts would be considered significant if the project contributes a cumulatively considerable net increase of a criteria pollutant in a non-attainment area.*

It was determined that the 2005 Project Alignment would contribute to a cumulatively considerable short-term impact during construction due to the scale of the 2005 Project Alignment (length, pipe sizes, and necessary construction techniques) even with the implementation of mitigation measures and a Statement of Overriding Considerations was adopted for significant air quality impacts.

However, it was determined that the 2005 Project Alignment would not result in a cumulatively considerable long-term impact once the project is operational because the Alignment is a pipeline and few automobiles that produce such pollutants will be used during project operation. Long-term air quality impacts were considered less than significant.

Threshold: *Air quality impacts would be considered significant if project generated emissions expose sensitive receptors to substantial pollutant concentrations.*

It was determined that the 2005 Project Alignment would not expose sensitive receptors to substantial pollutant concentrations, as shown below.

The California Air Resources Board (CARB) has designated particulates within diesel exhaust as a toxic air contaminant (TAC). The CARB's Scientific Review Panel has established 3.0 X 10-4 per μg/m3 as a unit risk value for diesel exhaust particulates. The unit risk value is a theoretical value of contracting cancer over a 70-year life span of exposure. SCAQMD uses a significance standard of 10 in one million as the maximum acceptable health risk. The back-up generator at the proposed pump station on Waterman Avenue may be diesel fueled. As part of the Air Study prepared for this project, the long-term exposure of diesel exhaust to residents immediately

adjacent to the facility were analyzed. SCREEN3, a U.S. EPA computer model designed to estimate maximum ground-level concentrations of air contaminants, was used to evaluate potential ambient concentrations of diesel particulates at varying distances from the back-up generator. All of the individual cancer risks were determined to be below one in one million—well below the SCAQMD maximum threshold of 10 in one million. Therefore, long-term diesel emissions from the 2005 Project Alignment will not pose any significant cancer health risk to the surrounding community.

The California Office of Environmental Health Hazards Assessment (OEHHA) established the chronic reference exposure level (REL) for particulate matter within diesel exhaust as 5 μg/m3. The exposure of particulate matter within diesel exhaust at concentrations equal to the REL represents a non-cancer chronic hazard index level of 1.0. Exposure above a hazard index of 1.0 is considered a significant impact. Diesel emissions can also result in chronic respiratory symptoms such as persistent cough and mucous, bronchitis, and reduced lung capacity. People with preexisting diseases, such as emphysema, asthma, and heart disease, may be more susceptible to the effects of diesel exhaust. Studies on mice have shown that exposure to diesel exhaust may also reduce our resistance to bacterial infection and/or result in a reduced level of activity and coordination. The health risk assessment concluded that non cancer chronic index levels would be substantially below the significance threshold of 1.0. Therefore, long-term diesel emissions from the proposed pump station will not pose any significant chronic non-cancer health risks to the surrounding community.

Federal Clean Air Act Conformity

Section 176(c) of the Federal Clean Air Act prohibits federal participation in any project that is in conflict with the State Implementation Plan (SIP). Participation includes funding, permitting or other non-direct involvement. An evaluation of project-related emissions in light of the Federal Conformity Thresholds established by 40 CFR Part 1 §51.853(b), as shown in Table 4.2-N, Federal Threshold Conformity, demonstrates that the project scope is too limited to adversely affect the SIP. The project's air quality emissions from both short-term construction-related emissions and long-term operation-related emissions will not exceed any of the federal conformity thresholds. Therefore, the 2005 Project Alignment is consistent with Clean Air Act requirements.

Table 4.2-N
Federal Threshold Conformity

Pollution Source	ROG	NO_X	CO	SO_2	PM-10
Construction-related Emissions Totals (tons/yr)*	0.66	4.64	5.50	0.00	0.41
Operation-related Emission Totals (tons/yr)	0.0004	0.0049	0.0066	0.0040	0.0131
Federal Conformity Thresholds (tons/year)	**10**	**10**	**100**	******	**70**
Does Project Exceed Thresholds?	No	No	No	**	No

Notes: * Annual emission totals for all criteria pollutants reflect a total of 83 construction days for trenching and a total of 29 construction days for micro-tunneling and boring.
** Air Basin is in Federal attainment, or designated as "unclassified

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were adopted in the 2005 Certified PEIR to reduce potentially significant impacts related to short-term emissions of NO_X and ROG (also called VOC):

MM Air 1: Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction sites and provide temporary traffic control (i.e. flag person) during earthen material transport and other construction related truck hauling activities (10 percent reduction)[1].

MM Air 2: During construction of the proposed improvements one of the following options must be used to supply the power needs for boring/tunneling operations: 1) use natural gas fueled generator sets; 2) use low emission, duel fueled generator sets; or 3) prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to provide temporary construction power at the boring/tunneling sites (67 percent reduction)[1].

MM Air 3: During construction of the proposed improvements, all mobile and stationary construction equipment will be properly maintained at an off-site location including proper tuning and timing of engines (5% reduction)[1]. Equipment maintenance records and equipment design specification data sheets shall be kept on-site for the complete duration of construction.

MM Air 4: During construction of the proposed improvements, all contractors will be advised not to idle trucks on site for more than ten minutes (4 percent reduction)[1].

2005 Project Alignment Determination under CEQA

The Certified PEIR prepared for the 2005 Project Alignment found that even with the implementation of Mitigation Measures **MM Air 1** through **4**, short-term impacts would remain significant. The project required adoption of a statement of overriding considerations prior to

[1] Reductions attributed to certain mitigation measures are based on personal communication with Charles Blankson, AQMD staff, and the AQMD CEQA Handbook.

project approval.

4.2.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation to Proposed Realignment

Some of the impacts and findings discussed in the 2005 Certified PEIR related to air quality were specifically related to the 2005 Project Alignment. The Realignment Alternatives will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C and D in the 2005 Certified PEIR. Since the only portion of the project that has changed is the pipeline alignment and the addition of connections to other regional facilities including pump stations and a reservoir, the earlier analysis of all other project-related construction and operation is still adequate. The earlier analysis cannot be utilized in determining significance for the proposed realignment because the pipeline diameters have changed and there are now more specific engineering information regarding the length of particular crossings and the depths that trenches and boring pits will be excavated. However, the analysis conducted in this section of the SEIR/EIS will be provided to make the previous EIR adequate for the Realignment Alternatives. The above mitigation measures are still applicable for the Realignment Alternatives because construction of the alternatives still results in short-term impacts from NO_X, PM-10, and PM-2.5 emissions. **Mitigation measure** (**MM**) **Air 4** will be revised to reflect current recommendations and the state regulation limiting idling to five minutes or less. **MM Air 4** will be combined with **MM Air 1** because some of the intent of the traffic control plan is to reduce vehicle idling. **MM Air 2** was modified to emphasize the use of electricity from power poles, when available, because it is cleaner. Currently, the SCAQMD does not provide estimated emission reduction efficiencies resulting from implementation of applicable mitigation measures. Therefore, to be conservative, this SEIR/EIS does not use the reduction estimates shown above.

Thresholds of Significance

Western Municipal Water District (WMWD) has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, the Western Municipal Water District "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:

- conflict with or obstruct implementation of the applicable air quality plan.
- 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 non-attainment under an applicable federal or state ambient air quality standard.

In regard to Thresholds of Significance related to GHG, prior to December 5, 2008, neither the SCAQMD nor any other air district in California has promulgated a quantitative or qualitative significance threshold for GHG. Similarly, neither the California EPA nor the U.S. EPA have

developed to date guidelines on how to prepare an impact assessment for a community's or project's GHG contribution to global climate change. However, both the SCAQMD and the California Air Resources Board (CARB) released draft approaches for setting interim GHG significance thresholds in CEQA documents in late October 2008. Subsequently, the SCAQMD adopted, on December 5, 2008, a GHG significance threshold for industrial projects where the SCAQMD is the lead agency. Additionally, pursuant to SB 97, the OPR released and the Natural Resources Agency approved CEQA guideline amendments for GHG emissions December 30, 2009. These approaches are described below in the Related Regulations section. Therefore, no threshold exclusively related to GHG has been adopted by WMWD. Nevertheless, the following addresses GHG emissions both qualitatively and quantitatively in the context of cumulative impacts.

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 4.2-A** and **Table 4.2-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.

Both federal and state Clean Air Acts require that each non-attainment area prepare a plan to reduce air pollution to healthful levels. The 1988 California Clean Air Act and the 1990 amendments to the federal Clean Air Act (CAA) established new planning requirements and deadlines for attainment of the air quality standards within specified time frames which are contained in the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised, and approved over the past decade. The currently adopted clean air plan for the basin is the 1999 SIP Amendment, approved by the U.S. Environmental Protection Agency (EPA) in 2000.

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 adopted an updated AQMP in June 2007, which outlines the air pollution measures needed to meet federal health-based standards for particulates (PM-2.5) by 2014 and for ozone by 2023 (SCAQMD 2007). The AQMP was forwarded to the California Air Resources Board (CARB) and approved on September 27, 2007. It was sent to the EPA for its final approval and to be included as a revision to California's SIP on November 16, 2007.

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, PM-10, and PM-2.5 under both state and federal standards, and recently designated as nonattainment for NO_2 under state standards.

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.

The project will also be subject to 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 CCR that was adopted on February 1, 2005.

Greenhouse Gases

The Montreal Protocol on Substances That Deplete the Ozone Layer 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. Many ODCs are also potent GHGs and so policies aimed at reducing their emissions also reduce emissions of GHGs. 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.

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[2]. Most recently, on April 1, 2010, U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a new national program that will reduce GHG and improve fuel economy for all new cars and trucks sold in the United States. The U.S. EPA and NHTSA finalized a joint rule that establishes a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. U.S. EPA finalized the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA finalized Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. This national program will allow automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both Federal programs and the standards of California and other states.

The Council on Environmental Quality (CEQ) issued a memorandum for heads of Federal

[2] http://www.epa.gov/climatechange/initiatives/index.html, accessed April 28, 2010.

departments and agencies on February 18, 2010 providing *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions* (draft guidance) (CEQ 2010). The draft guidance was released for public consideration and comment on when and how Federal agencies must consider GHG emissions and climate change in their proposed actions under the National Environmental Policy Act (NEPA). CEQ has been asked to provide guidance on this subject informally by Federal agencies and formally by a petition under the Administrative Procedure Act. The draft guidance explains how Federal agencies should analyze the environmental impacts of GHG emissions and climate change when they describe the environmental impacts of a proposed action under NEPA. It provides practical tools for agency reporting, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent emissions from the proposed action to trigger a quantitative analysis, and instructs agencies how to assess the effects of climate change on the proposed action and their design. The draft guidance does not apply to land and resource management actions and does not propose to regulate greenhouse gases. CEQ is receiving public comment on this guidance for 90 days. Because this guidance is in draft form and subject to change and the nature of this public infrastructure project, these recommendations are not utilized in the project's analysis; they are briefly addressed here for the purpose of full disclosure.

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.

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.

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.

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The current amendments were made in October 2005 and currently require new homes to use half the energy they used only a decade ago. In September 2008, the new 2008 standards were adopted to update the Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in Part 1. The amended 2008 standards went into effect in January 2010. Energy efficient buildings require less electricity, and electricity production by fossil fuels results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

In July 2002, Governor Gray Davis signed California Assembly Bill (AB) 1493 (Pavley), which 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, if implemented, 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. Environmental Protection Agency (EPA) denied the Clean Air Act waiver required to implement AB 1493 on December 19, 2007. However, the U.S. EPA's decision is being challenged in federal court by the State of California. Nevertheless, in the event that the federal waiver be denied or the U.S. EPA's decision is upheld, AB 32 requires CARB to adopt alternative regulations to control mobile sources of greenhouse gas emissions to achieve greater or equivalent reductions (see Health & Safety Code section 38590). In January 2009, President Barack Obama issued a directive to the U.S. EPA to reconsider California's request for a waiver which was later granted on June 30, 2009.

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. It also requires biennial reports on potential climate change effects on several areas, including water resources. The Order also requires that the Secretary of the California Environmental Protection Agency 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.

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 directs the California Air Resources Board (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.
- January 1, 2011–Adoption of GHG emissions limits and reduction measures by regulation.
- January 1, 2012–GHG emissions limits and reduction measures adopted in 2011 become 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.

Under AB 32, CARB published its Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California in October 2007. There are 44 early action measures, both regulatory and non-regulatory, and are currently underway or to be initiated by the CARB in the 2007 to 2012 timeframe. The early action measures apply to the fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, waste, fuels, cement, oil and gas, electricity, and fire suppression sectors. As noted in the milestones above, nine of the early action measures are discrete early action measures that are regulatory and enforceable by January 1, 2010. CARB estimates that the 44 recommendations have the potential to result in GHG reductions of at least 42 MMTCO2e by 2020, representing approximately 25 percent of the 2020 target.

As discussed in the Scoping Plan, the projected total business-as-usual emissions for year 2020 (596 MMTCO2e) must be reduced approximately 30 percent to achieve CARB's approved 2020 emission target of 427 MMTCO2e. This is approximately 15 percent reduction in today's levels. The Scoping Plan identifies recommended measures for several GHG emission sectors and the

associated emission reductions to meet the 2020 emissions target. Each sector has a different emission reduction target. The majority of the measures target the transportation and electricity sectors. 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.

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 be 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 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 required that a Low Carbon Fuel Standard for transportation fuels be established for California which was approved by CARB on April 23, 2009. The regulation is designed to increase the use of alternative fuels, replacing 20 percent of the fuel used by cars in California with clean alternative fuels by 2020, including electricity, biofuels, hydrogen, and other options.

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, Quebec moved from Observer to Partner status in April 2008 and Ontario moved from Observer to Partner status in July 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 on

September 23, 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.

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 SEIR/EIS is consistent with these 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. The Natural Resources Agency also released "Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97" (FSOR) providing additional explanation about the Adopted Amendments[3].The Adopted Amendments became effective on March 18, 2010, after the Office of Administrative Law completed its review of the Adopted Amendments and rulemaking file, and transmitted the Adopted Amendments to the Secretary of State for inclusion in the California Code of Regulations.

Among other things, these Adopted Amendments require that public agencies consider GHG in any CEQA documents. The Adopted Amendments also include amending Appendix G of the State CEQA Guidelines to address GHG. The Adopted Amendments establish a new section within Appendix G, GREENHOUSE GAS EMISSIONS, with two issue questions to determine if the project would: a) generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or b) conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

However, because these Adopted Amendments were not established at the time the NOP for this project was circulated, they will not be included as separate thresholds herein. However, the GHG analysis provided under the 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*." On pages 4.2-60 through 4.2-63 discusses the subject matter of the additional questions included in Appendix G.

[3] Adopted Amendments and FSOR available at http://ceres.ca.gov/ceqa/guidelines/

The Adopted Amendments emphasize that lead agencies have the discretion to determine appropriate significance thresholds for evaluating GHG impacts that are supported by substantial evidence in the record. According to Section 15064.4(a) of the Adopted Amendments, "The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064 [Determining the Significance of the Environmental Effects Caused by a Project]. A lead agency should make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

In addition, Section 15064.7(c) of the Adopted Amendments specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." The Resources Agency FSOR emphasizes that the Adopted Amendments encourage lead agencies to rely on thresholds developed by other agencies with specialized expertise, and note that air districts, in particular, may provide guidance on adopting thresholds of significance (Natural Resources Agency FSOR page 25). Thus, the Adopted Amendments do not prescribe specific significance thresholds for use by lead agencies. Rather, they emphasize the lead agency's discretion in developing significance thresholds, and encourage lead agencies to consider thresholds by other agencies as well.

The Adopted Amendments support the use of AB 32 as a performance-based significance threshold against which to evaluate cumulative GHG impacts from a project. According to Section 15064.4(a)(2), lead agencies may rely on performance-based standards in determining a project's impacts. In addition, Section 15064.4(b)(3) of the Adopted Amendments permits consideration by the lead agency of "the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions" when assessing the significance of impacts from greenhouse gas emissions on the environment. However, there are no performance-based standards available to evaluate a regional water supply project such as this.

The Adopted Amendments also maintain the existing CEQA Guidelines concept of consistency with an approved plan or mitigation program demonstrating a project's impacts are less than significant; however, the Adopted Amendments provide further examples of what these plans might include (Adopted Amendments § 15064(h)(3).). According to the Adopted Amendments, such a program or plan may "include[e], but [is] not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of greenhouse gas emissions." (*Id.*; *see also* Adopted Amendments, Appendix G, VII(b).) ("Would the project . . . [c]onflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing emissions of greenhouse gases?").

In summary, OPR and the Natural Resources Agency has attempted to make the Adopted Amendments consistent with the existing CEQA framework for environmental analysis, including but not limited to the determination of baseline conditions, determination of significance, cumulative impacts and evaluation of mitigation measures. For these reasons, OPR

did not identify a threshold of significance for greenhouse gas emissions, nor did they prescribe assessment methodologies or specific mitigation measures. The Adopted Amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The Adopted Amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. The approach used in this SEIR/EIS is consistent with OPR's Adopted Amendments by addressing the checklist questions in Appendix G within the context of the checklist questions circulated with the NOP.

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.

To achieve these goals, SB 375 will:

- require the regional transportation plan for each of the state's major metropolitan areas to adopt a "sustainable community strategy" that will meet the region's target for reducing GHG emissions from cars and light trucks. These strategies would get people out of their cars by promoting smart growth principles such as: development near public transit; projects that include a mix of residential and commercial use; and projects that include affordable housing to help reduce new housing developments in outlying areas with cheaper land and reduce vehicle miles traveled (VMT).
- create incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.
- provide various forms of CEQA relief by allowing projects that are shown to conform to the preferred sustainable community strategy through the local general plans (and therefore contribute to GHG reduction) to have a more streamlined environmental review process. Specifically, if a development is consistent with the sustainable community's strategy and incorporates any mitigation measures required by a prior EIR, then the environmental review does not have to consider: a) growth-inducing impacts, or b) project-specific or cumulative impacts from cars on global climate change or the regional transportation network. In addition, a narrowly-defined group of "transit priority projects" will be exempt from CEQA review.

On October 24, 2008, the CARB released a *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 OPR's April 2009 release of its Proposed CEQA Guidelines or the July 2009 Natural Resources Agency Notice. Because no further guidance has been issued as of April 2010, the 7,000 $MTCO_2E$ is used as a threshold in the analysis of alternatives.

In addition to current rules and regulations for criteria pollutants which also have affect 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. However, like CARB, no thresholds have been identified for public infrastructure projects so to be conservative the industrial threshold of 10,000 $MTCO_2E$ is utilized in the project's analysis.

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. To achieve a policy objective of capturing 90% of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff has proposed combining performance standards and screening thresholds. The performance standards suggested have primarily focused on energy efficiency measures beyond Title 24 Part 6, California's building energy efficiency standards, and a screening level of 3,000 tonnes CO2e per year based on direct operational emissions. Above this screening level, project design features designed to reduce GHGs must be implemented to reduce the impact to below a level of significance. SCAQMD staff are performing additional analyses to further define the performance standards as well as coordinating with CARB's interim GHG proposal. At this time SCAQMD is waiting for CARB's recommendations for the residential/commercial sector. Once CARB adopts the statewide significance thresholds, staff will report back to the Board regarding any recommended changes or additions to the SCAQMD's interim threshold.[4]

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 working group meeting on November 19, 2009[5] proposed two options lead agencies can select from for screening thresholds of significance for GHG emissions in residential and commercial projects. Option 1 is by land use where the numeric threshold is 3,500 tons per year of CO_2e of (tpy) for residential projects; 1,400 tpy for commercial projects; and 3,000 tpy for mixed use projects. Option 2 is a combined approach for all three land use types and is set at 3,000 tpy. There is still no applicable threshold for regional water supply projects such as this.

Locally, many of the jurisdictions that the project traverse through have adopted or are in the process of adopting plans, policies, or regulations for the purpose of reducing GHG emissions. The current actions for each jurisdiction are summarized below.

The City of Colton does not have any adopted plans, policies, or regulations for the purpose of reducing GHG emissions.

The City of Corona is in the first stages preparing a citywide Climate Action Plan which includes establishing the city's existing emissions inventory. The Plan is anticipated to be complete around the end of 2010 to early 2011.

The City of Redlands currently has a Climate Action Task Force in place that are having monthly meetings; however, no plan is in place at this time.

The City of Rialto is working in conjunction with SANBAG and SCAG with their climate change plan; however, no plan is in place at this time.

[4] http://www.aqmd.gov/hb/2008/December/081231a.htm

[5] http://www.aqmd.gov/ceqa/handbook/GHG/nov19mtg/nov19.html

The City of Riverside has developed a Green Riverside Action Plan[6] (Action Plan) with 38 action items for seven vital areas: energy, GHG emissions, waste, urban design, urban nature, transportation and water. Examples of applicable action items include:

> Item 1: Adopt and implement a policy to increase the use of renewable energy to meet 33% of the City's electric load by 2020.
>
> Item 7: Implement a climate action plan that will reduce GHG emissions 7% of the 1990 municipal baseline by 2012.
>
> Item 38: Implement water efficiency, conservation and education programs to reduce the City's per capita potable water usage by 15% by 2025.

The City of San Bernardino does not have any adopted plans, policies, or regulations for the purpose of reducing GHG emissions. However, they have received federal grant funding to initiate local "green" sustainable projects and create green jobs.

The County of Riverside is currently in the process of updating its General Plan, but will include an updated Air Quality Element containing GHG reduction strategies. The County will also develop a Climate Action Plan; however, no plan is in place at this time.

The County of San Bernardino is currently in the process of developing a GHG Emissions Reduction Plan and a General Plan Amendment to add GHG reduction policies; however, no plan is in place at this time.

Design Considerations/Avoidance

In order to reduce impacts related to traffic circulation and biological resources, pipeline installation will use boring/tunneling techniques to cross several major roadways, canals, railroads, and riparian areas. Although the proposed boring/tunneling activities may reduce disturbed surface area compared to open trenching, boring/tunneling is also likely to generate more diesel exhaust and PM-10 than trenching due to the type of equipment that will be required and the depth of the pits on either side which need to be excavated.

There are no specific design considerations incorporated into the project which will reduce significant impacts related to short-term or long-term criteria pollutant emissions.

[6] http://www.riversideca.gov/utilities/pdf/gp/actionplan-june.pdf

Potential Significant Impacts/Environmental Consequences

Threshold*: Conflict with or obstruct implementation of the applicable air quality plan.*

The Air Quality Management Plan (AQMP) for the South Coast Air Basin (Basin) sets forth a comprehensive program that will lead the Basin into compliance with all federal and state air quality standards. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections. This analysis utilizes the compliance with local land use plans as the basis for its significance determination.

The proposed project will be constructed primarily in the rights-of-way of existing roads, under busy roadways, and under the Santa Ana River and other lesser creeks and drainages that do not conflict with surrounding land uses. In addition, California Government Code Section 53091 exempts public water facilities from county and city zoning regulations. Therefore, the project will not conflict with the implementation of the AQMP.

Western Municipal Water District (WMWD) proposes construction of a municipal water pipeline. As a regional water wholesaler within the County of Riverside, WMWD is obligated to address long-term water demand and meet the future needs of a rapidly growing service area. An adequate potable water distribution network is critical in WMWD's ability to provide water to satisfy future demand. Thus, WMWD proposes the project in anticipation of future planned demand for potable water. As discussed in Section 7.2 of this SEIR/EIS, the proposed project would not facilitate growth or new land use activities. This project will not result in the provision of water to water-poor areas (which could result in population growth), but will improve the reliability of WMWD's water supply to its own retail supply customers and to its wholesale purveyors. Therefore, adoption of the proposed project will not obstruct implementation of the AQMP. Impacts are considered **less than significant**.

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

The thresholds contained in the SCAQMD Air Quality Handbook are considered regional thresholds and are shown in **Table 4.2-O**. These regional thresholds were developed by SCAQMD based on the estimated daily emissions of a major stationary source.

Table 4.2-O, 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 Impacts – RST Analysis

Short-term emissions consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Short-term impacts will also include emissions generated during construction as a result of operation of personal vehicles by construction workers and asphalt degassing.

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, 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 and nature of the project, a Fugitive Dust Control Plan or Large Operation Notification would not be required.

Short-term emissions were evaluated using the URBEMIS 2007 for Windows version 9.2.4 computer program. The model evaluated emissions resulting from site grading and construction. The construction is expected begin no earlier than January 2010.The default parameters within URBEMIS 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 construction emissions. In addition to the default values used, several assumptions relevant to model inputs for short-term construction emission estimates are included below and in Appendix A of the AQIA:

The construction scenarios modeled below were chosen for analysis based on worst-case conditions. As described in Section 3.8, the construction period for the Realignment Alternatives is anticipated to be built in phases beginning within the next two years with the last phase potentially being started over ten years from project initiation. The portions of the project that are anticipated to be constructed concurrently within the next two years include: 1) Reaches E, F, and G 2008 Refinement (analyzed in the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J) and the Mockingbird Connection; and 2) the Central Reach and the Clay Street Connection. The remaining two phases that are anticipated to be constructed (the Central Feeder Connection and the Northern Reach, La Sierra Pipeline Connection, and Reach H) will be constructed in the future and are not anticipated to have emissions higher than those presented herein for the first two phases. The only difference from between the Realignment Alternatives is the four additional connections.

Construction of the Central Reach: The Central Reach of the project encompasses approximately 31,575 linear feet of 54-inch diameter pipeline that will be constructed south from a JCSD point of connection at the intersection of Clay Street and Limonite Avenue. The Central Reach continues south in Clay Street and crosses under the Union Pacific Railroad (UPRR). From that point the pipeline is proposed to be constructed south under the Santa Ana River near Van Buren Boulevard. South of the Santa Ana River, the alignment crosses under Van Buren Boulevard to Doolittle Avenue and then to Van Buren Boulevard and continues south in Van Buren Boulevard. The alignment then traverses southeast in Jackson Street, west in Diana Avenue to Wilbur Street, then south under State Route 91. South of State Route 91, the alignment continues northeast in Indiana Avenue, then southeast in Jackson Street, and connects to the approved Riverside-Corona Feeder Project alignment near the intersection of Jackson Street and Cleveland Street. The pipeline will be placed underground utilizing conventional boring techniques or micro-tunneling at seven crossings: the UPRR at Clay Street, the Santa Ana River near Van Buren Boulevard, under Van Buren Boulevard near Jurupa Avenue, the culvert at Arlington Avenue and Van Buren Boulevard, under State Route 91 near Jackson Street, the Riverside Canal at Jackson Street, and the BNSF Railroad at Jackson Street. Total micro-tunneling and/or conventional boring for the above crossings will encompass approximately 2,850 linear feet. The remainder of the pipeline (28,725 linear feet) would be installed using conventional open trenching techniques. Conventional boring, also known as the Jack and Bore method, micro-tunneling, and trenching to install the pipeline will likely be done sequentially. However, it is possible that two separate crews could work on one of the above crossings and be trenching another segment of the pipeline alignment. Therefore, each construction method was analyzed individually and also combined. The construction methods of the Central Reach can be summarized as follows:

Installation of Central Reach Using the Jack and Bore Method or Micro-tunneling: Under the jack and bore method, the contractor installs a prefabricated pipe casing through the ground from a jacking pit to a receiving pit. The pipe is propelled by jacks located in the jacking pit. As the pipe progresses, the excavated soil called spoils is transported out of the pipe either manually or by mechanical methods. Micro-tunneling is also referred to as the trenchless construction method and is conducted similar to the jack and bore method with the exception that it is remotely controlled, guided pipe jacking process and usually includes a laser guidance system. These boring techniques reduce surface disturbance to areas around the vertical jacking and receiving shafts at each end of the tunneling operation. Surface disturbance will include stockpiles of spoils, spoil removal activities, and equipment and materials storage. Ancillary equipment required by the operation includes an electric motor powered hydraulic pump, an articulating crane, a tractor/loader/backhoe, diesel fueled electric generator sets, welders, a bore/drill rig, and haul trucks to remove the spoils. Work crews connected with tunneling operations typically work 24-hours a day until the operation is completed. Removal of the spoils can be limited to daylight hours provided there is room on-site to stockpile the spoils.

Central Reach - Assumptions relevant to the tunneling/boring include:

- Tunneling/boring will progress at an average rate of 20 to 30 linear feet per day. This equals approximately 95 to 143 days of construction. To ensure a worst-case analysis, the shorter construction period was used.
- Tunneling/boring activities will disturb approximately 2.02 acres per day at any one crossing. This equals approximately 14.14 acres of total disturbance for boring activities.
- Approximately 1,470 cubic yards of on-site cut/fill will be disturbed during the excavation and re-compaction of the largest jacking and receiving pits for the Santa Ana River crossing.
- Approximately 2,500 cubic yards of material will be removed during boring operations necessitating approximately 125 truckloads of material being exported off-site over the three-month construction period.
- Plenty of sites exist within 10 miles of the project site to deposit clean fill material. Therefore, for modeling purposes each truck trip (two truck trips per truckload) is set at 10 miles.
- Two diesel-fueled electric generators will be used during boring/tunneling operations.
- Approximately 142 truckloads of pipe and casing, and an estimated 33 truckloads of other building materials will be transported to the construction site for a total of 175 truckloads during the construction period.
- Evaluating possible sources of pipe and construction materials in the vicinity, each truck trip will be approximately 60 miles or less.
- In URBEMIS, workers are estimated as 125 percent of total construction equipment selected and automatically generated in the model and displayed in the output by showing emissions from worker commute trips.
- This study assumes that boring/tunneling activities will occur 24 hours per day. Other construction activities associated with the removal of spoils will occur over a 10 hour workday.

Installation of Central Reach Using Typical Trenching Techniques: This analysis assumes that this portion of the pipeline will be constructed with standard shored-trenching techniques, also referred to as open trenching. Excavation of trenches will depend on several factors including available right-of-way, condition of in-situ material, and groundwater levels. Whenever possible, native material will be used to backfill the remainder of the trench.

Central Reach – Assumptions relevant to pipeline trenching and construction activities are:

- Trenching will progress at an average rate of 116 linear feet per day. This equates to approximately 248 weekdays (approximately 11.5 months).
- Approximately 0.08 acres per day will be disturbed during pipeline installation. This equals approximately 19.84 acres of total disturbance for trenching activities.
- Approximately 516 cubic yards of spoils will be excavated on a typical day. This is equal to a 15-foot trench 8-feet wide and 116-feet long. Of that, approximately 68 cubic yards of spoils will be displaced necessitating approximately 3 truckloads of material being exported off-site each day.
- The existing asphalt to be removed will be crushed on-site and used as aggregate to fill in the trench. No hauling will be necessary for asphalt removal.
- Approximately 930 square feet or 0.02 acres of surface area will be covered in asphalt each day. Adequate asphalt batch plants and gravel mining are found within a 10-mile radius of the project area. Hauling truckloads and frequency are auto-calculated by URBEMIS.
- Approximately 718 pipe segments 54-inches in diameter and 40-feet long will be brought to the site requiring approximately 3 truckloads per day during approximately 248 workdays. Evaluating possible sources of pipe and construction materials in the vicinity, each truck trip will be approximately 60 miles or less.
- Approximately 5 truckloads of other miscellaneous construction material and equipment per day will be brought to the construction site at 60 miles per trip.
- In URBEMIS, workers are estimated as 125 percent of total construction equipment selected and automatically generated in the model and displayed in the output.
- This study assumes construction equipment is running 10 hours per workday.

Construction of the Clay Street Connection: The Clay Street Connection of the project encompasses approximately 7,800 linear feet of pipeline, up to 48-inch diameter within unincorporated Riverside County; extending west within Limonite Avenue from the Limonite Avenue/Clay Street intersection, and then north in Pedley Road to 56th Street. This alignment does not include any crossings and would be installed using conventional open trenching techniques. Because the trenching activities analyzed for the Central Reach, above, provide for a more conservative analysis and worst-case scenario, trenching activities for the Clay Street Connection were not analyzed separately. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction. It is assumed that only one pump/booster station would be constructed as part of the project at one time. Because there are no specific plans for the construction of a particular booster station, the construction of a generic pump station was analyzed below under the description of the Mockingbird Connection because that location is larger and has more complex terrain thereby providing a worst-case analysis for the associated construction emissions.

Construction of the Mockingbird Connection: The Mockingbird Connection portion of the project consists of approximately 5,900 linear feet of pipeline, up to 42 inches in diameter, located within street rights-of-way, and within pipeline easements within the City of Riverside and adjacent unincorporated Riverside County, a five million-gallon (5 MG) reservoir and a related pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station. Micro-tunneling or other boring techniques are proposed to install that portion of the Mockingbird Connection that crosses under Van Buren Boulevard (approximately 120 feet). Because the trenching and boring/tunneling activities analyzed for the Central Reach, above, provide for a more conservative analysis and worst-case scenario, trenching and boring/tunneling activities for the Mockingbird Connection were not analyzed separately. The pump station will include pumps and flow control facilities to convey water in either direction. Because the site is approximately five acres, it is assumed that construction of the pump station will disturb one acre and the reservoir will disturb four acres, for the purposes of this analysis. The construction assumptions for the Mockingbird Connection pump station and reservoir can be summarized as follows:

Construction of the Mockingbird Connection Pump Station:

- Typical pump station construction for a facility of a similar size and location would take approximately nine months.
- Approximately one acre per day will be disturbed during pump station grading. Approximately 2 truckloads of material being exported off-site each day as a result of site clearing and grubbing at 10 miles per trip. An additional 5 truckloads of miscellaneous material and concrete delivery was also assumed to occur at 10 miles per trip.
- Once grading is complete, pump station construction will begin and is anticipated to take approximately 7.5 months. During construction, approximately 5 truckloads of other miscellaneous construction material and equipment per day will be brought to the construction site at 60 miles per trip.
- Approximately 25 percent of the site or 0.25 acres is assumed to be covered in asphalt over an estimated two weeks at the end of construction. Adequate asphalt batch plants and gravel mining are found within a 10-mile radius of the project area. Hauling truckloads and frequency are auto-calculated by URBEMIS.
- In URBEMIS, workers are estimated as 125 percent of the total construction equipment selected, and automatically generated in the model and displayed in the output.
- This study assumes construction equipment is running 10 hours per workday.

Construction of the Mockingbird Connection Reservoir:

- Typical reservoir construction for a facility of a similar size and location would take approximately 12 months.
- Approximately four acres per day will be disturbed during site grading which is anticipated to take one month. Approximately 2 truckloads of material being exported off-site each day as a result of site clearing and grubbing at 10 miles per trip.
- Once grading is complete, reservoir construction will begin and is anticipated to take approximately 10 months.
- Because the reservoir is expected to be partially buried, it will need to be constructed of concrete. Unlike welded-steel reservoirs, concrete reservoirs are not painted. The concrete will also need to be reinforced with steel. Deliveries of these concrete reservoir-specific materials are estimated and analyzed herein. Steel reinforcing deliveries will occur first and will last approximately 30 days with three truckloads per day. Concrete deliveries occur in two phases. The first phase is approximately eight days long delivering 25 truckloads per day. The second phase is approximately 16 days long delivering eight truckloads per day. Concrete deliveries are assumed to be 10 miles per trip and steel deliveries are assumed to be 60 miles per trip.
- Additional deliveries of other miscellaneous construction material per day were automatically generated by URBEMIS, called vendor trips, and included in the project's building construction emissions, below.
- Approximately 25 percent of the site or one acre is assumed to be covered in asphalt over an estimated two weeks at the end of construction. Adequate asphalt batch plants and gravel mining are found within a 10-mile radius of the project area. Hauling truckloads and frequency are auto-calculated by URBEMIS.
- In URBEMIS, workers are estimated as 125 percent of the total construction equipment selected, and automatically generated in the model and displayed in the output.
- This study assumes construction equipment is running 10 hours per workday.

The construction equipment estimated to be used for each construction method is shown in Appendix C.

The estimated emissions from each pipeline construction method (boring/tunneling or trenching) and each facility constructed are summarized in **Table 4.2-P, Estimated Daily Construction Emissions by Method and Facility.**

Table 4.2-P, Estimated Daily Construction Emissions by Method and Facility

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**
BORING/TUNNELING OPERATIONS						
Construction 2010						
Fugitive Dust	0.00	0.00	0.00	0.00	100.34	20.95
Off-Road Diesel	24.74	247.35	87.70	0.00	9.78	9.00
On-Road Diesel-soil hauling	0.06	0.79	0.28	0.00	0.03	0.03
Worker trips	0.08	0.15	2.61	0.00	0.02	0.01
On-Road Diesel-pipe hauling	0.48	6.67	2.38	0.01	0.29	0.25
Maximum[1]	25.36	254.96	92.97	0.01	110.46	30.24
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
TRENCHING OPERATIONS						
Construction 2010						
Fugitive Dust	0.00	0.00	0.00	0.00	31.93	6.67
Off-Road Diesel	7.15	46.28	25.89	0.00	2.96	2.73
On-Road Diesel-soil hauling	0.15	2.06	0.74	0.00	0.09	0.08
Trenching Worker trips	0.08	0.15	2.61	0.00	0.02	0.01
On-Road Diesel-pipe hauling	2.10	29.36	10.48	0.04	1.28	1.09
Asphalt	5.43	35.07	21.38	0.00	2.67	2.45
Maximum[1]	14.91	112.92	61.10	0.04	38.95	13.03
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
PUMP STATION CONSTRUCTION						
Construction 2010						
Site Grading[2]	4.66	39.79	19.24	0.01	12.42	4.04
Building Construction[3]	5.91	50.70	22.03	0.02	2.56	2.31
Coating/Painting	0.86	0.00	0.01	0.00	0.00	0.00
Asphalt	3.88	26.26	14.48	0.01	1.85	1.69
Maximum[4]	10.65	76.96	36.52	0.03	12.42	4.04
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

RESERVOIR CONSTRUCTION						
Construction 2010						
Site Grading[2]	5.68	46.79	25.53	0.00	43.85	10.86
Building Construction[5]	3.65	32.10	23.36	0.02	1.62	1.43
On-Road Diesel-hauling[6]	1.08	15.09	5.39	0.02	0.66	0.56
Asphalt	3.85	24.81	14.30	0.00	1.77	1.62
Maximum[2]	7.50	56..91	37.66	0.04	43.85	10.86
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: See Appendix C for model output report.
SCAQMD Daily Construction Thresholds obtained from the SCAQMD CEQA Handbook (SCAQMD 1993)
[1] The maximum emissions include each activity occurring concurrently.
[2] Site grading includes emissions of fugitive dust as well as on- and off-road diesel emissions from equipment and haul trucks and emissions from worker trips.
[3] Building construction also includes the on-road diesel emissions from haul trucks bringing construction materials to the site and hauling vegetation off-site from site grubbing and clearing activities.
[4] Although building construction, architectural coating/painting, and asphalt activities are not expected to overlap, they are combined herein to provide a worst-case analysis of all activities that could occur concurrently. Therefore, the maximum emissions are the greater of site grading alone or building construction, coating/painting, and asphalt applications.
[5] Building construction includes the on-road diesel emissions from haul trucks bringing typical construction materials to the site and hauling vegetation off-site from site grubbing and clearing activities.
[6] These on-road diesel emissions relate to the maximum daily emissions from the delivery of reservoir-specific materials which correspond to concrete for the reservoir at a frequency of 25 truckloads per day.
[7] Maximum emissions are the greater of site grading alone or building construction and maximum daily hauling emissions, or building construction and asphalt applications as this provides a worst-case scenario; although asphalt is expected to occur after construction is complete. Asphalt activities will not occur when reservoir-specific deliveries are occurring.

Evaluation of the above table indicates that criteria pollutant emissions from construction of either the boring/tunneling activities or the trenching activities alone are above the SCAQMD daily thresholds for NO_X. None of the above SCAQMD daily thresholds are exceed during construction of the pump station or reservoir when analyzed independently. The main source of NO_X is from construction vehicle and equipment exhaust. The main source of PM-10 and PM-2.5 is from fugitive dust emissions during site grading at the pump station and reservoir site and excavation of trenches and jack and bore pits.

Since this project will be constructed in phases, one or more facilities are anticipated to be under construction at one time. As identified above, concurrent construction of the Realignment Alternatives is anticipated for: 1) the Reaches E, F, and G 2008 Refinement (analyzed in the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J) and the Mockingbird Connection; and 2) the Central Reach and the Clay Street Connection. The maximum daily emissions from these concurrent construction activities are contained in **Table 4.2-Q**.

Table 4.2-Q, Estimated Maximum 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**
Reaches E, F, and G 2008 Refinement and Mockingbird Connection (Phase 1)						
Reaches E, F, and G[1]	13.45	111.38	43.67	0.11	31.54	10.10
Mockingbird Connection						
Trenching	14.91	112.92	61.10	0.04	38.95	13.03
Boring/Tunneling	25.36	254.96	92.97	0.01	110.46	30.24
Pump Station	10.65	76.96	36.52	0.03	12.42	4.04
Reservoir	7.50	56..91	37.66	0.04	43.85	10.86
Maximum	**71.87**	**613.13**	**271.92**	**0.23**	**237.22**	**68.27**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
Central Reach and Clay Street Connection (Phase 2)						
Central Reach						
Boring/Tunneling	25.36	254.96	92.97	0.01	110.46	30.24
Trenching	14.91	112.92	61.10	0.04	38.95	13.03
Clay Street Connection						
Trenching	14.91	112.92	61.10	0.04	38.95	13.03
Pump Station	10.65	76.96	36.52	0.03	12.42	4.04
Maximum	**65.83**	**557.76**	**251.69**	**0.12**	**200.78**	**60.34**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**

Notes: See Appendix C for model output report.
SCAQMD Daily Construction Thresholds obtained from the SCAQMD CEQA Handbook (SCAQMD 1993)
[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J.

Evaluation of the above table indicates that criteria pollutant emissions of NO_X, PM-10, and PM-2.5 from construction of the Reaches E, F, and G 2008 Refinement and Mockingbird Connection or the Central Reach and Clay Street Connection will exceed regional thresholds. If only the Reaches E, F, and G 2008 Refinement or the Central Reach were constructed, under the Realignment Alternative, NO_X thresholds would still be exceeded even though PM-10 and PM-2.5 emissions would be below the regional thresholds. The main source of NO_X is from construction vehicle and equipment exhaust. The main source of PM-10 and PM-2.5 is from fugitive dust emissions during site grading at the pump station and reservoir site and excavation of trenches and jack and bore pits.

Long-Term Impacts – RST Analysis

Operation of the proposed pipeline will involve long-term emissions of air pollutants from employees needed for operations and maintenance. These pollutant emissions were analyzed in the 2005 Certified PEIR for the 2005 Project Alignment and shown above under the Summary of 2005 Certified PEIR for Riverside-Corona Feeder Project section. The impacts and findings discussed in the 2005 Certified PEIR related to long-term air quality were not specifically related to the 2005 Project Alignment. The proposed project will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 Certified PEIR. The earlier analysis can be utilized in determining significance for the proposed realignment. Further analysis of the proposed pipeline alignment is not necessary to make the previous analysis adequate for the revised project. The addition of the Mockingbird Connection reservoir will have a negligible effect on long-term emissions from the project since these emissions are also in the form of maintenance vehicle usage and are not expected to increase the demand for additional employees. Likewise, the proposed pump stations will also have negligible long-term emissions that are in the form of maintenance vehicle usage and are not expected to increase the demand for additional employees. However, pump stations and wells do increase electricity usage. The emissions from electricity usage were also previously analyzed in the 2005 Certified PEIR. Additional pump stations and wells proposed as part of the Mockingbird, Central Feeder, and Clay Street Connections will not cause an exceedance of applicable thresholds based on the previous analysis. The previous analysis found that long-term emissions projections from the pipeline alignment and pump station were below the applicable SCAQMD thresholds for significance.

RST Analysis Conclusion

Based on the regional significance threshold analysis for the proposed project, short-term construction will exceed the daily regional thresholds set by SCAQMD for one or more pollutants when each project construction method and facility is evaluated individually or combined for concurrent operations. The long-term operation of the project will not exceed the daily regional thresholds set by SCAQMD, as previously evaluated in the 2005 Certified PEIR.

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 2008c) 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).

The emissions analyzed under the LST methodology are NO_2, CO, PM-10, and PM-2.5. For attainment pollutants, nitrogen dioxide (NO_2) and CO, the LSTs are derived using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a

violation of any ambient air quality standard for a particular source receptor area. LSTs for NO_2 and CO are derived by adding the incremental emission impacts from the project activity to the peak background NO_2 and CO concentrations and comparing the total concentration to the most stringent ambient air quality standards. The most stringent standard for NO_2 is the 1-hour state standard of 18 parts per hundred million and for CO it is the 1-hour and 8-hour state standards of 9 parts per million (ppm) and 20 ppm, respectively. The non-attainment PM-10 and PM-2.5 pollutant measurements is are derived using an air quality dispersion model to back-calculate the emissions necessary to make the existing violation in SRA 23 worse, using the allowable change in concentration thresholds approved by the SCAQMD.

The short-term LST analysis for each construction method for the proposed project was performed using lookup tables provided by the SCAQMD. SCAQMD has provided LST lookup tables 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. For each of the project-related activities, it was anticipated that an area no larger than five acres would be disturbed at any one time in a given location during construction. Unlike the regional emissions analysis above, the LST analysis looks at the total construction activities that could occur in one location rather than within the region. Typically, the project site is one location, but for the RCF project and the proposed connections project site consists of a linear alignment with the associated facilities separated by great distances. The results are included following the short-term analysis discussion below.

Short-Term Impacts – LST Analysis

For short-term construction emissions, the emission rates were calculated from the URBEMIS computer program estimated emissions (Appendix C). For NO_X and CO emissions, the maximum on-site emissions were calculated for each construction activity from the off-road diesel exhaust emissions. According to LST methodology, emissions associated with on-road diesel, vendor trips, and worker trips are mobile source emissions that occur off-site and therefore do not need to be considered. For PM-10 emissions, the maximum emissions occur primarily during site grading at pump station or reservoir locations and excavation of the trenches and jack and bore pits. The maximum PM-10 and PM-2.5 emissions included fugitive dust and off-road diesel exhaust emissions.

SCAQMD has provided LST lookup tables (available on the internet at http://www.aqmd.gov/ceqa/handbook/LST/LST.html) 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 total disturbance area for the pipeline is larger than five acres, it is anticipated that an area no larger than three acres (2.02 acres for boring activities plus 0.08 acres for trenching) will be disturbed in one day in the same location. Therefore, the LST lookup tables were used for construction emissions. Similarly, construction of pipeline trenching activities, the pump station and reservoir were assumed to be constructed concurrently in order to ensure a worst-case analysis. For these facilities, the entire 5.08 acre footprint (0.08 acres for trenching plus four acres for tank activities plus one acre for the pump station) will be disturbed in one day. Although the maximum total construction footprint for concurrent construction is approximately 5.08 acres, it can still be used as an indicator for exceedances to the LST.

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 nearest sensitive receptors are existing schools, residences, churches, hospitals, day care centers and medical clinics and adjacent to and in close proximity with the majority of the pipeline alignment and associated facilities. LST Methodology states that projects with boundaries located closer than 25 meters to the nearest receptor should use the LST distance of 25 meters for the analysis. Therefore, the worst-case receptor distance of 25 meters, as shown in the LST lookup tables, was used.

Each construction activity that could occur in the same location was evaluated individually and then combined to show the worst-case conditions. Like the regional analysis above, the project is anticipated to be constructed in phases with the following segments constructed concurrently: 1) Reaches E, F, and G 2008 Refinement (analyzed in the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J) and the Mockingbird Connection; and 2) the Central Reach and the Clay Street Connection. For the construction of the Reaches E, F, and G 2008 Refinement and Mockingbird Connection, the following activities can be occurring adjacent to one another: Reaches E, F, and G construction and Mockingbird Connection pipeline trenching; and Mockingbird Connection pipeline trenching; Mockingbird Connection pump station; and Mockingbird Connection reservoir. For the construction of the Central Reach and the Clay Street Connection, the following activities can be occurring adjacent to one another: Central Reach boring/tunneling and trenching; and Clay Street Connection pipeline trenching and pump station construction. **Table 4.2-R** summarizes the emissions from construction of Reaches E, F, and G and the Mockingbird Connection and the corresponding thresholds. **Table 4.2-S** summarizes the emissions from construction of the Central Reach and the Clay Street Connection and the corresponding thresholds.

Table 4.2-R
Localized Short-Term Construction Impacts from Reaches E, F, and G and Mockingbird Connection Construction (Phase 1)

Activity	Maximum Daily Disturbed Area (acres)	Peak Daily Emissions (lb/day)			
		NO_X	CO	PM-10	PM-2.5
Reaches E, F, and G[1]	1.0	111.05	40.51	31.51	10.08
Mockingbird Trenching	0.08	81.21	44.92	37.54	11.84
Maximum	1.08	192.26	85.43	69.05	21.92
25 Meter Threshold	1.0	118	602	4	3
Exceeds threshold		**Yes**	**No**	**Yes**	**Yes**
Mockingbird Trenching	0.08	81.21	44.92	37.54	11.84
Pump Station	1.0	35.49	16.42	12.22	3.87
Reservoir	4.0	45.51	23.80	43.79	10.81
Maximum	5.08	162.21	85.14	93.55	26.52
25 Meter Threshold	5.0	270	1,577	13	8
Exceeds threshold		**No**	**No**	**Yes**	**Yes**

Notes: SCAQMD LST obtained from LST Lookup Tables in Appendix C of the LST Methodology, updated 10-21-09.
[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J.

According to **Table 4.2-R**, concurrent construction of Reaches E, F, and G and the Mockingbird Connection pipeline trenching will result in localized NO_X, PM-10, and PM-2.5 impacts to sensitive receptors in the project vicinity. Concurrent construction of the Mockingbird Connection pipeline trenching, pump station and reservoir will result in localized PM-10 and PM-2.5 impacts to sensitive receptors in the project vicinity. Under the Realignment Alternative (excluding the Mockingbird Connection), construction of Reaches E, F, and G alone would exceed localized PM-10 and PM-2.5 thresholds, but would not exceed the LST for NO_X.

Table 4.2-S, Localized Short-Term Construction Impacts from Central Reach and Clay Street Connection Construction (Phase 2)

Activity	Maximum Daily Disturbed Area (acres)	Peak Daily Emissions (lb/day)			
		NO_X	CO	PM-10	PM-2.5
Central Reach Trenching	0.08	81.21	44.92	37.54	11.84
Central Reach Boring/Tunneling	2.02	247.35	87.70	100.34	20.95
Maximum	3.0	328.56	132.62	137.88	32.79
25 Meter Threshold[2]	3.0	203	1,114	8	4
Exceeds threshold		**Yes**	**No**	**Yes**	**Yes**
Clay St Pump Station	1.0	35.49	16.42	12.22	3.87
Clay St Trenching	0.08	81.21	44.92	37.54	11.84
Maximum	1.08	116.70	61.34	49.76	15.71
25 Meter Threshold	1.0	118	602	4	3
Exceeds threshold		**No**	**No**	**Yes**	**Yes**

Notes: SCAQMD LST obtained from LST Lookup Tables in Appendix C of the LST Methodology, updated 10-21-09.
[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J.
[2] The LST threshold for 3 acres was calculated using SCAQMD LST Appendix K and shown in Appendix C.

According to **Table 4.2-S**, concurrent construction of the Central Reach trenching and boring/tunneling activities will result in localized NO_X, PM-10, and PM-2.5 impacts to sensitive receptors in the project vicinity. Concurrent construction of the Clay Street Connection pipeline trenching and the pump station will result in localized PM-10 and PM-2.5 impacts to sensitive receptors in the project vicinity. Concurrent construction of the Central Reach and the Clay Street Connection will result in localized NO_X, PM-10, and PM-2.5 impacts to sensitive receptors in the project vicinity.

Evaluation of **Table 4.2-R** and **Table 4.2-S** indicates that the maximum localized impacts occur during construction of the Central Reach pipeline alignment when both boring/tunneling and trenching activities are occurring along adjacent segments of the alignment causing the LST to be exceeded for NO_X, PM-10, and PM-2.5.

Long-Term Impacts – LST Analysis

This project involves the installation of a gravity-fed potable water pipeline and associated facilities such as pump stations and a water storage reservoir. The pump stations are powered by electric motors which are an indirect source of criteria pollutant emissions. The majority of the operational emissions are in the form of mobile source emissions, 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. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is needed.

LST Analysis Conclusion

Based on the LST analysis, the short-term construction of the project will result in localized air quality impacts to sensitive receptors in the project vicinity for NO_X, PM-10, and PM-2.5. Due the lack of stationary source emissions, no long-term localized significance threshold analysis is needed.

Federal Clean Air Act Conformity Analysis

Section 176(c) of the Federal Clean Air Act prohibits federal participation in any project that is in conflict with the State Implementation Plan (SIP). Participation includes funding, permitting or other non-direct involvement. Based on the General Conformity requirements (40 CFR Section 93.153), if the total direct and indirect emissions from the proposed project are below the Federal Conformity *"de minimus"* emissions thresholds, the proposed project would be exempt from performing a comprehensive Air Quality Conformity Analysis, and would be considered to be in conformity with the SIP and have less than significant impacts. **Table 4.2-T** provides the current General Conformity *"de minimus"* emissions thresholds in tons per year (tpy) for the South Coast Air Basin and the estimated short-term and long-term emissions from the proposed project for each of the facilities that could be constructed concurrently within a given year.

Table 4.2-T, Federal Conformity De Minimus Emissions Thresholds

Activity	Annual Emissions (tpy)					
De Minimus Threshold	**VOC**	**NO_X**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
	25	**25**	**100**	**100**	**70**	**100**
Phase 1 – Construction						
Reaches E, F, and G[1]	1.38	11.42	4.48	0.01	3.23	1.04
Mockingbird Connection[2]	1.43	12.44	6.67	0.00	1.85	0.82
Total	2.81	23.86	11.15	0.01	5.08	1.86
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Phase 2 – Construction[3]						
Central Reach Trenching[4]	0.32	2.45	1.30	0.00	1.41	0.40
Central Reach Boring[5]	1.72	7.27	2.65	0.00	5.81	1.42
Clay St Connection[6]	1.42	12.36	5.74	0.00	1.18	0.68
Total	3.46	22.08	9.69	0.00	8.40	2.50
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Operation						
Long-Term[7]	0.05	0.09	0.61	0.00	0.11	0.02
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: Federal General Conformity thresholds obtained from 40 CFR 93.153

[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J. Annual emission totals reflect a total of 205 construction days per year, which take into account weather, holidays and other interruptions of work.

[2] Mockingbird Connection includes pipeline construction using the trenching method, the pump station, and reservoir. Annual emissions totals for the pipeline alignment reflect a total of 161 construction days per year and utilize the estimated emissions from WMWD's Van Buren Boulevard Pipeline Project Initial Study/Mitigated Negative Declaration, adopted 2007 (SCH#2007091063), which assumed 2,300 LF of pipeline could be constructed in 3 months. It is assumed that 60 percent of the Mockingbird Connection pipeline construction/trenching is completed during the same year that the pump station and reservoir/tank are built. Annual emissions estimates for the Mockingbird pump station reflect a total of approximately 171 construction work days and are contained in Appendix C. Annual emissions estimates for the Mockingbird reservoir/tank reflect a total of approximately 249 construction work days and are contained in Appendix C.

[3] It is not anticipated that the entire Phase 2 facilities would be constructed concurrently within one year. It is reasonable to assume that some percentage of multiple construction components and facilities can be constructed within a given year. Reasonable assumptions for the progression of linear construction and facilities were utilized and the worst-case emissions were presented in the table. The worst-case scenario for construction of Phase 2 would include the trenching of the Central Reach north of the Santa Ana River crossing, boring of the Central Reach crossing the Santa Ana River and any crossings northward, and complete construction of the Clay Street Connection facilities.

[4] For this type of project, a total of approximately 205 construction work days occur per year as an average, which take into account weather, holidays and other interruptions of work. The output for this total is contained in Appendix C. Approximately 20% of the Central Reach alignment is located north of the Santa Ana River; therefore, 20% of the annual emissions is reflected in the table above.

[5] Total annualized emissions estimates for all of the Central Reach boring reflect a total of approximately 95 construction work days and are contained in Appendix C. Approximately 60% of the Central Reach boring is located across and north of the Santa Ana River; therefore, 60% of the total annualized emissions is reflected in the table above.

[6] Clay Street Connection includes pipeline construction using the trenching method and a pump station. Annual emissions totals for the pipeline alignment reflect a total of 201 construction days per year and utilize the estimated emissions from WMWD's Van Buren Boulevard Pipeline Project Initial Study/Mitigated Negative Declaration, adopted 2007 (SCH#2007091063), which assumed 2,300 LF of pipeline could be constructed in 3 months. Annual emissions estimates for the Clay Street pump station were assumed to be equivalent to the Mockingbird pump station and reflect a total of approximately 171 construction work days and are contained in Appendix C.

[7] Long-term emissions are the annualized emissions from maintenance vehicle trips and are contained in Appendix C.

Evaluation of **Table 4.2-T**, shows that project-related construction emissions from either of the concurrent construction phases would be less than the "de minimus" thresholds for all pollutants. The long-term operation-related emissions will not exceed any of the federal de minimus conformity thresholds.

Conclusions

Based on the regional significance threshold analysis for the proposed project, short-term emissions from construction are above applicable SCAQMD daily regional thresholds for one or more pollutants when each construction method and facility is evaluated individually or under the expected concurrent construction schedule. Short-term construction impacts are **considered significant**. The long-term operation of the project will not exceed the daily regional thresholds set by SCAQMD, as previously evaluated in the 2005 Certified PEIR. Long-term operational impacts are **considered less than significant**.

Based on the LST analysis of the proposed project, the short-term construction of the project will result in localized air quality impacts to sensitive receptors in the project vicinity for NO_X, PM-10, and PM-2.5. Short-term construction impacts are **considered significant**. Additionally, no long-term localized significance threshold analysis is necessary. Long-term operational impacts are considered **less than significant**.

Based on the federal conformity analysis, the project does not exceed the annual de minimus conformity thresholds and is therefore in conformance with the Clean Air Act.

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.*

Criteria Air Pollutants

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

In evaluating the cumulative effects of the project, Section 21100(e) of CEQA states that "previously approved land use documents including, but not limited to, general plans, specific plans, and local coastal plans, may be used in cumulative impact analysis." In addressing cumulative effects for air quality, the AQMP utilizes approved general plans and, therefore, is the most appropriate document to use to evaluate cumulative impacts of the subject project. This is because the AQMP evaluated air quality emissions for the entire South Coast Air Basin using a future development scenario based on population projections and set forth a comprehensive program that would lead the region, including the project area, into compliance with all federal and state air quality standards. The project is in compliance with the AQMP and long-term project-generated emissions have been shown to be less than significant on a regional level. Even though the short-term construction of the project is shown to be significant on a regional level, these impacts are temporary and will no longer exist once the project is operational. Therefore, the project's cumulative impact to air quality is not cumulatively considerable and impacts are considered **less than significant**.

Greenhouse Gases

The following analysis estimates the proposed project's GHG emissions from project build-out no sooner than 2011 primarily through the quantification of carbon dioxide emissions. As previously stated, carbon dioxide emissions accounted for approximately 84 percent of the state's total GHG emissions in 2004. Methane and nitrous oxide accounted for 5.7 and 6.8 percent, respectively. Additionally, public water facilities (including this project) are not major generators of methane or nitrous oxide emissions. Therefore, while not intended to be an all-inclusive inventory of overall GHG emissions from the project; the estimation of CO_2 from the most important construction and operation-related sources is illustrative of much of the project's contribution to GHG.

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.

The following project activities were analyzed below for their incremental cumulative contribution to global CO_2 emissions:

Short-Term Emissions

Construction-Related Activities

The recently updated URBEMIS model calculates carbon dioxide emissions from fuel usage by construction equipment and construction-related activities, like worker trips, for the project in tons per year (one ton equals 2,000 pounds). The URBEMIS 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. Life-cycle emissions associated with the manufacture of building materials are also not quantified in this analysis although they undoubtedly exist. Quantification was not attempted because of the large spatio-temporal variation in sources for building products used to construct the project and the consequent large uncertainty associated with the resulting emissions. For this reason, to attempt to quantify life-cycle emissions of materials would be speculative. This conclusion is consistent with recent guidance on quantification of emissions for commercial developments, presented by the California Air Pollution Control Officer's Association guidance on CEQA and Climate Change (CAPCOA).

The following table summarizes the output results and presents the emissions estimates in metric tonnes (Mt) of CO_2 (one metric tonne equals approximately 2,205 pounds). These estimates assume that approximately 2,850 LF of pipeline can be constructed in one year using the boring/tunneling method and that 28,725 LF of pipeline can be constructed in one year using the trenching method for the Realignment Alternatives. Under worst-case conditions, according to the anticipated construction phasing, two pump stations and a reservoir could be under construction when pipeline is being constructed using both construction methods. The maximum construction-related CO_2 emissions anticipated for a given year are shown in **Table 4.2-U**, below.

Table 4.2-U, Project Construction Equipment Emissions

Construction Activity	Total tons CO_2	Total $MtCO_2$
Boring/Tunneling	1,415.32	1,283.96
Trenching	1,533.50	1,391.17
Pump Station	456.13	413.79
Pump Station	456.13	413.79
Reservoir	613.67	556.71
Total		**4,059.42**

Evaluation of the table above indicates that an estimated total of 4,059 $MtCO_2$ emissions from construction equipment could occur in a given year. Due to the short-term nature of construction activities and the relatively small quantity of construction-related CO_2 emissions, the resulting impacts on global climate change are not considered to be individually or cumulatively considerable **and are less than significant**.

Long-Term Emissions

Electricity-Related Emissions

Electricity used to pump water is typically generated at an off-site power plant which indirectly generates GHG emissions. Carbon dioxide emissions from electricity generation can be estimated through different methods. The method used in this analysis takes the project's annual electricity consumption and multiplies this by the average carbon intensity of electricity supplied to the California electricity grid. California depends on both electricity generated within the state and imported electricity. Depending on the year, imported electricity accounts for 22 to 32 percent of the total supply. Imported electricity has an average carbon intensity of 544 to 735 Mt/GWh (metric tonnes per gigawatt-hour) while in-state electricity has an average carbon intensity of only 187 to 280 Mt/GWh (CEC 2006a). Taking an average of all of these factors yields the average carbon intensity for electricity supplied to the California grid and is equal to 342.12 Mt/GWh.

The following table shows the electricity consumption and resultant CO_2 emissions for each of the facilities proposed as part of the Realignment Alternatives. Details are shown in Appendix C. The 2005 PEIR was certified before the state regulations for GHG emissions reductions (AB 32) were signed. Therefore, the CO_2 emissions were not previously estimated, but are included herein to show the total annual electricity consumption when all proposed facilities are operational.

Table 4.2-V, Annual Electricity Consumption

Facility	MWh/year	GWh/year	$MtCO_2/yr$
2005 Project Pump Station	10,183.50	10.18	3,494.16
Wells*	9,450.00	9.45	3,242.48
Sterling Pump Station	1,339.20	1.34	459.51
Clay Street Connection Pump Station	9,776.16	9.78	3,354.40
Mockingbird Connection Pump Station	11,405.52	11.41	3,913.46
Subtotal			**14,464.01**
Power Generated at Sterling Pump Station	-1,113.00	-1.11	-381.89
Total	41,041.38	41.05	**14,082.12**

* The total number of wells assumed for the project is 20; only 15 wells will potentially be used for the project within the 2005 Project Well Field if the 5 wells in the Central Feeder Connection Well Field are used. However, only 5 wells will be operating at one time which is reflected herein for the purposes of this analysis.

Evaluation of the table above indicates that the maximum CO_2 emissions from the proposed facilities would be approximately 14,464.01 $MtCO_2$/year. However, as part of the E, F, and G 2008 Refinement, a hydroelectric station is proposed with the Sterling Pump Station will generate an estimated 1,113 MWh per year which will also reduce the amount of CO_2 emissions by 381.89 $MtCO_2$/year for a total of 14,082.12 $MtCO_2$/year.

As a part of the evaluation of the project's operational GHG emissions, the statewide electricity consumption by utilities for agriculture and water pumps was compared to that of the project and used as an indicator of the incremental increase resulting from the project. The project's electricity usage represents an estimated increase of approximately 0.07 percent of the total electricity used in California by utilities for agriculture and water pumps[7]. It is anticipated that the project's GHG emissions would also increase by a similar and negligible amount. To lessen impacts related to electricity consumption and resultant CO_2 emissions, **MM Energy 1** will be implemented and require hydroelectric generating stations at the Mockingbird and Clay Street Connections, where the equipment has not yet been designed.

The CAPCOA White Paper on CEQA and Climate Change (CAPCOA) "identifies existing and potential mitigation measures that could be applied to projects during the CEQA process to

[7]California Energy Commission, Electricity Consumption by Entity webpage for agriculture and water pump sector in 2007. Available at www.ecdms.energy.ca.gov/utilbynaicselec.aspx, accessed December 8, 2009.

reduce a project's GHG emissions." Although most suggested mitigation measures do not relate to a project of this nature, a couple of the CAPCOA mitigation measures may help reduce the energy use by, and consequently, GHG emissions from the project. CAPCOA MM E-1 regarding high-efficiency pumps states that the project shall use high-efficiency pumps. WMWD uses pumps with high efficiency motors and selects the optimal pump to use for the application (i.e. location, hydrology, size, purpose, etc.). This results in low energy use for the application. The "most energy efficient pump" may be a motor that is rated as more energy efficient than the pump that is selected, but it may not be able to move enough water (not have enough horsepower) or it may not be suited for the particular hydraulic conditions. The project will use pumps that are as energy efficient as possible without sacrificing performance, as required by **MM Air 5**, below.

CAPCOA MM E-5 regarding an on-site renewable energy system states that the project is to provide onsite renewable energy system(s). Nonpolluting and renewable energy potential includes solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, projects may take advantage of net metering with the local utility. In addition to the onsite hydro generation of the project and to further reduce energy and thereby GHG impacts, onsite solar panels were considered. The installation of solar panels to generate energy was also considered. To reduce consumption due to all non-pumping related energy, solar generation is required for lights, timers, landscape irrigation systems, etc. pursuant to **MM Air 6**. However, the installation of the panels on a scale large enough to run the pumps would be infeasible due to the lack of roof space on the buildings housing the pump stations (pumps are removed/serviced through roof access). Land areas adjacent to the pump station buildings are minimized so as not to cause other impacts, such as ground disturbance at the Mockingbird pump station site which would affect biological resources.

Regarding wind power, there are several factors to consider when determining feasibility. The main supply-side barriers to wind farm development are siting, permitting, resource adequacy, and noise and visual impacts according to survey results published in a CEC study[8]. The most important issue with wind power is resource adequacy (i.e., strong winds). To find adequate winds in Riverside County, wind power systems are located in open areas such as the areas near Whitewater and Desert Hot Springs, rather than within urbanized areas. Noise and visual impacts can also restrict wind power development near residential areas. Residential is particularly sensitive to both noise and aesthetic impacts. The pipeline portions of the project are located mostly in streets which would not allow for wind turbines. The well fields and pump station sites are located in areas adjacent to existing residences and/or commercial development. These combined factors make small wind power infeasible for the project.

According to another report for the CEC[9], there are no geothermal projects or prospects in Riverside County with the nearest resources in Imperial County and one site in Ventura County.

[8] Chapter 5, Market Barriers of the *Emerging Renewables Program Small Wind Incentives Study* consultant report for the CEC, July 2009. (CEC 300-2009-003). Available at www.energy.ca.gov//publications/

[9] Figure 1 of the *New Geothermal Site Identification and Qualification* consultant report for the CEC, Public Interest Energy Research Program. April 2004 (P500-04-051). Available at http://www.energy.ca.gov/pier/project_reports/500-04-051.html

Therefore, on-site renewable wind or geothermal energy generation is not feasible for this project, but these systems are part of the strategy for GHG emissions reductions that will be achieved by the energy sector in the fulfillment of AB 32. Once electricity providers increase their use of renewable energy, a greater proportion of the energy provided to the proposed project will be made up of renewable energy and there will be a further reduction in the project's projected energy-related GHG emissions.

On-site generated biogas is not feasible for a project of this nature. Biogas technology is more appropriate for projects that produce and store large quantities of biomass such as wastewater treatment plants, landfills, and animal manure from dairy farms[10]. However, landfill gas capture and reuse is currently being developed by the California Air Resources Board (CARB) and the California Integrated Waste Management Board (CIWMB). Once electricity that is generated by biogas facilities becomes available, that energy will feed the transmission grid and will be available for use by the proposed project.

Interruptible service programs were also considered but rejected as infeasible. Western currently has two pump stations on interruptible rate schedules, the Inline Pump Station and Oleander Pump Station. The In-Line Pump Station is strictly a non-potable water supply pump station, and the Oleander Pump Station has both non-potable and potable pumping capability, with the potable pumps used as redundant capacity for the 1837 pressure zone. If these stations were off-line for a short time, there would not be an issue for the potable system. The purpose of the RCF is to improve the reliability of WMWD's potable water supply; to reduce possible water shortages during dry years or times of the year; to reduce dependence upon the direct delivery of imported water during dry year conditions; to improve groundwater quality; to deliver available imported water to its customers; and to contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient. If the potable water pumping stations associated with the RCF project were selected to be offline as part of a power interruption program, this could jeopardize WMWD's ability to supply potable water when needed or to move water into other parts of the regional system to assist with drought protection efforts. Due to this risk, this type of mitigation was not considered feasible for this project.

Although there are no adopted federal, state, or regional quantitative thresholds for this region, the project's annual CO_2 emissions are small compared to similar consumption by statewide activities. This analysis used the *two questions* set forth in the revised Appendix G of the newly Adopted Amendments to the State CEQA Guidelines to evaluate the project's GHG impacts: 1) would the project generate GHG emissions, either directly, or indirectly that may have a significant impact on the environment; and 2) would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.

To evaluate the *first question*, as stated above, the project's emissions were compared to state electricity consumption for similar activities and applicable mitigation, stating that hydroelectric generating stations shall be constructed as part of the Mockingbird and Clay Street Connections pump station facilities, was prescribed and discussed in Section 4.5, Energy. The electricity demand for the proposed facilities is approximately 41,041 MWh per year which includes the

[10] http://www.oregon.gov/ENERGY/RENEW/Biomass/biogas.shtml

reduction in power consumption due to the generation of 1,113 MWh from the Sterling Hydroelectric Station (Table 4.2-V). The electricity demand for the proposed project has the potential to produce approximately 14,464.01 $MtCO_2$/year; this is over the SCAQMD draft threshold of 10,000 $MTCO_2E$ for industrial projects, so further analysis would be warranted.

Regarding the *second question*, some of the jurisdictions the project traverses have adopted or are in the process of adopting policies or programs (previously described) to reduce GHG emissions and promote the efficient and sustainable use of energy. However, because none of them have an adopted plan or regulation to quantitatively reduce GHG emissions related to this project's operations, the Scoping Plan will be used in this analysis. The CARB Scoping Plan calls for a reduction in California's GHG emissions of approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. However, the majority of the reduction measures address areas such as Vehicle Efficiency, Low Carbon Fuel Standards, California Cap-and-Trade Program, High-Speed Rail, and Sustainable Forests, and as such, are not applicable to the project, and would not help reduce GHG emissions from the project. The project is consistent with the CARB reduction measure for Water which has the goal to "continue efficiency programs and use cleaner energy sources to move and treat water." WMWD addresses efficient use of water resources through implementation of its Updated Integrated Regional Water Management Plan (See Section 6.0 pgs 16-17 of this document for discussion of WMWD IRWMP.). The project is also consistent with this measure by its incorporation of the hydroelectric generation capabilities proposed with the Sterling Pump Station, which will generate an estimated 1,113 MWh per year, reducing the amount of project-generated CO_2 emissions by 381.89 $MtCO_2$/year to yield an estimated 14,082 $MtCO_2$/year, and **MM Energy 1, MM Air 5**, and **MM Air 6** which require the pump stations which are designed in the future to include this same ability to produce electricity, require the use of energy efficient pumping equipment, and include solar generation for all non-pumping related uses. By reducing electricity demand, the project is consistent with the CARB Scoping Plan through hydroelectric generation.

As the project is consistent with the CARB scoping plan and reduces electricity demand, the project would not result in a conflict with a greenhouse emission reduction plan and thus, this impact is less than significant. However, as the project exceeds both the CARB and SCAQMD draft thresholds for industrial projects, the project's contribution to GHG emissions are considered cumulatively considerable and may have a significant cumulative impact on the environment. As the impact is significant and unavoidable**, a statement of overriding considerations will be required**.

Realignment Alternatives Proposed Mitigation Measures/Minimization

This Supplemental 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.

*As described above, mitigation measures **MM Air 1** through **MM Air 3** set forth in the 2005 Certified PEIR are still applicable to the proposed RCF Pipeline Realignment. Mitigation measure **MM Air 4** is no longer applicable to any alternative because of the 2005 state requirement limiting the idling of diesel-fueled commercial vehicles to five minutes at all locations, as noted on page 4.2-31. Mitigation measure **MMs Air 3a and 4a** and 7 have been added by this SEIR/EIS to address construction-related traffic and fugitive dust. Mitigation measures MM Air 5 and MM Air 6 have been added to reduce energy consumption associated with operational GHG emissions.*

MM Air 1: Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction sites and provide temporary traffic control (i.e., flag person) during earthen material transport and other construction-related truck hauling activities (10% reduction)[1].

MM Air 2: ~~During construction of the proposed improvements one of the following options must be used to supply the power needs for boring/tunneling operations:~~ Prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to facilitate the use of electricity from power poles as a primary source or power for stationary construction equipment, unless construction is occurring at locations where power poles are not available. If access to power poles is not available, the following options must be used to supply the power needs for construction 1) use natural gas fueled generator sets; 2) use low emission, duel fueled generator sets; or 3) other low-emission power sources/supplies as appropriate and feasible. ~~prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to provide temporary construction power at the boring/tunneling sites (67 % reduction)[1].~~

MM Air 3: During construction of the proposed improvements, all mobile and stationary construction equipment will be properly maintained at an off-site location including proper tuning and timing of engines (5% reduction)[1]. Equipment maintenance records and equipment design specification data sheets shall be kept on-site for the complete duration of construction.

MM Air 3a: Construction deliveries shall be consolidated and scheduled to off-peak hours to reduce congestion of local streets.

MM Air 4a: To reduce fugitive dust emissions, the contractor shall provide WMWD with sufficient proof of compliance with Rule 403 and other dust control measures including, but not limited to:

- requiring the application of non-toxic soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 20 days or more, assuming no rain);

- requiring all trucks hauling dirt, sand, soil, or other loose materials are to be covered or must maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code;
- suspending all excavating and grading operations when wind gusts (as instantaneous gust) exceed 25 miles per hour over a 30-minute period;
- post contact information outside the property for the public to call if specific air quality issues arise;
- use SCAQMD Rule 1186 and 1186.1 certified street sweepers or roadway washing trucks when sweeping streets to remove visible soil materials, replace ground cover in disturbed areas as quickly as possible, and
- install gravel bed trackout apron (3 inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) to reduce mud/dirt trackout from unpaved truck exit routes where appropriate (i.e., Mockingbird reservoir and booster station, Clay Street booster station).

MM Air 5: To address the CAPCOA White Paper on CEQA and Climate Change (CAPCOA) MM E-1 and reduce energy use, high-efficiency pumps shall be used within the project facilities. Pumps shall be selected based on the optimal pump to use for the particular application (i.e. location, hydrology, size, purpose, etc.). This results in low energy use for the application. The project will use pumps that are as energy efficient as possible without sacrificing performance.

MM Air 6: To reduce consumption due to all non-pumping related energy, solar generation is required for lights, timers, landscape irrigation systems, and all other non-pumping energy uses.

MM Air 7: To reduce construction vehicle emissions, the bid specification packages for individual Project construction phases shall require the bidding company's fleet of off-road diesel-powered construction equipment greater than 25 hp to meet Tier 3 off-road emissions standards or better. Any emissions control device used by the contractor shall achieve Level 3 emissions reductions of no less than 85 percent for particulate matter, as specified by CARB regulations. The bidding company shall also provide certification that their fleet is in compliance with CARB's In-Use Off-Road Diesel Vehicle Regulation in effect at that time, or proof that the bidding company has applied to the SCAQMD SOON Program (and/or other applicable grant programs) to acquire funding assistance to bring it into compliance. During the bid process, proof of compliance shall be provided to WMWD, which shall include but is not limited to, CARB and/or SCAQMD operating permit(s), and other documentation such as a copy of each unit's certified tier specification, BACT documentation, and/or other compliance documentation.

Realignment Alternatives Determination of Significance under CEQA

In an effort to reduce estimated emissions, the mitigation measures listed above were considered. **MMs Air 1** through **4a** and **7** are associated with reduction in construction-related emissions for NO_X, PM-10 and PM-2.5.

Although mitigation measures **MM Air 1** through **4** from the 2005 Certified PEIR included quantitative reductions, they were provided by individual staff at SCAQMD that are no longer

there. Therefore, to be conservative, it is assumed that there is no change in the estimated emissions from those mitigation measures.

Implementation of mitigation measure **MM Air 4a** will reduce project-generated fugitive dust emissions from the Realignment Alternatives; however, there is no distinct SCAQMD established quantitative reductions associated with it; therefore to be conservative, it is assumed that there is no change in the estimated emissions from this mitigation measure. The short-term construction emissions will still exceed the SCAQMD regional significance thresholds for NO_X, PM-10, and PM-2.5. Short-term construction will also exceed applicable LST thresholds for NO_X, PM-10 and PM-2.5. Therefore, the air quality impacts from construction of the Realignment Alternatives are considered regionally and locally **significant.**

Due to the estimated increase in emissions, mitigation is required to reduce GHG. **MM Energy 1, MM Air 5 and MM Air 6** will reduce electricity consumption from the proposed pump station by requiring hydroelectric generating stations at the Mockingbird and Clay Street Connections, requiring the use of energy efficient pumping equipment, and including solar generation for all non-pumping related uses. The project contributes a relatively small quantity of construction-related and operation-related CO_2 emissions (reduces electricity demand through hydroelectric generation) and is consistent with the CARB scoping plan; therefore, the project would not result in a conflict with a greenhouse gas emission reduction plan and thus, this impact is less than significant. However, as the project exceeds the SCAQMD draft threshold for industrial projects, the project's contribution to GHG emissions are considered cumulatively considerable and may have a significant impact on the environment.

Therefore, the Realignment Alternatives will result in both an exceedance of short-term standards for air quality and has the potential to generate CO_2 emissions which may have a significant cumulative impact on the environment. **A statement of overriding considerations will be required prior to project approval**.

Summary of Cumulative Environmental Effects after Mitigation Measures are Implemented

Even though the short-term construction of the Realignment Alternatives is shown to be **significant** on a regional level, the impacts are temporary and will no longer exist once the project is operational.

Operational emissions are not cumulatively considerable and therefore, impacts are **less than significant** without mitigation.

The project reduces electricity demand through hydroelectric generation and is also consistent with applicable measures identified by the CARB's Scoping Plan or local jurisdictions which the project traverses. Mitigation has been proposed (pump station hydro-electric generation, the use of energy efficient pumping equipment, and solar generation for all non-pumping related uses) to lessen the project's impacts related to greenhouse gas production. Currently, there are no GHG thresholds (draft or otherwise) available for infrastructure projects; however, as the proposed project exceeds both the CARB and SCAQMD draft thresholds for industrial projects, the

project's contribution to GHG emissions are considered cumulatively significant and may have a significant impact on the environment. Therefore resulting long-term impacts on global climate change from project-related electricity usage are considered to cumulatively considerable. As the impact is **significant** and unavoidable**,** a statement of overriding considerations will be required.

4.2.4 No Project/Action Alternative

The No Project/Action does not cause any revisions or action therefore no air quality impacts will result.

4.3 BIOLOGICAL ENVIRONMENT

Potential impacts related to endangered or threatened species, sensitive or special status species, to riparian habitat or other sensitive natural community, to federally protected wetlands, to wildlife movement, and confliction with local policies were found to be potentially significant in the Initial Study/NOP prepared for the Riverside-Corona Feeder Pipeline Realignment Project (Appendix A) and is the focus of the following discussion and analysis. Additionally, the project's potential impact on the movement of fish or wildlife and relationship of the project to local policies and ordinances such as the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and other local policies or ordinances will be discussed.

In addition to the 2005 Certified Program EIR (2005 PEIR) and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Brian F. Smith, *Biological Assessment, CEQA, Riverside – Corona Feeder, La Sierra Connection,* Revised December 4, 2009. (Appendix C)
- Brian F. Smith, Biological *Assessment, CEQA, Riverside – Corona Feeder, Clay Street Connection,* Revised December 4, 2009. (Appendix C)
- Brian F. Smith, Biological *Assessment, CEQA, Riverside – Corona Feeder, Proposed Mockingbird Connection,* revised December 4, 2009. (Appendix C)
- Brian F. Smith, *Biological Assessment, CEQA, Riverside – Corona Feeder, Connection to the Central Feeder,* revised December 4, 2009. (Appendix C)
- County of Riverside, *Western Riverside County Multiple Species Habitat Conservation Plan, June 2003. (*Available at the Riverside County Planning Department or at www.rcip.org)
- County of Riverside, *County of Riverside General Plan, Cities of Riverside and Norco Area Plan,* October 2003. (Available at the Riverside County Planning Department or at http:///www.rctlma.org/generalplan/index.html)
- County of Riverside, *County of Riverside General Plan, Jurupa Area Plan,* October 2003. (Available at the Riverside County Planning Department or at http:///www.rctlma.org/generalplan/index.html)
- Glenn Lukos Associates, Inc., *Western Municipal Water District Proposed Riverside-Corona Feeder Realignment Project, Riverside County, California,* May 11, 2009. (Appendix C)
- Glenn Lukos Associates, Inc., *Results of Wintering Season Focused Protocol Surveys, for Western Burrowing Owls (Athene cunicularia hypugaea) for the Central Reach of the Riverside Corona Feeder Pipeline, Riverside County, California,* December, 2008. (Appendix C)
- Glenn Lukos Associates, Inc., *Results of Nesting Season Focused Protocol Surveys, for Western Burrowing Owls (Athene cunicularia hypugaea) for the Central Reach of the*

Riverside Corona Feeder Pipeline, Riverside County, California, May 12, 2009. (Appendix C)

- U.S. Department of Agriculture, Natural Resources Conservation Service, *Soil Survey Geographic (SSURGO) database*. (Available at www.ncgc.usda.gov/gov/products/datasets/ssurgo/index.html)

4.3.1 Setting/Affected Environment

The alignments of the Northern Reach and Central Reach of the Riverside-Corona Feeder Realignment Project as described herein, have primarily shifted from south of the Santa Ana River (Reaches A through D of the 2005 Project Alignment) to just north of it, following the same generally northeast to southwesterly path. The following setting description is based on the report prepared by Glenn Lukos Associates, Inc. The alignment ranges from the Santa Ana River and its adjacent floodplain to developed or disturbed native flatlands with an average elevation of approximately 700 feet above mean sea level at the junction of the Santa Ana River and Van Buren Boulevard to approximately 850 feet above mean sea level at the border of Riverside and San Bernardino counties. The majority of the project alignment consists of residential/urban/exotic habitat types. The project alignment also supports non-native grasslands, freshwater wetlands, riparian habitat, orchards, and field croplands.

The setting descriptions for the Central Feeder Connection, Clay Street Connection, Mockingbird Connection, and La Sierra Pipeline Connection are based on reports prepared by Brian F. Smith and Associates. The Central Feeder project area is gently sloped, with the lowest point located on the west end and the highest point located at the east end. Elevation on the west end is approximately 1,160 feet above mean sea level. Three plant communities occur along the Central Feeder (San Bernardino Avenue) alignment and well field: Urban/developed, non-native grassland, and orchards/vineyards. The Clay Street Connection project area is sloped, with the lowest point at the north end and the highest point located at its south end. Elevations within the project area range from approximately 760 to 800 feet above mean sea level. The Clay Street alignment along Pedley Road and Limonite Avenue is an Urban/Developed plant community. The vegetation within the proposed booster station sites includes urban developed and non-native invasive grasslands. The Mockingbird Connection traverses gently rolling terrain varying in elevation from 1,100 feet above mean sea level at the southern end to 1,000 feet above mean sea level at the northern end. Plant communities along the Mockingbird Connection include urban/developed, Riversidean sage scrub, and orchards. The La Sierra Pipeline Connection project area is located along La Sierra Avenue, upon gentle the slopes north of Lake Mathews. Elevations within the project area range from 859 feet above mean sea level at the southern end to 1,247 feet above mean sea level at the northern end.

The proposed realignment (Study Area[1]) will extend from near the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino, traversing through portions of the cities of Colton and Rialto and unincorporated San Bernardino County into unincorporated Riverside County along Agua Mansa Road. The alignment then traverses west through

[1] The biological resources study area for the proposed project extends up to 250 feet on either side of the proposed alignments.

unincorporated Riverside County, then south in Clay Street and crosses under the Santa Ana River near Van Buren Boulevard. At the Santa Ana River crossing, the alignment runs immediately parallel to the east side of the Van Buren Boulevard Bridge. South of the Santa Ana River, the proposed realignment enters the City of Riverside, where it continues in a south/southeasterly direction and connects to the approved 2005 Project Alignment near the intersection of Jackson Street and Cleveland Avenue. The Monroe Street alternative alignment begins at the intersection of Colorado Avenue and Jackson Streets and extends northwest to its terminus at the intersection at Cleveland Avenue and Irving Street.

The Central Feeder Connection is located in the San Bernardino Avenue right-of-way between Alabama Street in unincorporated San Bernardino County and Webster Street in the City of Redlands. The Clay Street Connection extends west within Limonite Avenue from the Limonite Avenue/Clay Street intersection, and then north along Pedley Road to 56th Street. The Clay Street Connection includes the construction of a booster station at one of four possible locations (ranging in size from 0.75 acres to 3.56 acres) along the pipeline. The Mockingbird Connection (which includes a reservoir and a related pump station) will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station. The La Sierra Pipeline Connection extends south from the intersection of La Sierra Avenue and Cleveland Avenue to connect to the existing Mills Gravity Pipeline, located at the intersection of La Sierra Avenue and El Sobrante Road.

Vegetation

The majority of the project area consists of urban residential and commercial development with areas of disturbed non-native grasslands, which occur in undeveloped fields or lots. Six major vegetation types were mapped within the project alignment, including scrub habitats, freshwater wetland habitats, riparian forest/woodland/scrub habitats, grassland habitats, residential/urban/exotic cover types, and grove/orchard cover types. These associations are broken down into sub-associations and outlined in **Table 4.3-A, Summary of Vegetation Types by Alignment**.

Table 4.3-A
Summary of Vegetation Types by Alignment

Vegetation Type	Proposed Alignment	Monroe Alternative Alignment	Central Feeder Connection	Clay Street Connection	Mockingbird Connection	La Sierra Pipeline Connection
Disturbed Riversidean Sage Scrub	---	---	---	---	---	1.7 acres
Riversidean Sage Scrub	7.2 acres	---	---	---	32.4 acres	50.1 acres
Open Water	3.6 acres	---	---	---	---	---
Freshwater Marsh	0.8 acres	---	---	---	---	---
Non-Native Grasslands	147.6 acres	3.0 acres	49.9 acres	12.6 acres	---	5.1 acres
Residential/Urban/Exotic	1,039.0 acres	189.8 acres	186.2 acres	55.4 acres	49.3 acres	52.1 acres
Field Croplands	3.0 acres	3.0 acres	---	---	---	---
Grove/Orchard	3.7 acres	14.9 acres	40.4 acres	---	84.9 acres	---
Southern Willow Scrub	17.3 acres	---	---	---	---	10.2 acres
Mulefat Scrub	0.9 acres	---	---	---	---	---
Total	1,223.1 acres	210.7 acres	276.5 acres	68.0 acres	166.6 acres	119.2 acres

Non-native vegetation types include Non-Native Grasslands, Residential/Urban/Exotic, Field Croplands, and Grove/Orchard. The areas of non-native grassland contain an assemblage of non-native grasses with scattered native shrubs and ruderal vegetation. Portions of the project alignment consist of dry-land agricultural fields, which have been subject to historic and/or recent tilling and planting such as cultivated barley (*Hordeum vulgare*) and cultivated oat (*Avena sativa*). The project alignment also includes areas with active orchards, which have been subject to historic and/or recent tilling and planting or contain mature trees. Predominant crops include citrus trees such orange, lemon, and grapefruit. Residential/urban/exotic vegetated areas do not generally provide suitable habitat for sensitive species. These areas include the following land uses: residential/commercial, roadways/transportation, ornamental plantings, orchard, and areas that have been cleared or graded.

Native vegetation types include Riversidean Sage Scrub, Disturbed Riversidean Sage Scrub, Open Water, Freshwater Marsh, Southern Willow Scrub, and Mulefat Scrub. Riversidean Sage Scrub is designated by the Department of Fish and Game (DFG) and the California Natural Diversity Database (CNDDB) with a Sensitivity of 3.1 "very threatened" (S3.1) and "Occurs in 21 to 80 known locations and/or 10,000 to 50,000 acres of habitat remaining." Riversidean Sage Scrub tends to occur on hilly or rocky portions, often located farther from the road above or behind agricultural fields, developed areas or disturbed areas. The Riversidean Sage Scrub within the project alignment varies in quality due to human disturbance and is characterized by an open growth of native, shrubby vegetation including but not limited to coastal sagebrush (*Artemisia californica*), interior flat-top buckwheat (*Eriogonum fasciculatum var. foliolosum*), brittlebush (*Encelia farinosa*), and Mexican elderberry (*Sambucus mexicana*), with an understory of both

non-native grasses and herbs and native herbaceous vegetation. The Open Water habitat is surrounded by native trees and herbaceous vegetation including but not limited to Fremont cottonwood (*Populus fremonti*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and mulefat (*Baccharis salicifolia*). The area of Freshwater marsh is located in a constructed detention basin associated with a gravel mining operation and consists mainly of southern cattail (*Typha domingensis*). Southern Willow Scrub communities are designated by the DFG and CNDDB with a Sensitivity of 2.1, "very threatened" (S2.1) and "Occurs in 6 to 20 known locations and/or 2,000 to 10,000 acres of habitat remaining." Southern Willow Scrub is reliant upon the presence of perennial surface or subsurface flows and occurs in various drainage corridors associated with urban development and within the Santa Ana River. The vestigial stands of forest contain dense thickets of willow species dominated by black willow and red willow (*Salix laevigata*), in addition to mule fat, tree tobacco (*Nicotiana glauca*), giant reed (*Arundo donax*), wild grape (*Vitis californica*), and Mexican elderberry (*Sambucus mexicana*), with scattered emergent Fremont cottonwood and western sycamore (*Platanus racemosa*). Mule Fat Scrub occurs in patches within ditches and drainages located in fields or along roadways. The largest occurrence of this association is at the Santa Ana River crossing in the Central Reach of the Study Area. The association is characterized by shrubby scrub including several willow species and riparian herb species and is dominated by mule fat.

Observed species at the Central Feeder connector alignment are members of the Non-Native Grassland, Urban/Developed, and Orchards/Vineyards plant communities and include: red brome (*Bromus madritensis rubens*), wild oat (*Avena fatua*), slender wild oat (*Avena barbata*), Rip-gut brome (*Bromus diandrus*), Bermuda grass (*Cynondon dactylon*), goldentop grass (*Lamarckia aurea*), telegraph weed (*Heterotheca grandiflora*), horseweed (*Conzya canadensis*), sun flower (*Helianthus annuus*), sheep sorrel (*Rumex acestosella*), western ragweed (*Ambrosia psilostachya*), short-pod mustard (*Hirschfeldia incana*), wild cucumber (*Marah fabaceus*), phacelia (Phacelia spp.), fiddleneck (*Amsinckia menziesii*), Jimson weed/sacred datura (*Datura wrightii*), dove weed (*Croton setigerus*), sycamore (*Platanus racemosa*), fan palm (*Washingtonia sp.*), royal palm (*Roystonea spp.*), lime (*Citrus spp.*), orange (*Citrus spp.*), lemon (*Citrus spp.*), eucalyptus (*Eucalyptus spp.*), tree of life (*Ailanthus altissima*), olive (*Olea europaea*), and Russian thistle (*Salsola kali*).

Observed species at the Clay Street connector alignment are members of the Non-Native Grassland and Urban/Developed plant communities and include: red brome (*Bromus madritensis rubens*), wild oat (*Avena fatua*), Rip-gut brome (*Bromus diandrus*), Bermuda grass (*Cynondon dactylon*), telegraph weed (*Heterotheca grandiflora*), horseweed (*Conzya canadensis*), sun flower (*Helianthus annuus*), sheep sorrel (*Rumex acestosella*), western ragweed (*Ambrosia psilostachya*), short-pod mustard (*Hirschfeldia incana*), phacelia (Phacelia spp.), fiddleneck (*Amsinckia menziesii*), Jimson weed/sacred datura (*Datura wrightii*), dove weed (*Croton setigerus*), tree of life (*Ailanthus altissima*), olive (*Olea europaea*), and Russian thistle (*Salsola kali*).

Observed species at the Mockingbird Connection alignment are members of the Urban/Developed, Orchard, and Riversidean Sage Scrub plant communities and include: red brome (*Bromus madritensis rubens*), wild oat (*Avena fatua*), Rip-gut brome (*Bromus diandrus*), telegraph weed (*Heterotheca grandiflora*), horseweed (*Conzya canadensis*), sheep sorrel (*Rumex*

acestosella), western ragweed (*Ambrosia psilostachya*), short-pod mustard (*Hirschfeldia incana*), rock-cress (*Arabis sp*.), fiddleneck (*Amsinckia menziesii*), Jimson weed/sacred datura (*Datura wrightii*), dove weed (*Croton setigerus*), climbing milkweed (*Sarcostemma cyanchoides*), tree tobacco (*Nicotina glauca*), California sage (*Artemisia californica*), white sage (*Salvia mellifera*), tumbleweed (*Salsola kali*), California buckwheat (*Eriogonum fasiculatum*), and fan palm (*Washingtonia sp.*).

Observed species at the La Sierra pipeline connection alignment are members of the Non-Native Grassland, Urban/Developed, Riversidean Sage Scrub, Disturbed Riversidean Sage Scrub, and Southern Willow Scrub plant communities and include: red brome (*Bromus madritensis rubens*), wild oat (*Avena fatua*), Rip-gut brome (*Bromus diandrus*), Bermuda grass (*Cynondon dactylon*), telegraph weed (*Heterotheca grandiflora*), sun flower (*Helianthus annuus*), sheep sorrel (*Rumex acestosella*), western ragweed (*Ambrosia psilostachya*), short-pod mustard (*Hirschfeldia incana*), phacelia (Phacelia spp.), fiddleneck (*Amsinckia menziesii*), Jimson weed/sacred datura (*Datura wrightii*), dove weed (*Croton setigerus*), brittle brush (Encelia farinosa), eucalyptus (*Eucalyptus spp.*), tree tobacco (*Nicotina glauca*), blue elderberry (*Sambucus mexicanus*), California sage (*Artemisia californica*), castor bean (*Ricinus communis*), tumbleweed (*Salsola kali*), myoporum (Myoporum laetum), mulberry (*Morus sp*.), bottlebrush (*Callistemon citrinus*), honeysuckle (*Lonicera sp*.), sycamore (*Plantus occidentalis*), California buckwheat (*Eriogonum fasiculatum*), fan palm (*Washingtonia sp.*), black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepsis*), and palo verde (*Parkinsonia sp*.)

Special-Status Plant Species

Plant species of special status include those classified as endangered or threatened, proposed for listing as endangered or threatened, candidates species for listing by a federal (U.S. Fish and Wildlife Service) or state (California Department of Fish and Game) resource agency, or considered a federal Species of Concern. In addition, plants included on Lists 1, 2, 3, or 4 of the California Native Plant Society (CNPS) Inventory are also considered special-status.

The Biological Report by Glenn Lukos identifies one special-status plant species with potential to occur within the Realignment Alternative route: Parry's spineflower and none within the proposed realignment. Five other species were identified as having a low to limited potential to occur on site: California satin tail, chaparral sand-verbena, prairie wedge grass, Robinson's pepper-grass, and smooth tarplant. These species are listed in **Table 4.3-B1, Special Status Plant Species with on site Occurrence Potential** along with their status and relative occurrence potential.

The biological assessments for the Central Feeder Connection, Clay Street Connection, Mockingbird Connection, and La Sierra Pipeline Connection show that, due to lack of suitable habitat, no special-status plant species will be impacted by the these facilities (see **Table 4.3-B2, Special Status Plant Species with On Site Occurrence Potential**).

Table 4.3-B1, Special-Status Plant Species with On Site Occurrence Potential

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment – Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Brand's phacelia *Phacelia stellaris*	Federal: None State: None CNPS: List 1B.1 MSHCP: Not Covered	Coastal dunes and coastal sage scrub with sandy soils. Known to occur in open areas of sage scrub associated with the Santa Ana River floodplain.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.
California bedstraw *Galium californicum ssp. primum*	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Chaparral, lower montane coniferous forest in granitic, sandy soils. Local occurrence limited to lower edge of pine belt in shaded areas at 1350-1700m elevation.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.
California Orcutt grass *Orcuttia californica*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Vernal pools.	Not expected to occur on site due to the lack of suitable habitat	Not expected to occur on site due to the lack of suitable habitat	Not expected to occur on site due to the lack of suitable habitat
California satintail *Imperata brevifolia*	Federal: None State: None CNPS: List 2.1 MSHCP: Not Covered	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub/mesic habitats in wet springs, meadows, streamsides, and flood plains.	Not expected to occur on site due to a lack of suitable habitat.	Limited potential to occur at Santa Ana River crossing.	Not expected to occur on site due to a lack of suitable habitat.
Chaparral sand-verbena *Abronia villosa* var. *aurita*	Federal: None State: None CNPS: 1B.1 MSHCP: Not covered	Sandy soils in sage-scrub, chaparral.	Limited Potential to occur on site within areas of suitable habitat.	Limited Potential to occur on site within areas of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Playas, vernal pools, marshes and swamps (coastal salt).	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment – Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Gambel's water cress *Rorippa gambelii*	Federal: FE State: SE CNPS: 1B.1 MSHCP: Not Covered	Marshes and swamps (fresh and brackish)	Presumed extirpated form the region. Not expected to occur on site.	Presumed extirpated form the region. Not expected to occur on site.	Presumed extirpated form the region. Not expected to occur on site.
Horn's milk-vetch *Astragalus hornii var. hornii*	Federal: None State: None CNPS: List 1B.1 MSHCP: Not Covered	Meadows and seeps, salty flats, playas/lake margins, alkaline.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Marsh sandwort *Arenaria paludicola*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Not Covered	Bogs and fens, freshwater marshes and swamps.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	Federal: None State: None CNPS: 1B.1 MSHCP: Not Covered	Occurs in chaparral, cismontane woodland, and coastal scrub.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Parish's desert-thorn *Lycium parishii*	Federal: None State: None CNPS: List 2.3	Sandy to rocky slopes and canyons within coastal sage scrub and Sonoran desert scrub.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Parry's spineflower *Chorizanthe parryi* var. *parryi*	Federal: None State: None CNPS: List 3.2 MSHCP: Covered	Sandy or rocky soils in open habitats of chaparral and coastal sage scrub.	Potential to occur on site within areas of suitable habitat.	Potential to occur on site within areas of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Plummer's mariposa lily *Calochortus plummerae*	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Granitic, rock soils within chaparral, cismontane woodland, coastal sage scrub, lower montane coniferous forest, and valley and foothill grassland.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment – Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Prairie wedge grass *Sphenopholis obtusata*	Federal: None State: None CNPS: List 2.2 MSHCP: Not covered	Cismontane woodland, wet meadows, streambanks, ponds and seeps/mesic.	Not expected to occur on site due to lack of suitable habitat.	Limited potential to occur at the Santa Ana River crossing.	Not expected to occur on site due to lack of suitable habitat.
Rayless ragwort *Senecio aphanactis*	Federal: None State: None CNPS: List 2.2 MSHCP: Not covered	Drying alkaline flats in coastal sage scrub and cismontane woodland	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	Federal: None State: None CNPS: 1B.1 MSHCP: Not covered	Occurs in chaparral and coastal scrub.	Low potential to occur on site in scattered coastal sage scrub areas.	Low potential to occur on site in scattered coastal sage scrub areas.	Not expected to occur on site due to a lack of suitable habitat.
Salt marsh bird's beak *Cordylanthus maritimus ssp. maritimus*	Federal: FE State: SE CNPS: List 1B.2	Coastal dune, coastal salt marshes and swamps.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Salt spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CNPS: List 2.2 MSHCP: Covered	Found in alkali springs and marshes within creosote bush scrub, chaparral, yellow pine forest, coastal sage scrub and alkali sink.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
San Bernadino aster *Symphyotrichum defoliatum*	Federal: None State: None CNPS: 1B.2 MSHCP: Not covered	Occurs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland (vernally mesic)/near ditches, streams springs.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
San Diego ambrosia *Ambrosia pumila*	Federal: FE State: None CNPS: 1B.1 MSHCP: Covered	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. Often in disturbed habitats.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment – Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
San Miguel savory *Satureja chandleri*	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Rocky, gabbroic, or metavolcanic soils in chaparral, cismontane woodland, coastal sage scrub, riparian woodland, valley and foothill grassland.	Not expected to occur on site. Due to lack of suitable habitats.	Not expected to occur on site. Due to lack of suitable habitats.	Not expected to occur on site. Due to lack of suitable habitats.
Santa Ana River woollystar *Eriastrum densifolium ssp. santorum*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Alluvial fan sage scrub, chaparral. Occurring on sandy or rocky soils.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Sandy soils in alluvial scrub, chaparral, cismontane woodland.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Smooth tarplant *Centromadia pungens* ssp. *laevis*	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grasslands, disturbed habitats.	Low potential to occur on site.	Low potential to occur on site.	Not expected to occur on site due to a lack of suitable habitat.
Spreading navarretia *Navarretia fossalis*	Federal: FT State: None CNPS: List 1B.1 MSHCP: Covered	Vernal pools, playas, chenopod scrub, marshes and swamps (assorted shallow freshwater).	Not expected to occur on site due to the lack of suitable habitat	Not expected to occur on site due to the lack of suitable habitat	Not expected to occur on site due to the lack of suitable habitat
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	Federal: None State: None CNPS: List 2.1 MSHCP: Covered	Alkaline soils in meadows and seeps, marshes and swamps, riparian scrub, vernal pools.	Not expected to occur on site due to the lack of suitable habitat	Not expected to occur on site due to the lack of suitable habitat	Not expected to occur on site due to the lack of suitable habitat

Source: Glenn Lukos Associates, 2008.

Federal
FE = Federally Endangered
FT = Federally Threatened

State
SE = State Endangered
ST = State Threatened

California Native Plant Society (CNPS) Listings
1A = Plants presumed extinct in California
1B = Plants rare, threatened, or endangered in California and elsewhere 2 = Plants rare, threatened or enc
California, but more common elsewhere
3 = Plants about which CNPS needs more information – a "review" list
4 = Plants of limited distribution – a "watch" list

CNPS Threat Code Extensions
.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediac
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Table 4.3-B2, Special-Status Plant Species with On Site Occurrence Potential

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Central Feeder Connection	Potential for Occurrence On Site: Proposed Clay Street Connection	Potential for Occurrence On Site: Mockingbird Connection	Potential for Occurrence On Site: La Sierra Pipeline Connection
Brand's phacelia *Phacelia stellar is*	Federal: None State: None CNPS: List 1B.1 MSHCP: Not Covered	Coastal dunes and coastal sage scrub with sandy soils. Known to occur in open areas of sage scrub associated with the Santa Ana River floodplain.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.
Marsh sandwort *Arenaria paludicola*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Not Covered	Bogs and fens, freshwater marshes and swamps.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.
Munz's Onion (*Allium munzii*)	Federal: FE State: ST CNPS: List 1B.1 MSHCP: Covered	Heavy clay soil which occur in a band several miles wide and extending from Corona through Temescal Canyon and along the Elsinore Fault Zone to the southwestern foothills of the San Jacinto Mountains.	Not expected to occur on site due to lack of suitable habitat	Not expected to occur on site due to lack of suitable habitat	Not expected to occur on site due to lack of suitable habitat	Not expected to occur on site due to lack of suitable habitat
Nevin's Barberry *Berberis nevinii*	Federal: FE State: SE CNPS: 1B.1 MSHCP: Covered	Found in coarse soils and rocky slopes in chaparral and gravelly wash margins in alluvial scrub.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.
Salt Marsh birds-beak *Cordylanthus maritimus maritimus*	Federal: FE State: SE CNPS: 1B.2 MSHCP: Not Covered	Upper tidal zone of salt marsh, alkaline meadows and saline flats	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Central Feeder Connection	Potential for Occurrence On Site: Proposed Clay Street Connection	Potential for Occurrence On Site: Mockingbird Connection	Potential for Occurrence On Site: La Sierra Pipeline Connection
Slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Sandy soils in alluvial scrub, chaparral, cismontane woodland.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
San Diego ambrosia *Ambrosia pumila*	Federal: FE State: None CNPS: 1B.1 MSHCP: Covered	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. Often in disturbed habitats.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.
San Miguel savory *Satureja chandleri*	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Rocky, gabbroic, or metavolcanic soils in chaparral, cismontane woodland, coastal sage scrub, riparian woodland, valley and foothill grassland.	Not expected to occur on site. Due to lack of suitable habitats.	Not expected to occur on site. Due to lack of suitable habitats.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitats.
Santa Ana River woollystar *Eriastrum densifolium ssp. santorum*	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Alluvial fan sage scrub, chaparral. Occurring on sandy or rocky soils.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.

Source: Brian F. Smith and Associates, 2009.

Federal
FE = Federally Endangered
FT = Federally Threatened

State
SE = State Endangered
ST = State Threatened

California Native Plant Society (CNPS) Listings
1A = Plants presumed extinct in California
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CNPS Threat Code Extensions
.1 = Seriously endangered in California (over 80% of occurrences threatened / hig and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Special-Status Wildlife Species

Special-status or sensitive wildlife species include those that are state or federally listed as threatened or endangered, are proposed for listing as threatened or endangered, have been designated as state or federal candidates for listing, state or federal species of concern, or California Fully Protected.

No special status animals were identified within the Central or Northern Reaches during general biological surveys for the proposed RCF realignment project. Although not observed during field studies, several special-status animals have potential to occur on site based on the presence of suitable habitat and/or their known occurrence in the region. The Biological Report by Glenn Lukos identifies sixteen special-status wildlife species with potential to occur within the project alignments: Delhi-sands flower-loving fly, arroyo chub, Santa Ana speckled dace, Santa Ana sucker, burrowing owl, least Bell's vireo, loggerhead shrike, long-eared owl, southwestern willow flycatcher, western yellow billed cuckoo, white-tailed kite, yellow-breasted chat, yellow warbler, American badger, Los Angeles pocket mouse, and San Diego black-tailed jackrabbit. Ten other species were identified as having a low to limited potential to occur on site: coast (San Diego) horned lizard, orange-throated whiptail, Southwestern pond turtle, two-striped garter snake, northern red-diamond rattlesnake, coastal California gnatcatcher, golden eagle, northern harrier, northwestern San Diego pocket mouse, and southern grasshopper mouse. These species are listed in **Table 4.3-C1, Special Status Wildlife Species with On-Site Occurrence Potential** along with their status and relative occurrence potential. Burrowing owls were not observed during the 2008 burrowing owl habitat assessment conducted by Glenn Lukos. However, it was determined that the alignments contained suitable habitat for burrowing owl.

The biological assessments for the Central Feeder Connection, Clay Street Connection, Mockingbird Connection, and La Sierra Pipeline Connection show that the following species have the potential to occur on site: Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, western burrowing owl, and Stephens' kangaroo rat (see **Table 4.3-C2, Special Status Wildlife Species with On-Site Occurrence Potential**).

Table 4.3-C1, Special-Status Wildlife Species with On-Site Occurrence Potential

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
INVERTEBRATES					
Delhi-sands flower-loving fly *Raphiomidas terminatus abdominalis*	Federal: FE State: None CDFG: None MSHCP: Covered	Fine, sandy soils, often associated with wholly or partially consolidated dunes referred to as the "Delhi" series. Vegetation consists of a sparse cover, including California buckwheat, California croton, deerweed, and evening primrose.	Potential to occur on site within areas of suitable habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Riverside fairy shrimp *Streptocephalus woottoni*	Federal: FE State: None CDFG: None MSHCP: Covered with special svey requirements.	Restricted to deep seasonal vernal pools, vernal pool-like ephemeral ponds, and stock ponds.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Vernal pool fairy shrimp *Branchinecta lynchi*	Federal: FT State: None CDFG: None MSHCP: Covered with special survey requirements.	Restricted to seasonal vernal pools. Prefers cool-water pools that have low to moderate dissolved solids.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
FISH					
Arroyo chub *Gila orcutti*	Federal: None State: None CDFG: CSC MSHCP: Covered	Found in slow-moving or backwater sections of warm to cool (10-24C) streams with mud or sand substrates. Depths are typically greater than 40 cm.	Potential to occur on site within tributaries to and within the Santa Ana River.	Potential to occur on site within tributaries to and within the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Santa Ana speckled dace *Rhinichthys osculus*	Federal: None State: None CDFG: CSC MSHCP: Not Covered	Occurs in the headwaters of the Santa Ana and San Gabriel Rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temperatures of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	Potential to occur on site within tributaries to Santa Ana River.	Potential to occur on site within Santa Ana River. CNDDB record at Santa Ana River crossing.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Santa Ana sucker *Catostomus santaanae*	Federal: FT State: None CDFG: CSC MSHCP: Covered	Small, shallow streams, less than 7 meters in width, with currents ranging from swift in the canyons to sluggish in the bottom lands. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of filamentous algae, but occasionally they are found on sand/mud substrates.	Potential to occur on site within tributaries to the Santa Ana River. Portions of site also located within Federally-designated critical habitat.	Potential to occur on site within the Santa Ana River. CNDDB record at Santa Ana River crossing. Site also located within Federally-designated critical habitat.	Not expected to occur on site due to lack of habitat.
REPTILES					
Coast (San Diego) horned Lizard *Phrynosoma coronatum* (*blainvillii* population)	Federal: None State: None CDFG: CSC MSHCP: Covered	Chaparral and coastal sage scrub	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Northern red-diamond rattlesnake *Crotalus exsul*	Federal: None State: None CDFG: CSC MSHCP: Covered	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Orange-throated whiptail *Cnemidophorus hyperythrus*	Federal: None State: None CDFG: CSC MSHCP: Covered	Coastal sage scrub, chaparral, non-native grassland, oak woodland, and juniper woodland.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Southwestern pond turtle *Actinemys marmorata pallida*	Federal: None State: None CDFG: CSC MSHCP: Covered	Prefers streams, large rivers, slow-moving sloughs, and quiet waters. Aquatic habitats with adequate vegetative cover and exposed banks are preferred, but significant time is spent on upland terrestrial habits as well. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Two-striped garter snake *Thamnophis hammondii*	Federal: None State: None CDFG: CSC MSHCP: Not Covered	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
BIRDS					
Burrowing owl *Athene cunicularia*	Federal: FSC State: None CDFG: CSC MSHCP: Covered, site occurs within the burrowing owl survey area.	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.	Potential to occur on site within suitable habitat.		Potential to occur on site within suitable habitat.
Coastal California gnatcatcher *Polioptila californica californica*	Federal: FT State: None CDFG: CSC MSHCP: Covered	Low elevation coastal sage scrub and coastal bluff scrub.	Low potential to occur on site within sage scrub patches.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Golden eagle *Aquila chrysaetos*	Federal: None State: None CDFG: FP MSHCP: Covered	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Low potential to occur on site for foraging. No nesting habitat on site.	Low potential to occur on site for foraging. No nesting habitat on site.	Not expected to occur on site due to lack of habitat.
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE CDFG: None MSHCP: Covered with special survey requirements.	Dense riparian shrubbery, preferably where flowing water is present.	Potential to occur on site within suitable habitat.	Potential to occur on site within suitable habitat. CNDDB record at Santa Ana River crossing. Site located within Federally-designated critical habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Loggerhead shrike *Lanius ludovicianus*	Federal: FSC State: None CDFG: CSC MSHCP: Covered	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	Potential to occur on site.	Potential to occur on site.	Potential to occur on site.
Long-eared owl *Asio otus*	Federal: None State: None CDFG: CSC MSHCP: Covered	Inhabit dense vegetation close to grasslands, as well as open forests shrub lands from sea level up to 2000 m elevation. They are common in tree belts along streams of plains and even desert oases. They can also be found in shelterbelts, small tree groves, thickets surrounded by wetlands, grasslands, marshes and farmlands.	Not expected to occur on site due to lack of habitat.	Potential to occur on site within suitable habitat associated with the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Northern harrier (nesting) *Circus cyaneus*	Federal: None State: None CDFG: CSC MSHCP: Covered	Found mainly in open habitats such as fields, savannas, meadows, marshes, upland prairies, and desert steppe. Also occur in agricultural areas and riparian zones. Densest populations are found in large expanses of undisturbed, open habitats with dense, low vegetation.	Low potential to occur on site.	Low potential to occur on site.	Not expected to occur on site due to lack of habitat.
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE CDFG: None MSHCP: Covered with special survey requirements.	Breeds in dense riparian habitats along rivers, streams, or other wetlands.	Not expected to occur on site due to lack of habitat.	Potential to occur on site. Site located in the vicinity of federally-designated critical habitat.	Not expected to occur on site due to lack of habitat.
Tricolored blackbird (nesting colony) *Agelaius tricolor*	Federal: FSC State: None CDFG: CSC MSHCP: Covered	Found in cattail or tule marshes; forages in fields and farms.	Potential to forage on site, but site does not support suitable nesting habitat.	Potential to forage on site, but site does not support suitable nesting habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Western yellow billed cuckoo *Coccyzus americanus*	Federal: Candidate State: SE CDFG: None MSHCP: Covered	Prefers moist thickets, willows, overgrown pastures, and orchards.	Not expected to occur on site due to lack of habitat.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
White-tailed kite (nesting) *Elanus leucurus*	Federal: FSC State: None CDFG: CFP MSHCP: Covered	Usually found in open groves, river valleys, marshes and grasslands. Preference for perching and nesting and open ground.	Potential to occur on site.	Potential to occur on site	Not expected to occur on site due to lack of habitat.
Yellow-breasted chat *Icteria virens*	Federal: None State: None CDFG: CSC MSHCP: Covered	Restricted to woodland edges and dense riparian thickets in dry, open habitats. Dense cover is important for foraging. Found frequently in farms, overgrown fields and abundant thickets.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
Yellow warbler *Dendroica petechia*	Federal: None State: None CDFG: CSC MSHCP: Covered	Preferred habitats include edges of marshes and swamps, willow-lined streams, leafy bogs, thickets, orchards, farmlands, forest edges, and suburban yards and gardens.	Potential to occur on site.	Potential to occur on site	Not expected to occur on site due to lack of habitat.
MAMMALS					
American badger *Taxidea taxus*	Federal: None State: None CDFG: CSC MSHCP: Covered	Prefer to live in dry, open grasslands, fields, and pastures. Found from high alpine meadows to sea level.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	Federal: None State: None CDFG: CSC MSHCP: Covered with special survey requirements.	Fine, sandy soils in coastal sage scrub and grasslands.	Potential to occur on site within suitable habitat near the Santa Ana River. CNDDB record occurs within the Study Area in San Bernardino County.	Low potential to occur on site within suitable habitat near the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Northwestern San Diego pocket mouse *Chaetodipus fallax*	Federal: None State: None CDFG: CSC MSHCP: Covered	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	Low potential to occur on site within suitable habitat .	Low potential to occur on site within suitable habitat near the Santa Ana River.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Pocketed free-tailed bat *Nyctinomops femorosaccus*	Federal: None State: None CDFG: CSC MSHCP: Not Covered	Occurs in a variety of arid areas in Southern California including pine-juniper woodlands, desert scrub, palm oasis, desert wash and desert riparian. Associated with rocky areas and high cliffs.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.
San Bernardino kangaroo rat *Dipodomys merriami parvus*	Federal: FE State: None CDFG: CSC 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.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	Federal: None State: None CDFG: CSC MSHCP: Covered	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub, but needs open habitats.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: None CDFG: CSC MSHCP: Covered	Found in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Southern grasshopper mouse *Onychomys torridus ramona*	Federal: None State: None CDFG: CSC MSHCP: Not Covered	Found in low arid scrub and semi-scrub vegetation. Use open areas and microhabitats dominated by gopher mounds and burrows.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Stephens' kangaroo rat *Dipodomys stephensi*	Federal: FE State: ST CDFG: None MSHCP: Covered	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer and sandy or sandy loam soils.	Site occurs outside of known range.	Site occurs outside of known range.	Site occurs outside of known range.
Western mastiff bat *Eumops perotis californicus*	Federal: None State: None CDFG: CSC MSHCP: Covered	Lower and upper Sonoran desert scrub near cliffs, preferring the rugged rocky canyons with abundant crevices.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Realignment - Northern Reach	Potential for Occurrence On Site: Proposed Realignment – Central Reach	Potential for Occurrence On Site: Monroe Street Alternative
Source: Glenn Lukos Associates, 2008 **Nesting-Birds** are considered special-status only when nesting. **Wintering-Birds** only occur in Southern California during the winter; they do not nest in Southern California. **Federal** FE – Federally Endangered FT – Federally Threatened FPT – Federally Proposed Threatened **FSC – Federal Species of Concern** S-Sensitive (USDA Forest Service)			**State** SE – State Endangered ST – State Threatened **CDFG** CSC – California Species of Concern CFP – California Fully-Protected Species		

Table 4.3-C2, Special-Status Wildlife Species with On Site Occurrence Potential

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Central Feeder Connection	Potential for Occurrence On Site: Proposed Clay Street Connection	Potential for Occurrence On Site: Mockingbird Connection	Potential for Occurrence On Site: La Sierra Pipeline Connection
INVERTEBRATES						
Delhi-sands flower-loving fly *Raphiomidas terminatus abdominalis*	Federal: FE State: None CDFG: None MSHCP: Covered	Fine, sandy soils, often associated with wholly or partially consolidated dunes referred to as the "Delhi" series. Vegetation consists of a sparse cover, including California buckwheat, California croton, deer weed, and evening primrose.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
FISH						
Santa Ana sucker *Catostomus santaanae*	Federal: FT State: None CDFG: CSC MSHCP: Covered	Small, shallow streams, less than 7 meters in width, with currents ranging from swift in the canyons to sluggish in the bottom lands. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of filamentous algae, but occasionally they are found on sand/mud substrates.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
REPTILES						

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Central Feeder Connection	Potential for Occurrence On Site: Proposed Clay Street Connection	Potential for Occurrence On Site: Mockingbird Connection	Potential for Occurrence On Site: La Sierra Pipeline Connection
Sierra Madre yellow-legged frog *Rana mucosa*	Federal: FE State: None CDFG: CSC MSHCP: Not covered	Sunny riverbanks, meadow streams, isolated pools, lake boarders, and rocky stream courses. Can be found in ponds, tarns, lakes, and streams at moderate to high elevations.	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat.
BIRDS						
Bald Eagle *Haliaeetus leucocephalus*	Federal: Delisted State: SE CDFG: None MSHCP: Covered	Most bald eagle nests are built in dominant ponderosa or sugar pine trees, within a mile of a lake, reservoir, or stream.	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat
Burrowing owl *Athene cunicularia*	Federal: FSC State: None CDFG: CSC MSHCP: Covered, site occurs within the burrowing owl survey area.	Short grass 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.	Potential to occur on site within suitable habitat.	Potential to occur on site within suitable habitat.	Sign observed on site. Potential to occur on site within suitable habitat	Not expected to occur on site due to lack of habitat
Coastal California gnatcatcher *Polioptila californica*	Federal: FT State: None CDFG: CSC MSHCP: Covered	Low elevation coastal sage scrub and coastal bluff scrub.	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat.	High probability of occurrence on site within suitable habitat	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Central Feeder Connection	Potential for Occurrence On Site: Proposed Clay Street Connection	Potential for Occurrence On Site: Mockingbird Connection	Potential for Occurrence On Site: La Sierra Pipeline Connection
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE CDFG: None MSHCP: Covered with special survey requirements.	Dense riparian shrubbery, preferably where flowing water is present.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat.
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE CDFG: None MSHCP: Covered with special survey requirements.	Breeds in dense riparian habitats along rivers, streams, or other wetlands.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Western yellow billed cuckoo *Coccyzus americanus*	Federal: Candidate State: SE CDFG: None MSHCP: Covered	Prefers moist thickets, willows, overgrown pastures, and orchards.	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat	Not expected to occur on site due to lack of habitat.
MAMMALS						
San Bernardino kangaroo rat *Dipodomys merriami parvus*	Federal: FE State: None CDFG: CSC 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.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Stephens' kangaroo rat *Dipodomys stephensi*	Federal: FE State: ST CDFG: None MSHCP: Covered	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer and sandy or sandy loam soils.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	High probability of occurrence on site within suitable habitat. Evidence of kangaroo rats observed on site; however, species could not be determined	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence On Site: Proposed Central Feeder Connection	Potential for Occurrence On Site: Proposed Clay Street Connection	Potential for Occurrence On Site: Mockingbird Connection	Potential for Occurrence On Site: La Sierra Pipeline Connection
Source: Brian F. Smith and Associates, 2009 **Nesting-Birds** are considered special-status only when nesting. **Wintering-Birds** only occur in Southern California during the winter; they do not nest in Southern California. **Federal** FE – Federally Endangered FT – Federally Threatened FPT – Federally Proposed Threatened **FSC – Federal Species of Concern** S-Sensitive (USDA Forest Service)				**State** SE – State Endangered ST – State Threatened **CDFG** CSC – California Species of Concern CFP – California Fully-Protected Species		

4.3.2 Summary of the 2005 Project Alignment Certified Program EIR for the Riverside-Corona Feeder Project

2005 Alignment Design Considerations/Avoidance

Segments of the proposed RCF 2005 Alignment Alternative that extend across the Santa Ana River and other watered areas are planned to include jack and boring underneath the waterways where feasible. This would avoid impacts to the waterways, associated riparian vegetation, and habitat for sensitive species. The majority of pipelines will be constructed within the existing roadways, where feasible, thus avoiding impacts to biological resources which may be located adjacent to the roads such as habitats for Stephens' kangaroo rat, Delhi sands flower-loving fly, and coastal California gnatcatcher.

2005 Alignment Potential Significant Impacts/Environmental Consequences

Biological Resources were addressed in Section II-3 (pp. II-3-1 through II-3-23) of the 2005 Certified Program EIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment), which are hereby incorporated by reference. The following discussion is a summary of the Biological Resources section of the 2005 PEIR:

Threshold: *Have substantial adverse effects, 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 CDFG or the USFWS.*

The 2005 Project Alignment was found to have potential direct impacts to: Santa Ana River woolly-star, slender-horned spineflower, arroyo southwestern toad, least Bell's vireo, southwestern willow flycatcher, San Bernardino kangaroo rat, and Santa Ana sucker Critical Habitat; and less than significant impacts to white-tailed kite, coastal California gnatcatcher, bald eagle, and Stephens' kangaroo rat. Through implementation of **MM Bio 1–5** impacts to special status species were considered 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, and regulations or by the CDFG or USFWS.*

Sensitive riparian habitat was identified in several locations along the 2005 Project Alignment including southern willow scrub and mule-fat scrub. Where the proposed project alignment crossed under the Santa Ana River, the vegetation community was characterized by dense riparian thickets dominated by arroyo willow and red willow. At the west side of Van Buren Boulevard, the floodplain of Mockingbird Canyon Creek supported southern willow sage scrub and mule-fat scrub. South of the Corona Landfill, a minor unnamed drainage supported a degraded version of the above vegetation communities. Degraded mule-fat scrub was also present where the proposed project crosses the Springbrook Wash along the Gage Canal siphon, south of Spring Street in the City of Riverside. Due to the low quality of the Southern Willow

Scrub and Mule-fat Scrub habitats along the 2005 Project Alignment, it was found that impacts to these communities would be less than significant.

A narrow band of Riversidean sage scrub was identified adjacent to the 2005 Project Alignment on the steep south bank of Springbrook drainage at the crossing location. It was found that the Riversidean sage scrub in this area was severely limited by its relative isolation and the presence of citrus orchards adjacent to the north, non-native grassland adjacent to the south, and industrial and residential development to the west and northwest. Impacts were therefore considered less than significant.

The proposed extraction of water prior to boring activities at the Santa Ana River where groundwater levels are high was found to potentially result in significant impacts to the health of existing riparian communities, the magnitude of which was determined to depend on the seasonal timing of the activities. Additionally, if undertaken, open trench methods were found to have the potential to impact the Springbrook Wash. Trenching activities would involve temporary physical disturbance to the Santa Ana River channel and removal of existing riparian vegetation within the construction footprint. Impacts to the riparian community from trenching activities were considered significant. This is discussed further on page II-3-16 of the 2005 PEIR. Through implementation of mitigation measures **MM Bio 6, 7, and 10** potential impacts to riparian habitat and other sensitive communities were reduced to less than significant levels.

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 formal delineation for either state or federal wetland jurisdiction was not conducted for the 2005 PEIR due to the programmatic level of the project and analysis. However, United States Army Corp of Engineers (ACOE) "waters of the United States" per Sections 401-404 of the Federal Clean Water Act and "streambeds" per Section 1600-1603 of the California Fish and Game Code (CDFG) were observed along the 2005 Project Alignment including the Santa Ana River and Springbrook Wash.

Micro-tunneling and boring were identified as the preferred method of crossing all jurisdictional areas. However, if determined not feasible, open trenching would be utilized. While micro-tunneling techniques, in themselves, would result in no direct impacts to wildlife or vegetation, dewatering was determined to have potential adverse impacts to the riparian vegetation communities, the magnitude of which would depend on the seasonal timing of the activities. Impacts due to micro-tunneling were anticipated to be minor and temporary, possibly involving stress, desiccation, and potential defoliation. These impacts were considered self-correcting once normal hydrology resumed. Open trenching techniques, if utilized, were determined to likely result in adverse impacts to the Santa Ana River, a river that is in the jurisdiction of the CDFG, ACOE, and California Regional Water Quality Control Board (WQCB), its tributaries, other drainages, and jurisdictional riparian vegetation along the 2005 Project Alignment. Trenching activities for pipeline installation would result in excavation activities within the river channel, within federally protected "waters of the United States."

Micro-tunneling and boring activities under the Santa Ana River and all other drainages were found to have the potential to result in the leakage of construction-related materials and subsequently degrade sub-surface flows and/or surface flows, which may result in significant impacts to the existing riparian habitat. Through implementation of mitigation measures **MM Bio 6** through **14**, potential impacts to wetlands and other jurisdictional features were reduced to less than significant levels.

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

According to the 2005 PEIR, most of the 2005 Project Alignment and surrounding lands were geographically located in highly degraded areas resulting from industrial and residential development. However, the 2005 Project Alignment was found to traverse across several local wildlife corridors.

It was found that due to the existing patterns of urbanization and very limited wildlife habitat within the 2005 Project Alignment vicinity, the subsurface nature of the proposed pipeline, and the small footprint of the construction zone, impacts on the movement of any resident or migratory fish or wildlife species or on established native resident or migratory wildlife corridors were expected to be less than significant.

***Threshold:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

Most of the jurisdictions along the project alignment, including the Cities of San Bernardino, Colton, Riverside, and Corona and the County of Riverside, have policies regulating the removal of or injury to trees and other landscaping. However these policies protect trees as an aesthetic resource rather than a biological resource. These policies are discussed further within the Aesthetics section of the 2005 PEIR (Section VIII.A).

***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.*

The 2005 Project Alignment is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Area. Western Municipal Water District (WMWD) is not a permittee of the MSHCP however WMWD has the option of participating in the MSHCP as a Special Participating Entity in order to obtain incidental take coverage under the Plan for impacts to listed species and/or habitat. If WMWD decides to participate, impacts to protected species covered by the MSHCP would be mitigated through compliance with the MSHCP.

If WMWD chooses not to participate in the MSHCP, any impacts to protected species as a result of the proposed project will need to be mitigated through the "regular" channels of the resource agencies including the potential need to secure a "take" permit or authorization from the U.S. Fish and Wildlife Service.

It was determined in the 2005 PEIR that the 2005 Project Alignment project extends through primarily developed, urban areas, and areas are not included in a Criteria Area Cell under the MSHCP. Therefore, the project will not conflict with the MSHCP, regardless of whether or not WMWD decides to participate in the MSHCP.

As there were no other HCP's that the proposed project would conflict with, impacts were considered less than significant.

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were adopted in the 2005 PEIR to reduce potentially significant impacts related to biological resources:

MM Bio 1: In Reach A, the dewatering activities should take place during the period from October 1 through the end of February. This is within the season when the dominant plant species of these riparian communities are dormant. Dewatering outside of this period would subject these communities to stress, desiccation, and potential defoliation. In addition, adherence to this suggested schedule avoids the generally accepted breeding chronology for nesting by the least Bell's vireo and southwestern willow flycatcher in southern California (USFWS b, Sogge *et al.*), obviating the need for focused surveys that may be required, due to the project's potential to have significant noise impacts to these two listed migratory species. This suggested schedule also avoids the breeding season of the federally listed arroyo toad, generally regarded as mid-March through July 1 (USFWS c), thereby avoiding potential impacts to this species as well. Impacts to the arroyo toad during the breeding season would be direct, including physical damage to mature individuals and interference with breeding activities. Should it not be feasible to adhere to this schedule, additional mitigation measures are required, as specified below.

MM Bio 2: Should the construction occur during the breeding season for the arroyo toad (March 15 – July 1), a protocol-level survey shall be conducted at the Santa Ana River (Reach A), to determine presence/absence. If the arroyo toad is found to be present in the vicinity of Reach A, incidental take permits (through either Section 7 or Section 10) shall be applied for. The survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

MM Bio 3: Should construction occur during the breeding season for the least Bell's vireo or southwestern willow flycatcher (March 15 through September 15), protocol-level surveys shall be conducted prior to construction at the following locations: the Santa Ana River (Reach A), Spring Brook wash (Reach B), the riparian vegetation along the Mockingbird Canyon alignment (Reach E), and the drainage located south of the Corona Landfill (Reach H). Should any of these species be detected, a temporary noise barrier shall be used during construction, at the appropriate location(s), in coordination with CDFG and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less at the edge of breeding habitat. If surveys indicate these species are not present, this measure will not be required. Protocol-level surveys reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

MM Bio 4: Should construction occur during the breeding season for the coastal California gnatcatcher (March 15 through September 15), a protocol-level survey shall be conducted prior

to construction at Spring Brook wash (Reach B), in the vicinity of the proposed project. Should coastal California gnatcatcher be detected, a temporary noise barrier shall be used during construction, at the appropriate location(s), in coordination with CDFG and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less at the edge of breeding habitat. These protocol-level survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

MM Bio 5: In addition to use of the temporary noise barrier, a qualified on site noise monitor (approved by the local jurisdiction and WMWD) shall be present during all construction activities conducted near habitat that has been identified in the surveys to host the arroyo toad, least Bell's vireo, southwestern willow flycatcher, or coastal California gnatcatcher. The noise monitor shall ensure, through on site noise meter readings, that the temporary barriers are effective at reducing construction noise to 60 dBA or less. If 60 dBA is exceeded, the noise monitor shall work with the Contractor to make adjustments in the barriers or construction activities to reduce noise to 60 dBA or less.

MM Bio 6: Construction staging areas shall be located outside of riparian areas and away from (to the greatest distance feasible) riparian areas.

MM Bio 7: Construction activities adjacent to riparian and/or wetland areas shall be minimized where feasible. If open cut trenching is used in the Spring Brook drainage crossing instead of boring, direct loss of wetlands may occur and permits and mitigation will be required. Such mitigation may include restoration on site, removal of invasive species, or off-site purchase. See **MM Bio 8**, below.

MM Bio 8: A formal jurisdictional delineation for potential State and Federal wetland impacts will be conducted at Reaches A and B.

MM Bio 9: A project-wide 1602 Streambed Alteration Agreement prepared in accordance with CDFG requirements shall be secured by WMWD as the jurisdictional delineation warrants and shall include mitigation measures that are sufficient to reduce direct and indirect impacts to riparian habitat to a level below significant. The Agreement may include some or all of the following:

- Avoid impacts where possible by shifting the project location or construction timing.
- Minimize impacts.
- Remove invasive species.
- Purchase off-site habitat credits.
- Create and/or restore natural communities.
- Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible.
- Limit construction activity to daylight hours to minimize potential impacts related to artificial lighting.
- Require the presence of a qualified biological monitor during all construction activities that are within or near sensitive habitats and areas that have been identified to host the arroyo toad, least Bell's vireo, southwestern willow flycatcher, coastal California gnatcatcher, Stephens' kangaroo rat, or San Bernardino kangaroo rat.

MM Bio 10: An ACOE Section 404 permit shall be secured as the jurisdictional delineation warrants. The Nation-wide Section 404 Permit will apply to the project for linear utility projects. The Corps may require the implementation of measures similar to those listed for the Section 1602 Streambed Alteration Agreement as part of the Section 404 Permit approval process. Implementation of these measures will mitigate potential impacts to the bed and banks of the Santa Ana River and any other jurisdictional drainage.

Should open-trenching techniques be utilized to install the pipeline across the Santa Ana River, consultation with the US Fish and Wildlife Service will be initiated to determine whether or not the proposed project would result in significant impacts to Critical Habitat for the Santa Ana sucker. If warranted incidental take permits (through Section 7) shall be applied for. The US Fish and Wildlife Service shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

MM Bio 11: In conjunction with the ACOE Section 404 Permit, a Section 401 Water Quality Certification from the California Regional Water Quality Control Board shall be secured.

MM Bio 12: Any discharge into navigable waters, or "waters of the United States" shall also comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the Federal Clean Water Act. Compliance with these provisions shall result in certification from the Regional Board that verifies that the project complies with all water quality standards.

MM Bio 13: California State Water Resources Control Board (SWRCB) dewatering Permits, submitted for dewatering activities associated with all boring and micro-tunneling, will be required and may specify typical mitigation measures required in a dewatering permit:

- Characterize the quality of the water that will be discharged
- Treat water to be discharged to SWRCB standards prior to discharge
- Delineate extent of contamination
- Specify contaminants
- Identify beneficial uses
- Identify treatment

MM Bio 14: Should open-trenching techniques be utilized to install the pipeline across the Santa Ana River, a protocol-level survey shall be conducted at the Santa Ana River (Reach A), to determine presence/absence of the Santa Ana River woolly-star and slender-horned spineflower within the construction footprint. If Santa Ana River woolly-star or slender-horned spineflower are found to be present in the footprint, incidental take permits (through Section 7) shall be applied for. The survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

2005 Project Alignment Determination of Significance under CEQA

The certified EIR prepared for the 2005 Project Alignment found that with implementation of Mitigation Measures **MM Bio 1** through **14**, impacts to biological resources would be less than significant.

4.3.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation Realignment Alternatives to the 2005 Project Alignment Alternative

The impacts and findings discussed in the 2005 PEIR related to biological resources are applicable to both the 2005 Project Alignment and the project Realignment Alternative and Realignment Alternative with Additional Connections, as appropriate. The Realignment Alternatives substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR. The analysis of biological resources contained within the 2005 PEIR does not specifically address the proposed realignment. However, the analysis conducted in this section of the SEIR/EIS is provided to make the 2005 PEIR adequate for the entire Riverside-Corona Feeder Project under CEQA and to cover all alignments and facilities for purposes of NEPA.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, WMWD'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:

- 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, regulations, or by the California Department of Fish and Game or 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 with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Related Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) prohibits "take" (harm or harassment [including to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct] of individuals of a protected species and, under certain circumstances, the destruction of habitat) of a Federally listed Endangered or Threatened species and will require incidental take permits or authorization through Section 7 Consultation. If the Federal action agency (USBR) determines that a project may adversely affect a listed species or designated critical habitat, formal consultation with the USFWS is required. The determination of whether or not the proposed action would be likely to jeopardize the species or adversely modify its critical habitat is contained in the biological opinion. If a jeopardy or adverse modification determination is made, the biological opinion must identify any reasonable and prudent alternatives that could allow the project to move forward.

California Endangered Species Act

California Endangered Species Act (Fish and Game Code 2050 et seq.) (CESA) 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 Department of Fish and Game (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 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 the CDFG.

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. Although the majority of the Realignment Alternatives consist of urban residential and commercial development certain common and special-status bird species, especially raptors, may utilize the site for breeding and/or seasonal foraging. 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 considered to utilize the site.

Federal Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the United States Army Corps of Engineers (ACOE) regulates discharges of dredged and/or fill material into waters of the United States. "Waters of the United States" are defined in ACOE regulations at 33 C.F.R. Part 328.3(a).

Navigable waters of the United States are those waters of the United States that are navigable in the traditional sense. Waters of the United States is a broader term than navigable waters of the United States and includes adjacent wetlands and tributaries to navigable waters of the United States and other waters where the degradation or destruction of which could affect interstate or foreign commerce.

California Fish and Game Code

The California Department of Fish and Game (CDFG), under Section 1600 of the Fish and Game Code, 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. CDFG 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 surface or subsurface flow that supports or has supported riparian vegetation." Lakes under the jurisdiction of CDFG may also include man-made features.

Stephens' Kangaroo Rat Habitat Conservation Plan

Portions of the alternative alignments are located within the boundary of the adopted Habitat Conservation Plan (HCP) for the endangered Stephens' kangaroo rat (SKR) implemented by the Riverside County Habitat Conservation Agency (RCHCA). The SKR HCP mitigates impacts from development on the SKR by establishing a network of preserves and a system for managing and monitoring them. Through implementation of the SKR HCP, more than $45 million has been dedicated to the establishment and management of a system of regional preserves designed to ensure the persistence of SKR in the plan area. This effort has resulted in the permanent conservation of approximately 50% of the SKR-occupied habitat remaining in the HCP area. Through direct funding and in-kind contributions, SKR habitat in the regional reserve system is managed to ensure its continuing ability to support the species.

Riverside County Integrated Plan (RCIP), 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 federal Endangered Species Act of 1973, as well as a Natural Communities Conservation Plan (NCCP) under the State NCCP Act of 2001. 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, Canyon Lake, Norco, 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 plan 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 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 of currently listed species and their habitat from development and covered improvement projects. It would also allow the incidental take of species that might be listed in the future. The MSHCP could be used as mitigation and permitting for incidental take associated with this project if WMWD applied to participate as a "Participating Special Entity" (PSE) with respect to this project under the MSHCP.

Design Considerations/Avoidance

Segments of the proposed RCF Realignment Alternative and Realignment Alternative with Additional Connections that extend across the Santa Ana River and other watered areas are planned to include jack and boring underneath the waterways where feasible. This would avoid impacts to the waterways, associated riparian vegetation, and habitat for sensitive species. The La Sierra Pipeline Connection will be constructed within the existing roadway all work, including staging areas and spoil storage, will occur within the existing roadway. This will avoid impacts to Stephens' kangaroo rat and California gnatcatcher habitat.

Potential Significant Impacts/Environmental Consequences

Threshold*: 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 U. S. Wildlife Service.*

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

Other impacts, such as loss of foraging habitat, can occur, although these areas or habitats are not directly removed by project development; i.e., indirect impacts. Indirect impacts can also involve the effects of increases in ambient levels of noise or light, unnatural predators (i.e., domestic cats and other non-native animals), competition with exotic plants and animals, and increased human disturbance such as hiking and dumping of green waste on site. Indirect impacts may be associated with the subsequent day-to-day activities associated with project usage, such as increased traffic use, permanent concrete barrier walls or chain link fences, exotic ornamental

plantings that provide a local source of seed, etc., which may be both short-term and long-term in their duration. These impacts are commonly referred to as "edge effects" and may result in a slow replacement of native plants by exotics, and changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundances in habitats adjacent to project sites.

Special-Status Plant Species

According to the Biological Report prepared by Glenn Lukos, several special-status plant species were found to have limited potential to occur within the Northern or Central Reaches of the proposed RCF realignment including California satintail, chaparral sand-verbena, Parry's spineflower, prairie wedge grass, Robinson's pepper-grass, and smooth tarplant. No potential for special status plant species would occur within the Monroe Alternative Alignment.

The California satintail and prairie wedge grass were determined to have limited occurrence potential at the proposed Santa Ana River crossing. The chaparral sand-verbena was identified as having limited occurrence potential within areas containing sandy soils in sage-scrub, and chaparral. The Parry's spineflower was determined to have the potential to occur within areas containing sandy or rocky soils in open habitats of chaparral and coastal sage scrub. Robinson's pepper grass was determined to have low potential to occur on site in scattered coastal sage scrub areas. Smooth tarplant was identified as having low occurrence potential and would be located in areas with alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grasslands, and disturbed habitats.

Potential impacts to California satintail and Prairie wedge grass will be avoided through design considerations. Jack and bore construction will be used for pipeline installation across the Santa Ana River. Due to the disturbed nature of the pipeline and alignment and the limited area of linear construction impact, the proposed project is not anticipated to result in a significant loss of habitat for Chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, and smooth tarplant. To further identify the potential direct impacts to these species (number of plants and/or area impacted), focused surveys are required for these species during their flowering season and prior to construction. If these plants occur within the construction footprint, impacts to these species may be considered significant. However, with implementation of **MM Bio 15**, impacts to special status plant species are considered **less than significant**.

The biological assessments for the Central Feeder Connection, Clay Street Connection, Mockingbird Connection, and La Sierra Pipeline Connection show that due to lack of suitable habitat, no special-status plant species will be impacted by the proposed project.

Special-Status Wildlife Species

No special-status animal species were observed within the proposed RCF realignment during field studies; however, 26 special-status animal species have the potential to occur within the study areas. The Monroe Alternative Alignment has no potential to support special status fish, reptiles, and mammals.

The proposed RCF realignment would consist mainly of temporary construction impacts. After construction, the disturbed area would be returned to level soil conditions and be allowed to return to its natural state. Within the alignment, American badger, if present, would only use the alignment area for foraging. The area would represent a very small proportion of the badgers foraging range, and the temporary loss of habitat during construction would be considered **less than significant**. The San Diego black-tailed jackrabbit was not observed during the habitat assessments. According to the Biological Report, if black-tailed jackrabbit are present, the species is present only in very low densities; and, potential temporary impacts to occupied habitat during project implementation would be considered **less than significant**.

Southern grasshopper mouse, northwestern San Diego pocket mouse, and Los Angeles pocket mouse have potential to occur within the seven acres of Riversidean Sage Scrub habitat along the project alignment (Northern and Central Reaches). If those species are not present or occupied habitat is avoided, impacts would be less than significant. If present, potential impacts to Los Angeles pocket mouse and northwestern San Diego pocket mouse may be significant without mitigation. With implementation of **MM Bio 16a and 16b**, potential impacts to northwestern San Diego pocket mouse and Los Angeles pocket mouse are considered **less than significant**.

Stephens' kangaroo rats (SKR) have the potential to occur within grasslands of the Mockingbird Tank Site project area. Due to presence of suitable habitat, focused surveys for SKR were conducted in December 2009. Based on the trapping results, SKR occur on portions of the site, and there will be direct impacts to SKR as a result of project implementation. All of Lot 20 (within which the Mockingbird tank and pump station would be built) and related pipeline construction are located within occupied SKR habitat. The occupied habitat within Lot 20 and the proposed pipeline totals 6.4 acres. The total occupied habitat within the APE equals 13.8 acres however not all of this area will be disturbed by the project, indirect effects could result.

If occupied habitat is avoided, impacts would be less than significant. If present, potential impacts to SKR may be significant without mitigation. With implementation of **MM Bio 23**, potential impacts to SKR are considered **less than significant**.

The proposed RFC realignment contains suitable habitat for burrowing owl. However, no burrowing owls were identified within the proposed RCF realignment or within the Monroe Alternative Alignment. Due to the disturbed nature of the pipeline alignment and the limited area of linear construction impact, the Realignment Alternative is not anticipated to result in a significant loss of habitat for burrowing owl. Wintering season and nesting season focused protocol surveys were conducted in suitable burrowing owl habitat within the Central Reach in December 2008 and in March and April 2009 by Glenn Lukos Associates, Inc. No burrowing owls were observed during these survey efforts in the project alignment or 500-foot buffer area. Potential burrows were identified but did not contain diagnostic sign of burrowing owl. Although burrowing owls were not observed during these survey efforts, construction activities could adversely impact burrowing owls if they establish active nests within the project alignment prior to construction. Construction noise and activity may disrupt normal breeding and nesting patterns or activities of this species. **MM Bio 17** is required to reduce potential impacts from the project construction on burrowing owls to **less than significant** levels.

Burrowing owl has the potential to occur within suitable habitat adjacent to and/or within the footprints of the Central Feeder Connection, Clay Street Connection, and Mockingbird Connection project areas. Due to the disturbed nature of the pipeline alignment and the limited area of linear construction impact, installation of the pipeline is not anticipated to result in a significant loss of habitat for burrowing owl. However, construction of the Mockingbird Tank and Clay Street Booster Station could result in the loss of foraging and burrow habitat, a potentially significant impact. Sign (pellets and suitable burrows) of burrowing owl presence was observed by the Brian F. Smith biologist during the Biological Assessment conducted in October 2009. Due to the presence of suitable habitat, wintering season protocol focused surveys for burrowing owl were conducted by Brian F. Smith and Associates during January and February of 2010. Within the Mockingbird Connection area, suitable habitat was encountered in several locations; however, neither burrowing owls nor evidence of their presence were observed. A nesting season survey (February 1 through August 31) will need to be conducted to confirm the presence/absence of burrowing owls at the Mockingbird Connection site. The Clay Street Connection area showed some marginal burrowing owl habitat; however, due to lack of suitable habitat, only pre-construction surveys would be required for both the Clay Street Connection and the Central Feeder Connection. **MM Bio 17** and **MM Bio 18** are required to reduce potential impacts from the project construction on burrowing owls to **less than significant** levels.

The coastal California gnatcatcher, a federally listed threatened species has the potential to occur in association with approximately seven acres of coastal sage scrub habitat scattered throughout the Northern Reach of the proposed RCF realignment. Coastal California gnatcatcher is not expected to occur within the Central Reach or Monroe Alternative alignments, due to the lack of suitable habitat. The temporary impacts from construction activities or permanent loss of occupied habitat would constitute a take of coastal California gnatcatcher, and would require authorization from USFWS. Any take of coastal California gnatcatcher would be expected to be a significant impact prior to mitigation. In order for the impact to be significant under CEQA, there would have to be a substantial adverse effect, either directly or through habitat modifications, on the coastal California Gnatcatcher. **MM Bio 19 and 24** below and **MM Bio 4 and 5** of the 2005 PEIR are required to reduce potential impacts from the project construction on coastal California gnatcatcher to **less than significant** levels.

The coastal California gnatcatcher also has the potential to occur in association with the Mockingbird Tank Site project area and adjacent to the La Sierra Pipeline Connection alignment. Due to the presence of suitable habitat, focused surveys for coastal California gnatcatcher were conducted in December of 2009 and January of 2010 at the Mockingbird Tank Site. One pair of gnatcatchers was detected in a northern patch of Riversidean sage scrub and the pair was observed on five of the nine visits to the Mockingbird Tank site. The sightings were clustered in an approximately 15 acre area. **MM Bio 4a and 4b, MM Bio 5 and MM Bio 24** below are required to reduce potential impacts from the project construction on coastal California gnatcatcher to **less than significant** levels.

The Delhi sands flower-loving fly is a federally listed endangered species with some potential to occur within the proposed RCF realignment. The Biological Report indicates records of Delhi sands flower-loving fly within the immediate vicinity of the proposed project and the Northern Reach of the alignment supports approximately 70 acres of potentially suitable habitat. The

temporary or permanent loss of occupied habitat would constitute a take of Delhi sands flower-loving fly, and would require authorization from USFWS. Any take of Delhi sands flower-loving fly would be expected to be a significant impact prior to mitigation. A focused survey shall be performed to determine presence or absence of Delhi sands flower-loving fly for suitable areas of the Northern Reach located in San Bernardino County. If the habitat is not occupied by Delhi sands flower-loving fly, then impacts to the species would be less than significant. If the habitat is occupied, take authorization from USFWS would be required. **MM Bio 20a and 20b** below are required to reduce potential impacts from the project construction on Delhi sands flower-loving fly to **less than significant** levels. In Riverside County, the project alignment passes through criteria cells 22 and 55 which include Delhi sands suitable for DSF habitat. Compliance with the MSHCP and payment of MSHCP fees will mitigate to a level of less than significant within this portion of Riverside County.

The least Bell's vireo is a federally-listed and state endangered species that is known to occur within the Santa Ana River (Central Reach) and has some potential to occur in association with southern willow scrub scattered throughout the proposed RCF realignment (Northern Reach). The majority of potentially suitable habitat is associated with the Santa Ana River crossing. The Central Reach traverses federally-designated critical habitat at the Santa Ana River. Potential impacts to least Bell's vireo will be avoided through design considerations. Jack and bore construction will be used for pipeline installation across the Santa Ana River. The temporary or permanent loss of occupied habitat within the Northern Reach would constitute a take of least Bell's vireo, and would require authorization from USFWS and CDFG. Any take of least Bell's vireo would be expected to be a significant impact prior to mitigation. Compliance with **MM Bio 3a and 3b,** and **MM Bio 5** would reduce potential impacts from the project construction on least Bell's vireo to **less than significant** levels.

The southwestern willow flycatcher is a federally and state-listed endangered species and has some potential to occur in association with riparian forest scattered throughout the proposed RCF realignment (Northern Reach). The majority of potentially suitable habitat is associated with the Santa Ana River crossing (Central Reach). Potential impacts to southwestern willow flycatcher will be avoided through design considerations. Jack and bore construction will be used for pipeline installation across the Santa Ana River. The temporary or permanent loss of occupied habitat within the Northern Reach would constitute a take of southwestern willow flycatcher, and would require authorization from USFWS and CDFG. Any take of southwestern willow flycatcher would be expected to be a significant impact prior to mitigation. With compliance with **MM Bio 3a and 3b** and **MM Bio 5**, impacts would be considered **less than significant**.

The Santa Ana sucker, a federally listed threatened species has some potential to occur in association with perennial streambed scattered throughout the Northern and Central Reaches of the proposed RCF realignment. The arroyo chub and Santa Ana speckled dace are also known to occur within the same areas. The Realignment Alternative also traverses federally-designated critical habitat at several locations, of which at least one occurs in San Bernardino County. Potential impacts to these species in the Central Reach will be avoided through design considerations. Jack and bore construction will be used for pipeline installation across the Santa Ana River. The temporary or permanent loss of occupied habitat in the Northern Reach would constitute a take of Santa Ana sucker and would require authorization from USFWS. Any take of

Santa Ana sucker or permanent loss of occupied arroyo chub or Santa Ana speckled dace habitat in the Northern Reach would be expected to be a significant impact prior to mitigation. With compliance with **MM Bio 21a** and **21b,** impacts to sensitive fish species from construction of the northern segment would be considered **less than significant**.

Additionally, construction of the proposed project may result in the discharge of sediment and other construction by-products. This will be minimized however, by compliance with the National Pollutant Elimination System (NPDES) General Construction Permit issued by the State Water Resources Control Board (SWRCB). Coverage under the general construction permit requires that a storm water pollution prevention plan (SWPPP) be prepared prior to construction activities for sites with a disturbance area of one acre or more. The SWPPP will incorporate applicable Best Management Practices (BMPs) to reduce loss of topsoil, substantial erosion, or discharge of polluted runoff associated with project construction. (See **MM Water Qual 1**, Section 4.11.) Compliance with the NPDES General Construction Permit, implementation of the SWPPP(s), and compliance with **MM Water Qual 1** will minimize potential impacts to water quality and therefore potential indirect impacts to special status fish and other wildlife species from construction activities.

The proposed project has the potential to remove vegetation (i.e., trees, shrubs, and ground cover) suitable habitat for nesting migratory birds, including raptors. Impacts to such species are prohibited under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Mitigation measures, including seasonal avoidance of vegetation removal and/or nesting bird surveys will ensure that migratory birds (and their nests) will not be directly harmed. Impacts to nesting migratory birds are **potentially significant** without mitigation; implementation of **MM Bio 22** will reduce this impact to **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, regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service.*

According to the Biological Report, the Realignment Alternatives have the potential to impact three sensitive habitats as designated by the CDFG. These include southern willow scrub, Riversidean sage scrub, and freshwater marsh. Sensitive habitat types are vegetation communities that support concentrations of sensitive plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although sensitive habitats are not necessarily afforded legal protection unless they support protected species, potential impacts to them may increase concerns and mitigation suggestions by resources agencies.

The Biological Assessments conducted by Brian F. Smith for the additional facilities show that La Sierra Connection has the potential to impact disturbed Riversidean sage scrub, Riversidean sage scrub, and southern willow scrub communities, and that the proposed Mockingbird Connection has the potential to disturb Riversidean sage scrub community.

The riparian habitats described below provide suitable habitat for several special-status species with potential to occur on site including white-tailed kite, long-eared owl, two-striped garter

snake, least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, yellow warbler and yellow-breasted chat.

Southern willow scrub communities are designated by the DFG and CNDDB with a Sensitivity of 2.1 "very threatened" (S2.1) and "Occurs in 6 to 20 known locations and/or 2,000 to 10,000 acres of habitat remaining." The proposed RCF realignment contains approximately 17 acres of southern willow scrub community. As this area is generally located adjacent to the Santa Ana River, and construction methods in this area shall include boring and will avoid disturbing sensitive plant communities; therefore, through project design, impacts to riparian habitat and other sensitive habitat are considered **less than significant**.

Riversidean sage scrub habitat provides suitable habitat for several of the special status species observed on site or with potential to occur on site including chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, coastal California gnatcatcher, northern red diamond rattlesnake, San Diego horned lizard, San Diego black-tailed jackrabbit, Stephen's kangaroo rat, San Diego desert woodrat, orange-throated whiptail, Los Angeles pocket mouse, San Diego pocket mouse, and southern grasshopper mouse.

A portion of the proposed RCF realignment consists of Riversidean sage scrub (RSS). RSS quality varies depending upon the level of disturbance with lower functioning areas that are characterized by heavy disturbance and a proportion of non-native dominance resulting from commercial disturbance, off-road vehicle use, or crushing and trash dumping. Riversidean sage scrub is designated by the DFG and CNDDB with a Sensitivity of 3.1 "very threatened" (S3.1) and "Occurs in 21 to 80 known locations and/or 10,000 to 50,000 acres of habitat remaining." The proposed RCF realignment contains approximately 7.2 acres of RSS community. As this area is generally located adjacent to the pipeline alignments which primarily occur in existing roadways, impacts through project design are considered **less than significant**. Portions of the Added Connections contain approximately 82.1 acres of RSS. The loss of RSS with the potential to support sensitive plant and wildlife species is less than significant with implementation of mitigation measures outlined below.

The freshwater wetland habitat described below may provide suitable habitat for several special-status species with potential to occur on site including arroyo chub, Santa Ana speckled dace, Santa Ana sucker, southwestern pond turtle, and two-striped garter snake.

In the proposed RCF realignment, the Coastal and Valley Freshwater Marsh association consists of mainly southern cattail (*Typha domingensis*) located in a constructed detention basin associated with a gravel mining operation. Freshwater Marsh is designated by the DFG and CNDDB with a Sensitivity of 2.1, "very threatened" (S2.1) and "Occurs in 6 to 20 known locations and/or 2,000 to 10,000 acres of habitat remaining." The proposed RCF realignment contains approximately 0.8 acre of Coastal and Valley Freshwater Marsh communities. As this area is generally located adjacent to the Santa Ana River, and construction methods in this area shall include boring, impacts through project design are considered **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.*

As discussed in the 2005 PEIR, the Santa Ana River at the proposed crossing is under the jurisdiction of the CDFG, ACOE, and Regional Water Quality Control Board (RWQCB). Tunneling techniques, in themselves, will result in no direct impacts to wildlife or vegetation. The Biological Report indicates the proposed RCF realignment contains streambeds and associated riparian habitat that support wildlife under the jurisdiction of CDFG, waters of the United States under the jurisdiction of the ACOE and RWQCB. The Added Connections do not contain wetlands. To minimize impacts to wetland habitats, implementation of **MM Bio 6 through 13** of the 2005 PEIR shall be implemented. With mitigation impacts to wetlands are considered **less than significant**.

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

As described in the 2005 PEIR, most of the proposed project site and surrounding lands are geographically located in areas that are highly degraded from industrial and residential development. However, the project will traverse across several local wildlife corridors including the Santa Ana River crossing.

Due to the existing patterns of urbanization within the project vicinity that exhibit very limited wildlife habitat, the subsurface nature of the proposed pipeline, and the small footprint of the construction zone, impacts on the movement of any resident or migratory fish or wildlife species or on established native resident or migratory wildlife corridors are expected to be less than significant.

Threshold: *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

The proposed RCF realignment will not conflict with findings regarding local policies or ordinances discussed in the 2005 PEIR.

The City of Riverside General Plan 2010 contains a policy that recognizes and protects trees because of their cultural or historic importance. This policy is discussed further in the Cultural Resources and Aesthetics sections of this Supplemental EIR (Sections 4.1 and 4.4).

Most of the jurisdictions along the project alignment, including the cities of San Bernardino, Colton, Riverside, and the county of Riverside, have policies regulating the removal of or injury to trees and other landscaping. However, these policies protect trees as an aesthetic resource rather than a biological resource. These policies are discussed further under Aesthetics (Section 4.1).

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.*

The proposed RCF realignment will not conflict with findings regarding local policies or ordinances discussed in the 2005 PEIR.

Riverside County has prepared and approved the Multiple Species Habitat Conservation Plan (MSHCP) which was designed to protect 146 species and their associated habitats throughout Western Riverside County, including its 14 member Cities. The Riverside county portion of the proposed project is located within the jurisdiction of the MSHCP, but WMWD is not a permitee under the MSHCP.

The MSHCP is set up by defining Criteria Area Cells roughly based on 160 acre squares. These Criteria Area Cells were established because they contain habitat and resources to support some of the 146 MSHCP protected species. The goal of the MSHCP is to conserve 153,000 acres of land in these Criteria Area Cells throughout the County and cities within Riverside County. If a proposed development project is located within a Criteria Area Cell, then the Regional Conservation Authority (RCA) (set forth by the MSHCP) will review the proposed development, the site resources, and any biological data pertaining to the site. If the RCA determines that the proposed development site supports protected species and/or their habitat, they may offer to purchase the property as inclusion in the overall conservation area under the MSHCP. Additionally, all development projects within the County of Riverside, or within any of the 14 cities of the County, shall be required to pay an MSHCP mitigation fee which will set aside money for the purchase of additional lands for conservation.

As a water district, Western Municipal Water District (WMWD) has the option of participating as a "participating special entity" in the MSHCP.

The proposed RCF realignment extends through primarily developed, urban areas; those areas are not included in a Criteria Area Cell under the MSHCP. Therefore, the project will not conflict with the MSHCP, regardless of whether or not WMWD decides to participate in the MSHCP.

The project is located within the Habitat Conservation Plan (HCP) for the Stephens' kangaroo rat (SKR) in Western Riverside County, California and associated fee area. However, WMWD is not a permittee subject to the SKR HCP, and the project is not located within a core reserve area of the plan. Adoption of the project will not conflict with the SKR HCP.

Since there are no other HCPs applicable to the proposed RCF realignment and the project will not conflict with the MSHCP; impacts are considered **less than significant**.

Realignment Alternatives Proposed Mitigation Measures/Minimization

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

*As described above, mitigation measures **MM Bio 1, MM Bio 3** through **MM Bio 12, and MM Bio 14** set forth in the 2005 PEIR are still applicable to the proposed project RCF Pipeline Realignment Alternatives (as updated based on current studies and to include Realignment). Mitigation measure **MM Bio 2** is applicable only to the 2005 Project Alignment crossing of the Santa Ana River (within Reach A), which is replaced with the new alignment of the Central Reach of the proposed RCF realignment. Because this SEIR/EIS contains a Stormwater/Water Quality section which was not a part of the 2005 Project Alignment PEIR, potential construction impacts associated with dewatering activities are addressed by **MM Water Qual 1** in Section 4.11 which replaces **MM Bio 13**. Mitigation measures have been added by this SEIR/EIS to address potential impacts related to the construction of the proposed Realignment Alternative pipeline and/or the Realignment Alternative with Added Connections, as applicable to reflect USBR consultation with USFWS under Section 7 of the Endangered Species Act, and possible PSE status for WMWD under the MSHCP.*

MM Bio 1: In Reach A or Central Reach crossings of the Santa Ana River, the dewatering activities shall take place during the period from October 1 through the end of February. This is within the season when the dominant plant species of these riparian communities are dormant. Dewatering outside of this period could subject these communities to stress, desiccation, and potential defoliation. In addition, adherence to this suggested schedule avoids the generally accepted breeding chronology for nesting by the least Bell's vireo and southwestern willow flycatcher in southern California (USFWS b, Sogge *et al.*), obviating the need for focused surveys that may be required, due to the project's potential to have significant noise impacts to these two listed migratory species. This suggested schedule also avoids the breeding season of the federally listed arroyo toad, generally regarded as mid-March through July 1 (USFWS c), thereby avoiding potential impacts to this species as well. Impacts to the arroyo toad during the breeding season would be direct, including physical damage to mature individuals and interference with breeding activities. Should it not be feasible to adhere to this schedule, additional mitigation measures are required, as specified below.

MM Bio 2: Should the construction occur during the breeding season for the arroyo toad (March 15–July 1), a protocol-level survey shall be conducted at the Santa Ana River (Reach A), to determine presence/absence. If the arroyo toad is found to be present in the vicinity of Reach A, incidental take permits (through either Section 7 or Section 10) shall be applied for. The survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

MM Bio 3a: Should construction occur during the breeding season for the least Bell's vireo (LBV) or southwestern willow flycatcher (SWWF) (March 15 through September 15), protocol-level surveys shall be conducted prior to construction at the following locations: the Santa Ana River (Reach A or Central Reach), Spring Brook wash (Reach B), the riparian vegetation along the Mockingbird Canyon alignment (Reach E), potentially suitable habitat in the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report), and the drainage located south of the Corona Landfill (Reach H); or presence can be assumed. If surveys document the presence of LBV and SWWF, impacts to LBV and SWWF would be mitigated below the level of significance when occupied riparian forest/woodland/scrub is fenced and direct impacts are avoided and construction within 500 feet of occupied habitat occurs only between September 15th and March 15th to avoid indirect impacts to nesting LBV. If avoidance is not feasible, a temporary noise barrier shall be used during construction, at the appropriate location(s), in coordination with CDFG and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less, at the edge of breeding habitat. If surveys indicate that these species are not present, this measure will not be required. Additional or alternative measures to avoid or minimize adverse project effects to LBV and SWWF, as identified by the USFWS in Section 7 Consultation and CDFG, shall be implemented. However, if all avoidance measures cannot be implemented such that "take" of LBV and SWWF is avoided, Take Authorization from USFWS through Final Biological Opinion and Incidental Take Statement and from CDFG through issuance of a CESA ITP or compliance with Fish and Game Code Section 2080.1, will be obtained.

MM Bio 3b: For the Santa Ana River (Central Reach), Spring Brook wash (Reach B), the riparian vegetation along the Mockingbird Canyon alignment (Reach E), potentially suitable habitat in the Northern Reach in Riverside County (as identified in the Glenn Lukos Associates, Inc. 2008 report), and the drainage located south of the Corona Landfill (Reach H) potential adverse effects to LBV and SWWF will be reduced to less than significant levels with WMWD participation in the MSHCP as a Participating Special Entity (PSE) and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 3a** in Riverside County is required.

MM Bio 4a: Should construction occur during the breeding season for the coastal California gnatcatcher (March 15 through September 15), a protocol-level survey shall be conducted prior to construction at Spring Brook wash (Reach B) and the Northern Reach (within Riverside County as identified in the Glenn Lukos Associates, Inc. 2008 report), in the vicinity of the proposed project; or presence can be assumed. Focused presence/absence surveys consist of either 1) six surveys conducted no less than one week apart between March 15 and June 30 or 2) nine surveys conducted no less than two weeks apart during the remainder of the year. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit. Surveys in which the species is not detected are considered valid for one year and should be repeated within one year of work commencing.

If surveys document absence of CAGN no additional avoidance or minimization measures are required. If surveys document the presence of CAGN impacts to CAGN would be mitigated below the level of significance when occupied coastal sage scrub is fenced and direct impacts are avoided and construction within 500 feet of occupied habitat occurs only between September 1 and February 15 to avoid indirect impacts to nesting CAGN. If avoidance is not feasible, a

temporary noise barrier shall be used during construction, at the appropriate location(s), in coordination with CDFG and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less at the edge of breeding habitat. Additional or alternative measures to avoid or minimize adverse project effects to CAGN, as identified by the USFWS in Section 7 Consultation, shall be implemented. However, if all avoidance measures cannot be implemented such that "take" of LBV and SWWF is avoided Take Authorization from USFWS through Final Biological Opinion and Incidental Take Statement and from CDFG through issuance of a CESA ITP or compliance with Fish and Game Code Section 2080.1 will be obtained.

MM Bio 4b: For the Spring Brook wash crossing (Reach B) and Northern Reach of the project alignment in Riverside County potential adverse effects to CAGN will be reduced to less than significant levels with WMWD participation in the MSHCP as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 4a** in Riverside County is required.

MM Bio 5: In addition to the use of the temporary noise barrier, a qualified on site noise monitor (approved by the local jurisdiction and WMWD) shall be present during all construction activities conducted near habitat that has been identified in the surveys to host the arroyo toad, least Bell's vireo, southwestern willow flycatcher, or coastal California gnatcatcher. The noise monitor shall ensure through on site noise meter readings that the temporary barriers are effective at reducing construction noise to 60 dBA or less. If 60 dBA is exceeded, the noise monitor shall work with the Contractor to make adjustments in the barriers or construction activities to reduce noise to 60 dBA or less.

MM Bio 6: Construction staging areas shall be located outside of riparian areas and away from (to the greatest distance feasible) riparian areas.

MM Bio 7: Construction activities adjacent to riparian and/or wetland areas shall be minimized where feasible. If open cut trenching is used in the Spring Brook drainage crossing**s** or Central Reach instead of boring, direct loss of wetlands may occur and permits and mitigation will be required. Such mitigation may include restoration on site, removal of invasive species, or off-site purchase. See **MM Bio 8** below.

MM Bio 8: A formal jurisdictional delineation for potential State and Federal wetland impacts will be conducted at Reaches A and B or the Northern Reach.

MM Bio 9: A project-wide 1602 Streambed Alteration Agreement prepared in accordance with CDFG requirements shall be secured by WMWD as the jurisdictional delineation warrants and shall include mitigation measures that are sufficient to reduce direct and indirect impacts to riparian habitat to a level below significant. The Agreement may include some or all of the following:

- Avoid impacts where possible by shifting the project location or construction timing.
- Minimize impacts.
- Remove invasive species.
- Purchase off-site habitat credits.
- Create and/or restore natural communities and prepare a monitoring and maintenance plan for these areas.

- Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible.
- Limit construction activity to daylight hours to minimize potential impacts related to artificial lighting.
- Require the presence of a qualified biological monitor during all construction activities that are within or near sensitive habitats and areas that have been identified to host the arroyo toad, least Bell's vireo, southwestern willow flycatcher, coastal California gnatcatcher, Stephens' kangaroo rat, or San Bernardino kangaroo rat.

MM Bio 10: An ACOE Section 404 permit shall be secured as the jurisdictional delineation warrants. The Nation-wide Section 404 Permit will apply to the project for linear utility projects. The Corps may require the implementation of measures similar to those listed for the Section 1602 Streambed Alteration Agreement as part of the Section 404 Permit approval process. Implementation of these measures will mitigate potential impacts to the bed and banks of the Santa Ana River and any other jurisdictional drainage.

Should open-trenching techniques be utilized to install the pipeline across the Santa Ana River, consultation with the U.S. Fish and Wildlife Service will be initiated to determine whether or not the proposed project would result in significant impacts to Critical Habitat for the Santa Ana sucker. If warranted incidental take permits (through Section 7) shall be applied for. The U.S. Fish and Wildlife Service shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat.

MM Bio 11: In conjunction with the ACOE Section 404 Permit, a Section 401 Water Quality Certification from the California Regional Water Quality Control Board shall be secured.

MM Bio 12: Any discharge into navigable waters, or "waters of the United States" shall also comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Clean Water Act. Compliance with these provisions shall result in certification from the Regional Board that verifies that the project complies with all water quality standards.

MM Bio 14: If WMWD does not participate in the MSHCP as a PSE and should open-trenching techniques be utilized to install the pipeline across the Santa Ana River, a protocol-level survey shall be conducted at the Santa Ana River (Reach A or Central Reach), to determine presence/absence of the Santa Ana River woolly-star, slender-horned spineflower, Chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, smooth tarplant, prairie wedge grass, and /or California satintail, within suitable habitat in the construction footprint. If one or more of these plant species are found to be present in the footprint, incidental take permits (through Section 7) shall be applied for. The survey reports shall identify further measures to be taken to avoid or minimize adverse project effects to the protected species and their habitat. If WMWD does participate in the MSHCP as a PSE, a focused Narrow Endemic Plant Species Survey Area (NEPSSA) survey shall be conducted within suitable habitat in the project alignments (Central and Northern Reach and Reach H, La Sierra Pipeline, and Clay Street Connection).

MM Bio 15: In San Bernardino County focused surveys shall be conducted within potentially suitable habitat for Chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, and smooth tarplant within the Central Reach and for Parry's spineflower, Robinson's pepper-grass,

and smooth tarplant within the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report) by a qualified biologist during the flowering season of these species and prior to construction activities. If special status plant species are found to be present in the footprint, further measures as recommended by a qualified biologist shall to be taken to avoid or minimize adverse project effects to these species and their habitat.

MM Bio 16a: In San Bernardino County focused surveys shall be conducted within potentially suitable habitat for northwestern San Diego pocket mouse and Los Angeles pocket mouse in the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report) by a qualified biologist during the appropriate season of these species and prior to construction activities. If these species are found to be present in the footprint, occupied habitat shall be fenced and avoided. If occupied habitat cannot be avoided further measures as recommended by a qualified biologist and in consultation with the California Department of Fish and Game shall to be taken to avoid or minimize adverse project effects to these species and their habitat.

MM Bio 16b: In Riverside County potential adverse effects to northwestern San Diego pocket mouse and Los Angeles pocket mouse in the Northern and Central Reaches (as identified in the Glenn Lukos Associates, Inc. 2008 report) will be reduced to less than significant levels with WMWD participation in the MSHCP as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 16a** within Riverside County is required.

MM Bio 17: If WMWD does not participate in the MSHCP as a PSE a pre-construction presence/absence surveys for western burrowing owl (BUOW) shall be conducted in suitable habitat along the Northern and Central Reaches and Monroe Alternative (as identified in the Glenn Lukos Associates, Inc. 2008 report). Surveys shall be conducted within 30 days prior to disturbance and in accordance with the California Department of Fish and Game and California Burrowing Owl Consortium guidelines. Take of active nests shall be avoided. Passive exclusion (use of one way doors and collapse of burrows) will occur if owls are present outside of the nesting season. (The nesting season is February 1 through August 31). If WMWD does participate in the MSHCP as a PSE, a focused survey for burrowing owl following current survey protocol (approved by RCA) shall be conducted in suitable habitat along the Northern and Central Reaches and Monroe Alternative (as identified in the Glenn Lukos Associates, Inc. 2008 report).

MM Bio 18: To offset the loss of burrowing owl foraging and burrow habitat from construction of the Mockingbird Tank and Clay Street Pump Station, a minimum of 6.5 acres of foraging habitat per pair or unpaired resident bird, shall be acquired and permanently protected if WMWD does not participate in the MSHCP as a PSE. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to CDFG. The project sponsor shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to CDFG. Acquisition and protection of mitigation property shall be conducted in accordance with the CDFG Staff Report on Burrowing Owl Mitigation, October 17, 1995 and/or consultation with CDFG. If WMWD does participate in the MSHCP as a PSE, to offset the loss of occupied burrowing owl habitat conservation of habitat shall be provided in accordance with Species Accounts, Burrowing Owl Objective 5 and payment of MSHCP mitigation fees.

MM Bio 19: In San Bernardino County within potentially suitable habitat in the Northern Reach (as identified in the Glenn Lukos Associates, Inc. 2008 report), presence of this species can be assumed or focused coastal California gnatcatcher (CAGN) surveys are required following United States Fish and Wildlife (USFWS) protocol. Focused presence/absence surveys consist of either 1) six surveys conducted no less than one week apart between March 15 and June 30 or 2) nine surveys conducted no less than two weeks apart during the remainder of the year. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit. Surveys in which the species is not detected are considered valid for one year and should be repeated within one year of work commencing.

If surveys document absence of CAGN no additional avoidance or minimization measures are required. If surveys document the presence of CAGN impacts to CAGN would be mitigated below the level of significance when occupied coastal sage scrub is fenced and direct impacts are avoided and construction within 500 feet of occupied habitat occurs only between September 1 and February 15 to avoid indirect impacts to nesting CAGN. If avoidance is not feasible additional measures to avoid or minimize adverse project effects to CAGN, as identified by the USFWS in Section 7 Consultation, shall be implemented.

MM Bio 20a: In San Bernardino County within potentially suitable habitat for Delhi sands flower-loving fly (DSF) in the Northern Reach of the project alignment (as identified in the Glenn Lukos Associates, Inc. 2008 report) focused surveys shall be conducted following USFWS protocol by a qualified biologist who holds the appropriate Section 10(a)(1)(A) permit. Presence/absence surveys consist of bi-weekly surveys from August 1 to September 20 for a two-year period within areas of suitable habitat. If surveys document the presence of DSF impacts to DSF would be mitigated below the level of significance when occupied habitat is fenced and direct impacts are avoided. If avoidance is not feasible additional measures to avoid or minimize adverse project effects to DSF and their habitat, as identified by the USFWS in Section 7 Consultation, shall be implemented. The additional measures may include, but not be limited to, some or all of the following:

- Avoid impacts where possible by shifting the project location or construction timing.
- Maintain construction sites in sanitary conditions at all times.
- Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible.
- Place extracted, surplus, suitable Delhi sands in current DSF conservation areas/banks.
- Harvest sands and provide to a habitat bank established for the DSF.

MM Bio 20b: For the northern reach of the project alignment in Riverside County potential adverse effects to DSF will be reduced to less than significant levels with WMWD participation in the MSHCP (including compliance with Species Accounts, Delhi Sands flower-loving fly Objective 1B) as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 20a** is required.

MM Bio 21a: In San Bernardino County within potentially suitable habitat for the Santa Ana sucker (SAS) in the Central and Northern Reach of the project alignment (as identified in the Glenn Lukos Associates, Inc. 2008 report) focused surveys shall be conducted following

USFWS protocol by a qualified biologist who holds the appropriate Section 10(a)(1)(A) permit. Focused surveys for SAS shall also include presence/absence of arroyo chub and Santa Ana speckled dace. If surveys document the presence of SAS impacts to SAS would be mitigated below the level of significance when occupied habitat is fenced and direct impacts are avoided and Best Management Practices ensure that no change in water quality will occur during or after construction. If surveys document absence of SAS, arroyo chub, and Santa Ana speckled dace no additional avoidance or minimization measures are required. If avoidance is not feasible additional measures to avoid or minimize adverse project effects to SAS and their habitat, as identified by the USFWS in Section 7 Consultation, shall be implemented. The additional measures may include, but not be limited to, some or all of the following:

- Avoid impacts where possible by shifting the project location or construction timing.
- Construction sites should be maintained in sanitary conditions at all times.
- Avoid sensitive habitats by placing construction staging areas as far away from them as is feasible.

Implementation of the mitigation measures for SAS would be expected to reduce potentially significant impacts to arroyo chub and Santa Ana speckled dace below a level of significance.

MM Bio 21b: For the Central and Northern Reaches of the project alignment in Riverside County, potential adverse effects to SAS will be reduced to less than significant levels with WMWD participation in the MSHCP as a PSE and payment of MSHCP mitigation fees. If WMWD does not participate in the MSHCP as a PSE, compliance with **MM Bio 21a** is required.

MM Bio 22: The removal of potential nesting vegetation of sensitive bird species will be conducted outside of the nesting season (February 1 to August 31) to the extent that this is feasible. If vegetation must be removed during the nesting season, a qualified biologist will conduct a nesting bird survey of potentially suitable nesting vegetation prior to removal. Surveys will be conducted no more than three (3) days prior to scheduled removals. If active nests are identified, the biologist will establish buffers around the vegetation containing the active nest (500 feet for raptors and 200 feet for non raptors). The vegetation containing the active nest will not be removed, and no grading will occur within the established buffer, until a qualified biologist has determined that the nest is no longer active (i.e., the juveniles are surviving independent from the nest). If clearing is not conducted within three days of a negative survey, the nesting survey must be repeated to confirm the absence of nesting birds.

MM Bio 23: Temporary impacts from construction activities and permanent impacts from development of the Mockingbird Tank site on occupied Stephens' kangaroo rat habitat will be mitigated through payment of the Riverside County Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) Mitigation Fees.

MM Bio 24: Section 7 Consultation with USFWS or participation in the MSHCP as a Participating Special Entity (PSE) shall be completed for temporary impacts (both direct and indirect) from construction activities and permanent impacts from development of the Mockingbird Tank site on occupied California gnatcatcher habitat. Mitigation for the loss of occupied habitat will be achieved by acquisition of replacement habitat at a 1:1 ratio that is biologically equivalent to the property being disturbed, as agreed upon by USFWS or compliance with the MSHCP and payment of MSHCP mitigation fees.

MM Bio 25: Should jack and bore (also known as horizontal directional drilling) techniques be utilized to install the pipeline under CDFG or U.S. Army Corps of Engineers jurisdictional waterways (such as the Santa Ana River), a Frac-Out Contingency Plan (included in Appendix D – Biological Resources of the SEIR/EIS) shall be implemented by the contractor for the duration of drilling activities.

Realignment Alternatives Determination of Significance under CEQA

Based on the biological resource evaluations prepared by Glenn Lukos Associates and Brian F. Smith and Associates (Appendix C), and after the mitigation measures, avoidance, and minimization approaches identified above are implemented, potential adverse impacts associated with special-status species; both plant and wildlife, as well as special-status communities/habitats, will be reduced to a **less than significant** level.

4.3.4 No Project/Action Alternative

The No Project/Action Alternative will have no affect on sensitive species or habitats because nothing will be built.

4.4 CULTURAL RESOURCES/PALEONTOLOGY

Potential impacts related to the destruction of a unique paleontological resource or unique geologic feature were found to have less than significant impacts in the Initial Study/NOP prepared for the this project in 2008 (Appendix A). The foci of this discussion are archaeological resources, historical resources, and unknown human remains, and the project's potential to alter those resources through construction and operation of the revised alignment. A summary of the Cultural Resources section of the 2005 Certified Program EIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment) is included in the following discussion.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Brian F. Smith & Associates, *A Cultural Resource Report for the Central Feeder Connection Element of the Riverside Corona Feeder Project, San Bernardino, California,* September 24, 2009; revised April 5, 2010. (Appendix E)
- Brian F. Smith & Associates, *A Cultural Resource Report for the Clay Street Connection Element of the Western Municipal Water District's Riverside-Corona Feeder Project, Riverside, California,* September 24, 2009; revised April 5, 2010. (Appendix E)
- Brian F. Smith & Associates, *A Cultural Resource Report for the La Sierra Pipeline Element of the Western Municipal Water District's Riverside Corona Feeder Project, Riverside, California,* September 24, 2009; revised April 5, 2010. (Appendix E)
- Brian F. Smith & Associates, *A Cultural Resource Report for the Mockingbird Connection Element of the Western Municipal Water District's Riverside Corona Feeder Project, Riverside, California,* December 3, 2009; revised March 30, 2010. (Appendix E)
- Brian F. Smith & Associates, *Paleontological Resource Assessment, Clay Street Connection (Pedley) and Central Feeder Connection (Redlands), Riverside-Corona Feeder Project, Riverside and San Bernardino Counties, California,* September 15, 2009. (Appendix E)
- Brian F. Smith & Associates, *Paleontological Resource Assessment, La Sierra Avenue Pipeline Alignment, Riverside-Corona Feeder Project, Lake Mathews-Arlington Mountain area, Riverside County, California,* September 15, 2009. (Appendix E)
- Brian F. Smith & Associates, *Paleontological Resource Assessment, Mockingbird Connection, Riverside-Corona Feeder Project, Arlington Heights, Riverside, and adjacent unincorporated Riverside County, California,* September 15, 2009. (Appendix E)
- Statistical Research Inc., *Cultural Resources Assessment of the Riverside-Corona Feeder Alternative Alignments, San Bernardino and Riverside Counties, California,* April 2009. (Appendix E)
- City of Colton, *Final Preliminary General Plan for the City of Colton,* May 5, 1987. (Available at www.ci.colton.ca.us/CD_Plan.html, accessed on July 31, 2009.)

- City of Corona Community Development Department, *City of Corona General Plan*, March 17, 2004. (Available at http://www.discovercorona.org/index.cfm?section=City%20Departments&page=Community%20Development&cat=Planning%20Division&viewpost=2&ContentId=315, accessed on July 31, 2009.)
- City of Rialto, *Municipal Code*, March 31, 1992. (Available at http://www.municode.com/Resources/gateway.asp?pid=16575&sid=5, accessed on July 31, 2009.)
- City of Riverside Planning Department, *General Plan 2025*, November, 2007. (Available at www.riversideca.gov/planning/cityplans.asp, accessed on December 28, 2008.)
- City of San Bernardino Development Services Department, Division of Planning, *San Bernardino General Plan*, November 1, 2005. (Available at www.ci.san-bernardino.ca.us/depts/devserv/planning/default.asp, accessed on December 28, 2008.)
- County of Riverside, *Riverside County Integrated Project General Plan*, *County of Riverside*, Adopted October 7, 2003. (Available at www.rctlma.org/genplan/default.aspx, accessed on December 28, 2008.)
- County of San Bernardino Land Use Services Department, *San Bernardino 2007 General Plan*, March 13, 2007. (Available at www.sbcounty.gov/landuseservices/general_plan/Default.asp, accessed on December 29, 2008.)

The above referenced *Cultural Resources Assessments and Paleontological Assessments* are archaeological surveys of the proposed Riverside-Corona Feeder Realignment and includes fieldwork which involved an intensive pedestrian survey of all accessible portions of a 100 foot-wide (30 m) corridor on either side of the area of potential effects (APE).

4.4.1 Setting/Affected Environment

The project alternatives are located within the boundaries of the cities of Colton, Corona, Grand Terrace, Redlands, Rialto, Riverside, and San Bernardino, and unincorporated areas of the counties of Riverside and San Bernardino.

The 2005 Project Alignment Alternative Includes Reaches A though H, with Reach A starting in San Bernardino and Reach H ending in Corona. The majority of this alternative is located within the City of Riverside (Reaches B through H).

The proposed Riverside-Corona Feeder Realignment Alternative separated into two portions referred to as the Northern Reach and the Central Reach, plus generally Reaches E through H of the 2005 Project Alignment. The Northern Reach will span from the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino to the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County. The Central Reach will span from the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County to connect to the approved Riverside-Corona Feeder alignment near the intersection of Jackson Street and Cleveland Street in the City of Riverside. The project also proposes an optional

alignment on a portion of the Central Reach. The optional alignment would change the proposed realignment between the intersection of Jackson Street and Colorado Avenue, in the City of Riverside, and the intersection of Cleveland Avenue and Irving Street, in the City of Riverside.

The Realignment Alternative with Additional Connections (Preferred Alternative) includes all the facilities of the Realignment Alternative plus four additional facilities that include: the Central Feeder Connection, the Clay Street Connection, the Mockingbird Connection and the La Sierra Pipeline Connection.

Native American Cultural History

The RCF alignments are located in an area of uncertain ethnographic occupancy. To the north and east were the Serrano, who occupied the San Bernardino Valley and Mountains. To the east were the Cahuilla, whose territory encompassed the San Gorgonio Pass, San Jacinto Mountains, and Colorado Desert. The Luiseño lived to the south, and the Gabrielino extended westward from the Jurupa area to the Pacific Coast. Some ethnographic studies have attributed the project area to the Gabrielino, another shows it extending from Serrano territory on the north to Gabrielino territory on the south, and yet another shows it extending from Serrano territory on the north to Luiseño territory on the south. Finally, the area is also sometimes shown in Cahuilla territory, although this may reflect presence of Cahuillas from the San Jacinto Mountains who moved into the San Bernardino Valley and Riverside areas during historical times to work in agriculture and as domestic help.

Aboriginally, all were hunters and gatherers who utilized both large and small game, as well as numerous plant resources, for food. Large animals such as deer, pronghorn, and mountain sheep were hunted with bow and arrows, while smaller animals such as rabbits, hares, and various rodents were taken with throwing sticks, nets, and snares. Piñon nuts and acorns from several species of oak formed the staples of the diet, supplemented by yucca stalks and flowers, seeds from holly-leaved cherries, chia and other sages, fruits and berries, and roots, tubers, and greens.

The ethnohistoric settlement pattern consisted of permanent villages located in proximity to reliable sources of water, and within range of a variety of floral and faunal food resources, which were exploited from temporary camp locations surrounding the main village. There is some suggestion in the ethnographic record that a Gabrielino village known as Hurungna, for which the later Jurupa Rancho was named, was located along the Santa Ana River in the vicinity of the project's river crossing. However, well-documented ethnographic village sites are otherwise absent in the project area, possibly as a result of early disruption of native culture in the area by Spanish mission activities.

Today, the descendants of the Native American groups from the project region are affiliated with the San Manuel Band of Mission Indians in Highland, the Soboba Band of Mission Indians in San Jacinto, and the Pechanga Band of Mission Indians in Temecula.

History of the Area – Post-European Context

The historical era in San Bernardino and Riverside counties can be divided into three distinct periods: the Spanish Mission period, the Mexican Rancho period, and the American period.

The Spanish Mission period in San Bernardino and Riverside counties can be defined by the Spanish exploration of the area beginning in 1769 and the establishment of the San Diego Presidio and the Missions San Diego, San Luis Rey, and San Juan Capistrano. The establishment of missions progressed to the north eventually reaching the larger, inland valleys. San Gabriel Mission was established in the heart of the Los Angeles Basin in 1771 and served as a staging area for local exploration and settlement in the years that followed.

In 1774, the expedition of San Bautista de Anza crossed the Santa Ana River in the Colton-Riverside area on its way to the San Gabriel Mission. The priest serving the expedition, Father Francisco Garcés, noted in his journal an Indian village, or ranchería, near the river. The ranchería was later identified as Jurupa, located at a constriction in the Santa Ana River now known as the Riverside or Pedley Narrows. Following several expeditions to find a suitable location for an asistencia, or mission outpost in the San Bernardino Valley, in 1810, Father Francisco Dumetz established a small capilla (chapel) on high ground between what is now Colton and the community of Urbita Springs at Bunker Hill. With the chapel established, called Politana, Dumetz began the work of missionizing the local Serranos. In 1818, Leandro Serrano, Riverside County's first European resident, obtained permission from the padres at Mission San Luis Rey to take five leagues of land in Temescal Valley.

In 1821, Mexico successfully fought for independence from Spain. The subsequent Secularization Act of 1833 marked the end of the Mission period and the return of the secularized mission lands to Mexico's citizenry in the form of land grants or "ranchos."

The Mexican Rancho period (1821 – 1848) began subsequent to the dismantling of the mission system throughout California in the mid-1830s. Following the abandonment of the San Bernardino asistencia, the valley was left to its half-missionized Indian inhabitants and occasional desert marauders. This situation began to change in the last years of the 1830s as private land owners were given grants of land to take over the cattle ranching begun by the mission clergy.

In Riverside County, the first land grant was to Leandro Serrano who established Rancho Temescal. In San Bernardino County, the first land grant carved out of the holdings of the San Bernardino Rancho was made to Juan Bandini in 1838. Known as the Jurupa Grant, its 32,000 acres were situated along the Santa Ana River, primarily on the north and west side, between Slover Mountain to the north and a point just north of the Chino Hills to the south.

The Mexican Rancho period ended in 1848 as the Mexican War, which had been raging for nearly two years, came to a close. After Mexico was defeated and the Treaty of Guadalupe Hidalgo was signed in 1848, California was ceded to the United States, ushering in the American Period (1848 – present).

The effects of California's statehood in 1850 were twofold. For the rancheros, the end of the Rancho period was met with financial ruin. The validity of the land grants issued by Mexican governors was questioned by the Land Commission. Many of the rancheros never officially gained their land patents. With the flood of new settlers, the American period was marked by unprecedented growth and industry. In San Bernardino and Riverside counties, increased settlement, the growth of commercial resource extraction, and the development of transportation occurred during the American period.

In 1893, the California legislature formed Riverside County out of 6,044 square miles of San Diego County and 590 square miles of San Bernardino County; the project area was formerly part of San Diego County. Citrus orchards occupied the hilly sections within reach of the canal system, while stock raisers and grain farmers spread across the eastern plains to Perris and beyond. Dry farmers settled north and east of the project area by the early 1890s in the area now known as Woodcrest.

The area of the proposed realignment does not represent an area with a Native American or post-European cultural history that is different than that described in the 2005 PEIR.

Buried Sites-Sensitivity Analysis

Because much of the pedestrian survey corridor within the Area of Potential Impacts (APE) was obscured or partially obscured by pavement and landscaping, soils and geologic maps were examined to evaluate the potential for buried cultural resources. To evaluate the potential for buried sites, the thickness of deposits overlying potential cultural materials as well as mineral composition were taken into consideration. Soils types with a low potential for buried sites were typically shallow or, based on mineral composition, primarily clay-based or derived from basic igneous rock (i.e. gabbros and basalts). Soil types that were deep and well-drained were characterized as having high potential for buried sites, whereas areas with moderate potential had soil types that were deep and poorly-drained, or shallow and well-drained.

Based on soil and geologic characteristics, the project area was divided into four main areas of low, moderate, and high potential for buried sites. It should be noted, however, that areas where cultural resources are recorded within the APE of the proposed alignments are considered to have high potential for buried cultural resources. (See **Table 4.4-A, Potential for Finding Buried Archaeological Sites**.)

Table 4.4-A, Potential for Finding Buried Archaeological Sites

	Potential		
Reach/Area	Low	Moderate	High
Northern Reach			
Within San Bernardino and Colton	X		
Remainder of Northern Reach (esp. Agua Mansa Road)			X
Central Reach			
Limonite Avenue/Clay Street		X	
South of Santa Ana River along Van Buren Blvd. to North of Jackson/Colorado Intersection	X		
South of Jackson/Colorado Intersection and Santa Ana River Crossing			X
Additional Connections			
Central Feeder Connection	X		
Clay Street Connection		X	
La sierra Pipeline and Mockingbird Connections			X

Based on soil and geologic characteristics, the Northern Reach of the Realignment Alternatives project area is identified as having primarily low and high potential for buried sites. The portion of the project area within the cities of San Bernardino and Colton has low potential, whereas the remaining portion of the Northern Reach, particularly along Agua Mansa Road, has a high potential for buried sites.

Based on soil and geologic characteristics, low, moderate, and high potential for buried sites characterizes the Central Reach of the Realignment Alternatives project area. Moderate potential is identified along much of Limonite Avenue and Clay Street, whereas low potential is identified south of the Santa Ana River crossing along Van Buren Boulevard to just north of the intersection between Jackson Avenue and Colorado Avenue. From this intersection south, the Arlington area of Riverside is characterized as having a high potential for buried sites, as well as the Santa Ana River crossing and areas where previously identified cultural resources are located within the survey corridor.

The four connections to other regional facilities (Central Feeder Connection, Clay Street Connection, Mockingbird Connection and La Sierra Pipeline) that are part of the Realignment Alternative with Additional Connections would also be characterized as having low, moderate, and high potential for buried sites. Central Feeder Connection has low potential. The Clay Street Connection has a moderate potential for buried sites; while the La Sierra Pipeline and the Mockingbird Connection have a high potential.

Cultural Resources Known in the Project Vicinity – San Bernardino County

With respect to the portions of the Realignment Alternatives within San Bernardino County, a minimum of eight-eight cultural resource properties have been recorded within a one-mile radius of the pipeline route; twelve of which are located within the 100-foot-wide field survey corridor. However, there are no sites located within the area that would be subject to ground-disturbing activities. Additionally, physical evidence of three of the sites could not be located during field

surveys: CA-SBR-6101H (Union Pacific Railroad), CPHI-SBR-21 (San Bernardino-Sonora Road), and P-36-015221 (Agua Mansa town site). They may be present underground or previously destroyed.

Sections of the Realignment Alternatives would pass beneath CA-SBR-6847H ("The Old Kite Route" or Atchison Topeka & Santa Fe Railway) and CA-SBR-6859H (Riverside Canal).

Forty-one pending prehistoric and historic-period resources that appear in literature or map reviews are also within the one-mile radius; four of which are reported to be within the area subject to ground-disturbing activities. However, none of these historical-period resources were located during the field survey for this project, or from field surveys in previous studies of the area.

Cultural Resources Known in the Project Vicinity – Riverside County

For the Riverside County portion of the proposed Realignment Alternatives, over two hundred cultural resource properties have been located within a one-mile radius of the pipeline route; fourteen of which are located within the 100-foot-wide field survey corridor. Two of the sites are historical-period residences (P-33-11033 and P-33-13974) and are not within the area that would be subject to ground-disturbances. A third site, CA-RIV-8513H (features associated with sand quarrying activities) is also not within the immediate project area and would not be subject to disturbance.

The Realignment Alternatives cross the right-of-way of P-33-11361 (Victoria Avenue) and crosses the historic alignment of CA-RIV-4791H (Riverside Lower Canal) in Jackson Street, as well as in the alternate Monroe Street alignment. The Jackson Street crossing is not visible and may occur underground or has been destroyed. The Canal at Monroe Street is above-ground and intact and would be within the area of ground-disturbing activities if the Monroe Street alternative is chosen. In addition, a section of the Realignment Alternatives would pass beneath CA-RIV-4495H (Riverside Upper Canal) in Jackson Street or Monroe Street.

Field Survey Findings of Newly Recorded Cultural Resources

In addition to known sites within the project area, twelve previously unrecorded sites (five in San Bernardino County and seven in Riverside County) were located during field surveys. Five are not located in the project area of ground disturbance; yet, three others are in the area of ground disturbance for the Monroe Alternative: RCF-5 (remnants of former citrus orchard irrigation system), RCF-6 (Monroe Street Canal) and RCF-7 (Monticello Street Canal).

4.4.2 Summary of 2005 Certified Program EIR for Riverside-Corona Feeder Project

Design Considerations/Avoidance

The proposed and alternative alignments for the 2005 Project Alternative are primarily located within street rights-of-way. Since the exact location of this alternative's pipeline within any given street will be determined as construction documents are prepared, it is not known whether the pipe will impact historical and archaeological resources. The proposed project includes boring under the Gage Canal to avoid that historic resource and to limit disruption of water distribution through the canal.

Potential Significant Impacts/Environmental Consequences

Cultural Resources were addressed in Section II-4 (pp. II-4-1 through II-4-8) of the 2005 Certified Program EIR (2005 PEIR) for the 2005 Project Alignment, which are hereby incorporated by reference. The 2005 PEIR analyzed historic resources, and both Non-Native American and Native American archaeological resources, but did not analyze paleontological resources because the Initial Study prepared for that EIR identified project specifications (repeated as original **MM Cult 4**) which addressed potential adverse paleontological impacts.

Additionally, the Phase I Cultural Resources Investigation prepared for the 2005 Project Alignment by McKenna et al. in March 2003 determined that "The paleontological overview reported that no fossil localities have been reported for this area, but there are some locations within the general area that may be fossil bearing. The likelihood of identifying fossil resources in this area is extremely LOW and, therefore McKenna et al. concludes that paleontological resources will not be impacted by the proposed project." (PEIR, Appendix E, p. 35) Nevertheless, mitigation measure **MM Cult 4**, below, was adopted to mitigate potential impacts to paleontological resources discovered during construction of the 2005 Project Alignment.

The following discussion is a summary of the Cultural Resources section of the 2005 PEIR:

Threshold: *The proposed project would result in significant impacts if it causes a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations § 15064.5.*

The 2005 Project Alignment would have bisected, or lied within the immediate vicinity of a total of five historic sites including: CA-RIV-4768H and CA-SBR-7168H (Gage Canal), CA-RIV-4791H (Riverside Lower Canal), CA-RIV-3832H (AT&SF Railroad Alignment), CA-RIV-9774 (Southern Pacific Railroad) and P-33-11361 (Victoria Avenue - listed in the National Register of Historic Places since 2000). In addition, palm rows and citrus trees within the California Citrus State Historic Park and other streets in the City of Riverside Greenbelt area would be affected.

The 2005 PEIR found that impacts to the Riverside Canal would be avoided because the alignment paralleled the canal. Impacts related to AT&SF Railroad and the Southern Pacific

Railroad were found to be less than significant due to ineligibility for listing on both the state and federal levels.

The relative significance of the historic Gage Canal where the 2005 Project Alignment crossed in the cities of Colton and Grand Terrace could not be established at the time of writing the 2005 Certified EIR. In Riverside County, the 2005 Project Alignment would cross under the Gage Canal at a point where the Canal is open and intact, rendering protection from adverse impacts necessary and potentially significant without mitigation.

Impacts to the landscaping along Victoria Avenue, as well as other landscaping within the Riverside Greenbelt and California Citrus State Historic Park, were found to be potentially significant without mitigation.

Threshold: *The proposed project would cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations §15064.5.*

The 2005 PEIR determined that the proposed project would not impact known archaeological resources, yet it was also determined that the project area has a moderate likelihood of containing unknown archaeological resources. In addition, the 2005 PEIR acknowledges that there are areas where native soils may be exposed, such as at the Santa Ana River crossing, Springbrook Wash, and in the Mockingbird Canyon area. Therefore the project could affect those unknown resources during construction and operation, especially in those areas, and impacts were considered significant without mitigation.

Threshold: *The proposed project would result in a significant impact if it disturbs any human remains, including those interred outside of formal cemeteries.*

Investigation by the California Native American Heritage Commission (NAHC) determined that the project area did not include the known presence of Native American burial sites. It was also determined that there is a low potential for the discovery of unknown remains. However, since human remains may become uncovered unexpectedly during construction, impacts were considered significant without mitigation.

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were adopted in the 2005 PEIR to reduce potentially significant impacts related to cultural resources:

MM Cult 1: In order to reduce potential significant impacts to historic and non-Native American archaeological and historic resources, full time archaeological monitoring during excavations shall be conducted in sensitive areas (e.g., near the Santa Ana River crossing), within undeveloped areas along the project alignment, near Riverside Highland Water facility site thought to be in the vicinity of Barton Road (north of Palm Avenue), at the Gage Canal crossing in the cities of Riverside and Grand Terrace, at the Railroad crossings (AT&SF Railroad Alignment and Southern Pacific Railroad), the Riverside Canal, at Victoria Avenue and Irving Street. The extent and duration of the archaeological monitoring shall be determined by a

qualified archaeologist once the construction schedule is defined for each reach of project construction. In the event of an accidental discovery, the archaeological monitor will comply with State CEQA Guidelines section 15064.5.

MM Cult 1a: If non-Native American archaeological or historic resources are discovered, the local jurisdiction and land owner where the resources are found will be notified by WMWD. Depending on the nature of the resource, appropriate mitigation and monitoring will be developed by WMWD in conjunction with all affected parties and the on-site archaeologist, and may include such things as:

- Documentation, removal, and curation at a local museum, federal repository, or other appropriate steward agency.
- Documentation and retention in place.
- Further detailed archaeological studies to determine the nature and extent of the find.
- Retention by the land owner.
- Other measures agreed upon by the parties involved.

MM Cult 2: In response to comments from local tribes and to be sensitive to the cultural heritage of the tribes that have claimed an interest in the project area, the archaeological monitoring program shall be executed in conjunction with the tribes to assist in determining which areas of the project alignment are in sensitive locations where undisturbed soils will be excavated. Such areas will include, at a minimum: the Santa Ana River (San Bernardino County) and Springbrook Wash (Riverside County and City) crossings, and a natural area near Irving and Firethorn Streets (Mockingbird Canyon area) in the City of Riverside.

Prior to grading, WMWD shall contact the Native American Heritage Commission (NAHC) to determine the Most Likely Descendent (MLD) within any given Reach where the pipeline is to be constructed. WMWD shall enter into a pre-excavation agreement for one paid monitor with the Native American tribe identified by the NAHC as the MLD for each Reach of project construction where undisturbed native soils will be affected and sensitive resources are likely. In the event of an accidental discovery, the archaeological monitor will comply with State CEQA Guidelines section 15064.5.

To respond to the expressed desire of each tribe to monitor construction in sensitive areas and in the spirit of interagency cooperation, the Pechanga, Ramona, and San Manuel shall be notified by WMWD prior to excavation activities.

MM Cult 3: To ensure the proper disposition of cultural resources of interest to the tribes uncovered during excavation for the installation of the RCF Project, WMWD shall seek input from the tribes to develop a plan for such dispersal that encompasses the tribes' desired treatment and disposition of Native American cultural resources, including human remains. After considering the tribes' input and recommendations, WMWD shall approve and finalize such a plan prior to grading. WMWD shall agree to present the plan and encourage land owners to follow the plan if cultural resources of interest to the tribes are found on land not owned by WMWD.

MM Cult 4: If fossils are identified during excavation, a qualified paleontologist shall be contacted and permitted to recover and evaluate the find(s) in accordance with current standards and guidelines.

MM Cult 5: If human remains are uncovered at any time, all activities in the area of the find shall be halted by WMWD or its contractor and the County Coroner shall be notified immediately pursuant to CA Health & Safety Code Section 7050.5 and CA PRC Section 5097.98. If the Coroner determines that the remains are of Native American origin, the Native American Heritage Commission (NAHC) shall be notified by the Coroner. The NAHC will determine and notify the Most Likely Descendent (MLD). The MLD shall be allowed to inspect the site of the discovery. The MLD shall complete the inspection and make recommendations for treatment within 24 hours of notification by the NAHC.

MM Cult 5a: If a sacred site is encountered within the project alignment, WMWD will work with the tribes to avoid the site, if feasible.

MM Cult 6: Plants and trees removed or damaged by the proposed project shall be replaced pursuant to the standards and requirements of each jurisdiction within which the loss or damage occurs.

MM Cult 7: The location of all existing trees, palms, and other landscaping shall be noted on the construction drawings that will be prepared for this project to facilitate review and proper permitting by the affected jurisdiction.

MM Cult 8: If construction activities that require digging are located closer than eight feet from a mature palm, a certified arborist shall evaluate the specific palm(s) to determine if the palm can remain in place, be relocated successfully or if project redesign may be warranted. If the palm must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the palm(s) is/are located.

MM Cult 9: If construction activities that require digging are located closer than thirty feet from the drip line of a mature tree, a certified arborist shall evaluate the specific tree(s). The arborist will recommend the course of action most likely to preserve the tree including but not limited to trimming to help with stability, no action and the tree remains in place as is, project redesign, or the means to achieve a successful relocation. If the tree must be removed, replacement shall be commensurate with the size and age of the tree being removed, pursuant to the requirements of the jurisdiction within which the tree(s) is/are located, and in no case shall replacement trees be less than 24-inch box size trees.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the 2005 Project Alignment found that with the implementation of Mitigation Measures **MM Cult 1 through 9**, impacts to historical resources and to previously unknown potentially-significant archaeological and paleontological resources would be less than significant.

4.4.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The impacts and findings discussed in the 2005 PEIR related to cultural resources are applicable to both the 2005 Project Alignment and the Realignment Alternatives for Reach H. The Realignment Alternatives will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR which is referenced as the Northern and Central Reaches.

The analysis of cultural resources contained within the 2005 PEIR does not specifically address the proposed realignment for Reaches E. F and G, however Reaches E, F, and G were re-evaluated and Reaches F and G were refined slightly in 2007, as analyzed in the *Final Environmental Impact Report for the La Sierra Avenue Water Transmission Pipeline Project* (SCH: 2006101152) which was certified by WMWD on February 20, 2008 (Reaches E, F, and G 2008 Refinement EIR), attached as Appendix J. This refined alignment for Reaches F and G will remain consistent with the 2008 Refinement EIR under both realignment alternatives evaluated herein.

The analysis conducted in this section of the Supplemental EIR is provided to make the 2005 Project Alignment PEIR adequate for the entire Riverside-Corona Feeder Realignment Alternatives. This SEIR with the Reaches E, F, and G 2008 Refinement EIR will provide CEQA analysis for the entire length of the project.

Thresholds of Significance

Western Municipal Water District (WMWD) has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, WMWD's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to cultural resources may be considered potentially significant if the project would:

- cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5.
- cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5.
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

- disturb any human remains, including those interred outside of formal cemeteries.

Related Regulations

Historical and otherwise cultural resources are defined and handled by federal, state, and local laws and guidelines. There are specific criteria for determining whether prehistoric sites or objects are significant and thus protected by law. Federal and state significance criteria generally focus on the integrity and uniqueness of the resource, its relationship to similar resources, and its potential to contribute information important to scholarly research. Some resources that do not meet federal significance criteria may be considered significant by state criteria. The laws and regulations seek to mitigate project impacts on significant prehistoric and historical-period resources.

Federal Regulations

National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertaking on historic properties and Native American sites of religious or cultural significance. Section 106 would apply to the proposed project if federal agencies are involved in the development, or if federal money is used. The Section 106 process requires consultation with Native America representatives, local agencies, and the State Historic Preservation Officer. If in the future this project is awarded federal funds, the official NEPA process and Section 106 will be required.

Secretary of the Interior's Standards for the Treatment of Cultural Landscapes

The Secretary of the Interior is responsible for establishing professional standards and providing advice on the preservation of cultural resources listed in or eligible for listing in the National Register of Historic Places. In 1992, the Standards were revised so that they could be applied to all historic resource types included in the National Register of Historic Places – buildings, structures, sites, objects, districts, and landscapes. This new, modified version addresses four treatments: preservation, rehabilitation, restoration, and reconstruction. The Guidelines for the Treatment of Cultural Landscapes illustrate how to apply these four treatments to cultural landscapes in a way that meets the Standards.

State Regulations

Public Resources Code 5097.98

California Senate Bill 297 (1982) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Native American Heritage Commission to resolve disputes regarding the disposition of such remains. It has been incorporated into Section 15064.5(e) of the CEQA Guidelines.

Health and Safety Code Section 7052 and 7050.5

Section 7052 of the California Health and Safety Code states that disturbance of Indian cemeteries is a felony. There are no known Indian cemetery sites within the project area. Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are found to be Native American, the coroner must contact the California Native American Heritage Commission.

California Environmental Quality Act (CEQA)

Sections 21083.2 and 21084.1 of CEQA deal with the definition of an historical resource, unique archeological resource, and non-unique archaeological resource. Section 21083.2 directs the lead agency to determine whether the project may have a significant effect on unique archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. Section 21084.1 directs the lead agency to determine whether the project may have a significant effect on historical resources, irrespective of the fact that these historical resources may not be listed or determined to be eligible for listing in the California Register of Historic Resources, a local register of historical resources, or they are not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1.

Regarding the proper criteria of historical significance, the State CEQA Guidelines (Section 15064.5) mandate that a resource shall be considered by the lead agency to be "historically significant" if the resource is listed in, or determined to be eligible, by the State Historical Resources Commission, for listing in the California Register of Historical Resources; is included in a local register of historical resources; or meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852).

A resource may be listed in the California Register if it meets any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5(b) of the California Code of Regulations states that a substantial adverse change in the significance of an historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters, in an adverse manner, those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters, in an adverse manner, those physical characteristics that account for its inclusion in a local register of historical resources, pursuant to section 5020.1(k) of the Public Resources Code, or its identification in an historical resources survey, meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters, in an adverse manner, those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources, as determined by a lead agency for purposes of CEQA.

Pursuant to Section 15064.5(c) of the State CEQA Guidelines, when a project will impact an archaeological site, the lead agency is first required to determine whether the site is an "historical resource." It is considered to be an "historical resource" if the resource is listed in, or determined to be eligible, by the State Historical Resources Commission, for listing in the California Register of Historical Resources; is included in a local register of historical resources; or meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852).

Section 15064.5(c)(4) states that: "If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process."

Local Regulations

San Bernardino County

General Plan Policies CO 3.1 to 3.5 describes programs to ensure that the County will preserve and promote its historic and prehistoric cultural heritage.

City of San Bernardino

General Plan Policy 3.6.4 requires that an environmental review be conducted on all applications including grading, earth-moving, building, or demolition permit applications, or for archaeological resources discovered during construction, and for sites designated as archaeologically significant in order to ensure that the sites are preserved and protected.

City of Colton

The City of Colton General Plan's Cultural Resources Preservation Element establishes goals and policies intended to identify, protect and preserve Colton's cultural and historic resources and to educate the public on the importance of these processes. The Cultural Resources Preservation Element also identifies Ordinance No. 0-11-87 as an existing regulation directly related to the goals and policies contained in the general plan element. Ordinance No. 0-11-87, known as the "Historic and Scenic Preservation Ordinance of the City of Colton" establishes rules and regulations governing the designation, preservation, and perpetuation of historic and scenic properties. This Ordinance authorizes the Historic and Scenic Preservation Commission to make recommendations, decisions, and determinations concerning the designation, preservation, protection, enhancement, and perpetuation of historic and cultural resources in the City of Colton.

City of Corona

The Historic Resources section of the City of Corona's General Plan contains goals and policies which address the protection and sustainability of the City's historic resources. Corona General Plan policies consultation with a qualified archaeologist and application of appropriate mitigation if archaeological resources are found during construction (Policy 4.3.3) and consultation with a qualified paleontologist and mitigation if paleontological resources are found during construction (Policy 4.3.7). Compliance with applicable laws is required if human remains are uncovered during construction (Policy 4.3.8).

City of Redlands

The City of Redlands Historic and Scenic Preservation Commission was established in 1976 to advise the City Council regarding designation and protection of historic resources. In 1985, the first Historic and Scenic Preservation Element of the General Plan was prepared and adopted. An ordinance adopted in 1986 strengthened the protection of resources by allowing the Commission to deny demolition, except in cases of proven hardship, and to designate without owner consent. Chapter 7 of the City of Redlands General Plan contains policies to ensure the preservation of cultural, historical, archaeological and paleontological resources within the city. Open Space Policies 7.30a, 7.30b, 7.30c, 7.30d, 7.30.e, and 7.30f are applicable.

City of Rialto

Municipal Code Chapter 18.71, "Historical Preservation" establishes a historic preservation board that is charged with development of a historic preservation design manual, recommending the designation of landmarks and historic districts, and maintaining a list of nominated resources and a register of all local landmark resources. A certificate of appropriateness is required for new construction on the site of a designated historic resource or in a historic district.

Riverside County

Chapter 5 of the Riverside County General Plan contains policies that are intended to ensure the preservation of cultural, historical, archaeological, paleontological, geological, and educational resources in the County. Open Space Policies 19.2, 19.3, 19.4, 19.8, 19.9, and 19.10 are

applicable to this property. These policies include: a review process, institution of mitigation measures, paleontological monitoring, and filing of reports documenting the significance of findings on the site.

City of Riverside

General Plan 2025 includes objectives and policies within a Historic Preservation Element; the purpose of which is to "provide guidance in developing and implementing activities that ensure that the identification, designation and protection of cultural resources are part of the city's community planning, development and permitting processes." Pursuant to Policy HP-1.1, the "City shall promote the preservation of cultural resources to ensure that citizens of Riverside have the opportunity to understand and appreciate the City's unique heritage." Additionally, Policy HP-1.4 states that the "City shall protect natural resources such as geological features, heritage trees, and landscapes in the planning and development review process and in park and open space planning."

Unique Archaeological Resources Criteria

CEQA requires the lead agency to consider whether the project will have a significant effect on unique archaeological resources and to avoid unique archaeological resources when feasible or mitigate any effects to less-than-significant levels (Public Resources Code [PRC] 21083.2). As used in CEQA:

> A unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> a) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> b) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> c) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Design Considerations/Avoidance

Segments of the Realignment Alternatives have been designed to avoid potential project impacts to historic resources by requiring construction at certain canal and railway crossings (UPRR and Rancho Avenue, Riverside Canal and Agua Mansa Road, Riverside Canal and Jackson Street and Monroe Street and Riverside Canal) to be completed using jack-and-bore construction techniques, rather than traditional surface trenching.

Potential Significant Impacts/Environmental Consequences

Threshold: *The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.*

"A substantial adverse change in the significance of a historical resource" is defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. The proposed realignment and the Monroe Street alternative would cross, or be within the immediate vicinity of five known historic resources:

- CA-SBR-6847H ("The Old Kite Route" or Atchison Topeka & Santa Fe Railway)
- CA-SBR-6859H (Riverside Canal)
- P-33-11361 (Victoria Avenue)
- CA-RIV-4791H (Riverside Lower Canal)
- CA-RIV-4495H (Riverside Upper Canal)

Crossing number 8 as shown in **Table 3.0-2, Summary of Major Pipeline Crossings North to South,** within the Northern Reach would consist of tunneling under CA-SBR-6847H (the AT&SF Old Kite Route railway), which at this point is inoperative and overgrown with vegetation. The proposed Realignment Alternatives and the Monroe Street option would come within 100-feet of CA-SBR-6847H at two other locations: along W. North St. (near South 6th Street) and along Monroe Street (between Lincoln Avenue and Indiana Avenue). However, the railroad crossings at these locations occur above ground within overpasses and will not be affected by the proposed project.

The proposed Realignment Alternatives would cross CA-SBR-6859H (Riverside Canal) at Agua Mansa Road near Slover Mountain and the Rialto Channel. Crossing number 9, as shown in **Table 3.0-2, Summary of Major Pipeline Crossings North to South,** of the Northern Reach would consist of tunneling the Realignment Alternatives under CA-SBR-6859H (Riverside Canal), thus resulting in complete avoidance of the cultural resource through project design.

Construction of the Realignment Alternatives would impact P-33-11361 (Victoria Avenue) at the intersection of Jackson Street or at the intersection of Monroe Street if the Monroe Alternative is used. Victoria Avenue is listed in the National Register of Historic Places due to its role as a defining element of Riverside's historic citrus landscape with regard to community planning and development. The Mediterranean-derived landscape bordering the avenue and its original alignment are defining features, rather than its original road construction materials. Thus, the landscaping along Victoria Avenue is a sensitive resource, the loss of which would be considered significant both aesthetically and historically (see Section 4.1, Aesthetics).

The proposed Realignment Alternatives would cross CA-RIV-4791H (Riverside Lower Canal) at either Jackson Street or Monroe Street. The Canal is not visible where the Realignment Alternatives would cross at Jackson Street, and may occur below ground or has been destroyed. The Canal at Monroe Street where the Realignment Alternatives' Monroe Street option would cross is above-ground and intact, as evidenced by a concrete-lined gravity-flow canal and

culvert. Impacts would be significant to the Canal if either Jackson Street or Monroe Street for the Realignment Alternatives is chosen and traditional trenching techniques are used.

The proposed Realignment Alternatives would cross CA-RIV-4495H (Riverside Upper Canal) at Jackson Street or Monroe Street, if the Monroe Alternative is chosen. The Canal is visible on the west sides of the streets, blocked by chain link fencing. At Crossing number 19 (Jackson Street) and Crossing number Alt. 21 as shown in **Table 3.0-2, Summary of Major Pipeline Crossings North to South,** within Central Reach tunneling techniques would be used to construct the pipeline beneath the Canal.

Three previously unrecorded sites that were located during a field survey are in the area of ground disturbance for the Monroe Alternative:

- RCF-5 (remnants of former citrus orchard irrigation system)
- RCF-6 (Monroe Street Canal)
- RCF-7 (Monticello Street Canal)

RCF-5 is located on an empty 15-acre parcel at the intersection of Irving Street and Cleveland Avenue. The citrus grove that once covered the lot was likely established in the early or mid-1900s. Most of the irrigation system is gone except for some remnants along the western edge, adjacent to Irving Street and the southern corner. It includes a weir box, several flow control pipes, valve controls, and standpipes. Also, rows of California pepper trees border the parcel. Considering that the citrus grove has been removed, as well as most of the irrigation system, RCF-5 lacks overall integrity of location, setting, and association. Impacts from construction in Irving Street and Cleveland Avenue are therefore less than significant.

RCF-6 is a fenced, concrete-lined canal running north-south within Monroe Street, dividing the street from Magnolia Avenue to just south of California Avenue. This Canal appears on the 1942 USGS Riverside 15-minute quadrangle map originally as a storm drain ditch and later in 1957, was improved by the city as adjacent residential developments were constructed. Prior to the extensive improvements made in 1957, the original ditch was likely associated with the historic citrus industry of the Arlington area. The subsequent improvements to the Canal reflect the rapid residential developments that occurred within the City of Riverside following World War II. Based on the association with this post-WWII urban expansion in Arlington's history, this Canal may be eligible for listing in the National Register of Historic Places and the California Register of Historical Resources. If traditional trenching techniques are used for the Monroe Alternative, the Canal would be adversely impacted.

RCF-7 is a concrete-lined trapezoidal Canal beneath Colorado Avenue at the intersection of Monticello Avenue where the Realignment Alternatives' Monroe Street option would bisect. The Canal drains into Hole Lake and was likely improved as it's seen today ca. 1956. Like RCF-6, this Canal is associated with the rapid urban expansion that occurred in Arlington's history following WWII. Therefore, it may be eligible for listing in the National Register of Historic Places and the California Register of Historical Resources, and would be significantly impacted by the Monroe Alternative if traditional trenching techniques are used.

Three previously unrecorded sites that were located during a field survey of the area of potential effect for the Central Feeder Connection component of the Realignment Alternative with Additional Connections (Preferred Alternative):

- CFC-1 (Historic House Foundation)
- CFC-2 (Historic Structure - The Crown Jewel Citrus Packing Plant)
- CA-SBR-9991H – Historic landscape, Mexican Fan Palm historic alignments

CFC-1 is a historic house foundation with associated agricultural irrigation features. The foundation is located on the southwest corner of the intersection of Nevada Street and San Bernardino Avenue. The foundation measures approximately 100 feet by 35 feet and is located in the southwest corner of the proposed boundaries of the well field location. A few surface artifacts were identified around the foundation and in the associated orange groves, which have been removed. The relationship between the artifacts and structure is unclear, as it appears the land has been used for dumping intermittently over the years.

CFC-2 is the Old Crown Jewel packinghouse that has been partially converted into the Packing House Christian Academy. The structure is located on the southwest corner of the intersection of Alabama Street and San Bernardino Avenue. The building measures approximately 180 feet by 80 feet and is situated in the southeast corner of the proposed boundaries of the well field location. The exterior appears to maintain much of its original composition. The packinghouse appears to have been constructed sometime in the early 1900s. Although it is clear some modifications have been made on the west end of the structure, they appear to be historic additions. No surface artifacts were identified around the structure or in the open field directly south of the property.

At this time, the precise location of individual new wells has not been established. Therefore the potential impacts upon CFC-1 and CFC-2 by the Central Feeder Connection component of the Realignment Alternative with Additional Connections (Preferred Alternative) can be avoided by the placement of new wells outside of the area of potential effect for these historic resources. This avoidance will be accomplished through implementation of mitigation measure **MM Cult 11**.

CA-SBR-9991H is comprised of rows of tall Mexican Fan Palms that line portions of Nevada Street and San Bernardino Avenue within the project are. These trees are considered part of the locally culturally significant rural historic landscape. The palm alignments are considered to be "heritage trees" by the County of San Bernardino. These heritage trees are also considered to be aesthetic/visual resources and are addressed in Section 4.1 (Aesthetics/Visual) of this SEIR/EIS. The potential impact of the Central Feeder Connection component of the Realignment Alternative with Additional Connections (Preferred Alternative) can be mitigated to less than significant levels through implementation of mitigation measures **MM Aes 2** and **MM Aes 3**, as set forth in Section 4.1.

Due to the relative sensitivity of the project area, the proposed construction may result in potentially significant impacts upon historical resources; however, mitigation measures **MM**

Cult 1, MM Cult 1a, and **MM Cult 6** through **MM Cult 13**, listed below, will ensure the project's potential to cause a substantial adverse change in the significance of historical resource as defined in California Code of Regulations, Section 15064.5 are mitigated to a less than significant level.

Threshold: *The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section 15064.5.*

The proposed project will not impact known archaeological resources. Based on the results of the California Historical Resources Information System (CHRIS) records searches, as well as buried-sites sensitivity analysis, there is a high potential for encountering buried cultural resources within the Realignment Alternatives' area. The results of the San Bernardino Archaeological Information Center (SBAIC), records search indicate numerous previously recorded cultural resources along Agua Mansa Road within the 100-foot-wide survey corridor, including the town site of Agua Mansa, a historical road, and numerous irrigation ditches and canals. An examination of soils and geologic maps for this area, coupled with the presence of numerous previously recorded resources, indicate that there is a high potential for buried cultural resources. Other areas where previously and newly recorded sites have been identified within the APE, as well as the Santa Ana River crossing and the southernmost section of the Realignment Alternatives' Central Reach have also been identified as having high to moderate potential for buried cultural resources.

Due to the expected presence of unknown archaeological resources within the project area, the project may result in an adverse change in the significance of an archaeological resource; however, mitigation measures **M Cult 1, MM Cult 2, MM Cult 3,** and **MM Cult 5a**, listed below, will ensure the project's potential to cause a substantial adverse change in the significance of archaeological resource pursuant to California Code of Regulations, Section 15064.5 are mitigated to a less than significant level.

Threshold: *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.*

No known paleontologic resources have been previously recorded by the San Bernardino County Museum within the Realignment Alternatives project area. Paleontologic remains, however, have been identified approximately three to five miles northwest of the project area. These remains included extinct mammoth, mastodon, bison, camel, and saber-toothed cat.

The proposed Realignment Alternatives are located on surface exposures of Pliocene or early Pleistocene age sedimentary rock units, and alluvial and alluvial fan deposits, that have the high potential to contain significant paleontologic resources. Although not within the project area, paleontologic resources have been previously identified within these sediments in Riverside and San Bernardino counties. Surface exposures of Holocene eolian and alluvial deposits are also reported within the project area. These young sediments, however, have a low potential for containing paleontologic resources.

Three of the four connections to other regional facilities that are part of the Realignment Alternative with Additional Connections (Clay Street Connection, Mockingbird Connection and La Sierra Pipeline) are located either partially or completely within areas with a high potential to contain paleontological resources. The Central Feeder Connection is located on surface exposures of Holocene alluvial deposits and therefore has a low potential for containing paleontologic resources.

Due to the presence of surface exposures of Pleistocene age sedimentary rock units, and alluvial and alluvial fan deposits, characterized as having a high potential for containing paleontologic resources, there is a potential that construction of some segments of the Realignment Alternatives may uncover paleontological resources. In the event that construction activities uncover paleontological resources, the below-listed mitigation measure **MM Cult 4** will reduce the project's potential to directly or indirectly destroy a unique paleontological resource or site to **less than significant levels**.

Threshold: *The proposed project would disturb any human remains, including those interred outside of formal cemeteries.*

The California Native Heritage Commission investigated the possibility for any Native American cultural resources within the Riverside Corona Feeder project area and has indicated that it has no record of the presence of any known Native American sacred sites within the project and/or in the immediate project area. Nevertheless, as described above, the Northern Reach of the project area is identified as having primarily low and high potential for buried sites. The portion of the project area within the cities of San Bernardino and Colton has low potential, whereas the remaining portion of the Northern Reach, particularly along Agua Mansa Road, has a high potential for buried sites.

Along the Central Reach of the project there is moderate potential for buried sites along much of Limonite Avenue and Clay Street, whereas low potential is identified south of the Santa Ana River crossing along Van Buren Boulevard to just north of the intersection between Jackson Avenue and Colorado Avenue. From this intersection south, the Arlington area of Riverside is characterized as having a high potential for buried sites, as well as the Santa Ana River crossing and areas where previously identified cultural resources are located within the survey corridor.

Although there is no known specific potential for adverse environmental impacts to human remains, including those interred outside of a formal cemetery, human remains may be uncovered at any time. However, in the unlikely event that suspected human remains are uncovered during construction, all activities in the vicinity of the remains shall cease and the contractor shall notify the County Coroner immediately pursuant to CA Health & Safety Code Section 7050.5 and CA RPC Section 5097.98. Therefore, impacts are considered **less than significant**.

Realignment Alternatives Proposed Mitigation Measures/Minimization

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 or reduce the potential significant adverse impacts related to historical and archaeological resources to below the level of significance.

As described above, mitigation measures MM Cult 1 through MM Cult 9 were set forth in the 2005 Certified Final Program EIR and are still applicable to the proposed RCF Pipeline Realignments. Mitigation measures ***MM Cult 2a, MM Cult 4a, and MM Cult 10*** *through* ***13*** *have been added by this SEIR/EIS to address potential impacts. Mitigation measures CULT-1 through CULT-3 are mitigation measures established in the Reaches E, F, and G 2008 Refinement EIR. The measures below mitigate the same issues and provide a consolidated approach to mitigation for all the project alternatives. Thus, the MMs below indicate which measures from the "CULT" list are addressed by that MM. For example,* ***MM Cult 1*** *and* ***MM Cult 2*** *shall be used in lieu of CULT-3 which deals with archaeological monitoring.*

MM Cult 1: (CULT-3) In order to reduce potential significant impacts to historic and non-Native American archaeological and historic resources, full-time archaeological monitoring during excavations shall be conducted in sensitive areas (e.g., near the Santa Ana River crossing, Mockingbird Canyon and La Sierra), within undeveloped areas along the project alignment, near Riverside Highland Water facility site thought to be in the vicinity of Barton Road (north of Palm Avenue), at the Gage Canal crossing in the cities of Riverside and Grand Terrace, at the Railroad crossings (AT&SF Railroad Alignment and Southern Pacific Railroad), the Riverside Canal, at Victoria Avenue and Irving Street. The extent and duration of the archaeological monitoring shall be determined by a Secretary of the Interior qualified archaeologist who is also qualified by Riverside County or the San Bernardino Archaeological Information Center (SBAIC) located at the San Bernardino County Museum, as appropriate to the location of the portion of the Project to be under construction, once the construction schedule is defined for each reach of project construction. In the event of an accidental discovery, the archaeological monitor will comply with State *CEQA Guidelines* Section 15064.5.

MM Cult 1a: (CULT-1) If non-Native American archaeological or historic resources are discovered, the local jurisdiction and land owner where the resources are found will be notified by WMWD. Depending on the nature of the resource, appropriate mitigation and monitoring will be developed by WMWD in conjunction with all affected parties and the on-site archaeologist, and may include such things as:

- Documentation, removal, and curation at a local museum, federal repository or other appropriate steward agency.
- Documentation and retention in place.
- Further detailed archaeological studies to determine the nature and extent of the find.
- Retention by the land owner.
- Other measures agreed upon by the parties involved.

MM Cult 2: (CULT-3) In response to comments from local tribes and to be sensitive to the cultural heritage of the tribes that have claimed an interest in the project area, the archaeological monitoring program shall be executed in conjunction with the tribes. As part of the preparation of the archaeological monitoring program, the interested tribes shall ~~to~~ assist in determining which areas of the project alignment where undisturbed soils will be excavated should be considered to be~~are in~~ S~~s~~ensitive Areas~~locations~~ requiring monitoring~~where undisturbed soils will be excavated~~. For the purposes of this mitigation measure, "undisturbed soils" shall mean: soil which has never been previously excavated or disturbed for construction or other purposes, and soil that was previously excavated but for which no archaeological or Native American monitoring was performed. "Sensitive~~Such~~ A~~a~~reas" ~~will~~include, at a minimum: the Santa Ana River (San Bernardino County) ~~and~~ Springbrook Wash (Riverside County and City) crossings, ~~and~~ a natural area near Irving and Firethorn Streets (Mockingbird Canyon area) in the City of Riverside, and the La Sierra area. Prior to grading, WMWD shall enter into a Treatment and Monitoring Agreement for one paid monitor for each reach of project construction with the culturally affiliated tribe, as determined by WMWD.

WMWD may seek the assistance of the Native American Heritage Commission (NAHC) in making the determination of cultural affiliation. ~~Prior to grading, WMWD shall contact the Native American Heritage Commission (NAHC) to determine the Most Likely Descendent (MLD) within any given Reach where the pipeline is to be constructed. WMWD shall enter into a pre-excavation agreement for one paid monitor with the Native American tribe identified by the NAHC as the MLD for each Reach of project construction where undisturbed native soils will be affected and sensitive resources are likely. In the event of an accidental discovery, the archaeological monitor will comply with State CEQA Guidelines section 15064.5.~~ To respond to the expressed desire of each tribe to monitor construction in sensitive areas and in the spirit of interagency cooperation, the Pechanga, Ramona, and San Manuel shall be notified by WMWD, prior to excavation activities.

MM Cult 2a: Additional tribes responded during the archaeological surveys performed for the Realignment Alternatives. To respond to the expressed desire of these additional tribes to monitor construction in sensitive areas and/or be consulted if finds are made, and in the spirit of interagency cooperation, the Morongo Band of Mission Indians, Soboba Band of Luiseno Indians and Gabrieleno/Tongva San Gabriel Band of Mission Indians shall be notified by WMWD, prior to excavation activities.

MM Cult 3: (CULT-1) To ensure the proper disposition of cultural resources of interest to the tribes uncovered during excavation for the installation of the RCF Project, WMWD shall seek input from the tribes to develop a Discovery P~~p~~lan for such dispersal that encompasses the tribes' desired treatment and disposition of Native American cultural resources, including human remains. After considering the tribes' input and recommendations, WMWD shall approve and finalize such a plan prior to grading. In the alternative, WMWD may choose to negotiate treatment and disposition within the Treatment Agreements entered into with the ~~MLD~~ culturally affiliated appropriate tribe for each reach of construction. WMWD shall follow either the Discovery Plan or the Treatment Agreement for resources found on WMWD lands. Further, WMWD shall agree to present the plan and encourage land owners to follow the plan if cultural resources of interest to the tribes are found on land not owned by WMWD. In all cases, the

actions of WMWD in its treatment of accidentally-discovered cultural resources shall be consistent with the requirements of CEQA Guidelines section 15064.5, the provisions of the Public Resources Code, and any other applicable state or federal law.

MM Cult 4: If fossils are identified during excavation, a qualified paleontologist shall be contacted and permitted to recover and evaluate the find(s) in accordance with current standards and guidelines.

MM Cult 4a: Prior to site grading, a pre-grading meeting between a qualified paleontologist and the excavation and grading contractor shall be held to outline the procedures to be followed when buried materials of potentially significant paleontological resources have been inadvertently discovered during earth-moving operations. Should construction/development activities uncover paleontological resources, work shall be moved to other parts of the project site and a qualified paleontologist shall be contacted to determine the significance of these resources. If the find is determined to be significant, temporary avoidance or other appropriate measures shall be implemented. Appropriate measures would include that a qualified paleontologist be permitted to recover and evaluate the find(s) in accordance with current standards and guidelines. Any significant fossil remains recovered in the field shall be prepared, identified, catalogued, curated, and accessioned into the fossil collections of the San Bernardino County Museum, or another museum repository complying with the Society of Vertebrate Paleontology standard guidelines; and the qualified paleontologist or qualified designee shall prepare a final report presenting an inventory and describing the scientific significance of any fossil remains accessioned into the museum repository. The report shall comply with the Society of Vertebrate Paleontology standard guidelines for assessing and mitigating impacts on paleontological resources and shall be submitted to Western Municipal Water District and the museum repository.

MM Cult 5: (CULT-2) If human remains are uncovered at any time, all activities in the area of the find shall be halted by WMWD or its contractor and the County Coroner shall be notified immediately pursuant to CA Health & Safety Code Section 7050.5 and CA PRC Section 5097.98. If the Coroner determines that the remains are of Native American origin, the Native American Heritage Commission (NAHC) shall be notified by the Coroner. The NAHC will determine and notify the Most Likely Descendent (MLD). The MLD shall be allowed to inspect the site of the discovery. The MLD shall complete the inspection and make recommendations for treatment within ~~24~~ 48 hours of notification by the NAHC.

MM Cult 5a: If a sacred site is encountered within the project alignment, WMWD will work with the tribes to avoid the site, if feasible.

MM Cult 6: Plants and trees removed or damaged by the proposed project shall be replaced pursuant to the standards and requirements of each jurisdiction within which the loss or damage occurs.

MM Cult 7: The location of all existing mature trees, palms and other landscaping shall be noted on the construction drawings that will be prepared for this project to facilitate review and proper permitting by the affected jurisdiction. Generally, a mature wood tree is considered to have a diameter of 8-10 inches or more at 4 ½ feet off the ground. A palm tree is considered to be mature at 25 feet or more in height. Citrus trees are mature when commercial levels of fruit-bearing occur at about 5 to 7 years.

MM Cult 8: If construction activities that require digging are located closer than eight feet from a mature palm (over 25 feet in height) , a certified arborist shall evaluate the specific palm(s) to determine if the palm can remain in place, be relocated successfully, or if project redesign may be warranted. If the palm must be removed, replacement shall be pursuant to the requirements of the jurisdiction within which the palm(s) is/are located.

MM Cult 9: If construction activities that require digging are located closer than thirty feet from the drip line of a mature wood tree, a certified arborist shall evaluate the specific tree(s). The arborist will recommend the course of action most likely to preserve the tree including but not limited to trimming to help with stability, no action and the tree remains in place as is, project redesign, or the means to achieve a successful relocation. If the tree must be removed, replacement shall be commensurate with the size and age of the tree being removed, pursuant to the requirements of the jurisdiction within which the tree(s) is/are located, and in no case shall replacement trees be less than 24-inch box size trees.

MM Cult 10: In order to reduce impacts to historical resources along the Monroe Alternative route, jack-and-bore tunneling or a similar technique that does not impact a surface feature shall be used instead of traditional trenching techniques. This would protect impacts to features such as the Riverside Upper Canal (CA-RIV-4495H), Riverside Lower Canal (CA-RIV-4791H), RCF-6, and RCF-7.

MM Cult 11: In order to reduce impacts to historical resources associated with the Realignment Alternative with Additional Connections, new wells constructed as part of the Central Feeder Connection, shall be not be placed within the footprint of the historic house foundation site located on the southwest corner of the intersection of Nevada Street and San Bernardino Avenue or within the footprint of the Old Crown Jewel packinghouse site (Packing House Christian Academy) located on the southwest corner of the intersection of Alabama Street and San Bernardino Avenue.

MM Cult 12: Prior to construction and if the Monroe Street Alternative route is for the Central Reach is selected, P-33-17542 and P-22-17543 must be evaluated for NRHP or CRHR eligibility and the appropriate mitigation measures developed and implemented, if needed. Mitigation measures could include such things as:

- avoidance,
- modified construction techniques, or
- documentation and removal.

MM Cult 13: If the local jurisdiction where mature trees and landscaping are being removed does not have standards or tree replacement requirements, WMWD shall install 15 gallon trees or larger at a 1:1 replacement ratio and other landscaping similar to what was removed or damaged.

Realignment Alternatives Determination of Significance under CEQA

As stated in the 2005 PEIR, impacts to historical resources and to previously unknown archaeological and paleontological resources would be less than significant after incorporating mitigation measures **MM Cult 1** through **MM Cult 13**. The 2005 PEIR remains adequate to address potential impacts related to cultural resources and the mitigation measures contained

therein, as described above, will be applicable to the proposed project. With the implementation of **MM Cult 4 and 4a**, potential impacts related to unique paleontological resources would mitigated to **less than significant** impacts.

With implementation of mitigation measures **MM Cult 1** through **MM Cult 13** impacts to cultural, historical, and yet unknown archaeological and paleontological resources will be **less than significant**.

4.4.4 No Project/Action Alternative

Under the No Action Alternative, no physical changes to the environment would occur. The proposed facilities would not be constructed, and existing WMWD facilities and sources of water would continue to be operated as under current conditions. Potential effects related to cultural resources/paleontology would be avoided.

4.5 ENERGY

This section describes the potential impacts on energy resources that could result from the operation of the project. Potential impacts related to criteria air pollutant and greenhouse gas concentrations are contained in Section 4.2 of this SEIR/EIS.

In addition to the 2005 Certified Program EIR (2005 PEIR) and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- California Energy Commission, *County Electricity Deliveries by NAICS*, 2007. (Available at www.ecdms.energy.ca.gov/utilbynaicselec.aspx, accessed on December 4, 2009.)
- Western Municipal Water District, *Final Environmental Impact Report, La Sierra Water Transmission Pipeline Project*, certified February 20, 2008. (Appendix J)
- Western Municipal Water District, *Updated Integrated Regional Water Management Plan Report*, May 2008. (Available at http://www.wmwd.com/pdfs/IRWMP_updated08.pdf, accessed on September 22, 2010.) (WMWD IRWMP)

4.5.1 Setting/Affected Environment

Facilities that require energy during the operation of the project include electrically driven pump/booster stations and wells. Electricity to operate these pumps and wells will be purchased by WMWD from various electricity providers, including SCE and City of Riverside, depending on the location of the pump or well.

Imported water is supplied to WMWD by Southern California Metropolitan Water District (MWD) from the State Water Project and Colorado River Aqueduct. Based on California energy commission reports, it is estimated that 3,236 kW-hr would be required to extract one acre foot of water from the State Water Project and 2,000 kW-hr would be required to extract one acre foot of water from the Colorado River Aqueduct.[1]

Southern California Edison Company (SCE) is the primary distribution provider for electricity in the project area. SCE provides service to customers within a 50,000 square mile area of central, coastal, and Southern California, including Riverside and San Bernardino counties.

SCE derives its electricity from a variety of sources (see **Table 4.5-A, SCE Energy Resources**). The largest single source of electrical power is generated from natural gas plants (46%); 19% comes from nuclear sources, followed by eligible renewables, such as geothermal, wind and solar (16%). Coal burning plants and large hydroelectric generators made up 12% and 7% of the

[1] County of Riverside, The Villages of Lakeview Final Environmental Impact Report No. 471, SCH 2006071095, Annotated Draft EIR, page 5.3-78, certified March 23, 2010.

power mix in 2008, but these sources were projected to be cut further in 2009. As of April 2010, SCE had not yet published its actual 2009 power mix. The total electricity consumption for 2007 within the SCE planning area was 100,470.271108 (million) kWh or 1.005 x 10^{14} GWh.

The City of Riverside Public Utilities (RPU) provides electricity to customers within the city, which is where the Mockingbird Connection pump and the Sterling Street pump are located. In 2008-2009, RPU provided 2145 kWh (million) to 106,145 meters including residential, commercial, and industrial customers. RPU's sources[2] of this power vary, as shown in **Table 4.5-B, RPU Energy Resources**.

Table 4.5-A
SCE Energy Resources

Energy Resources	***2008 Actual Power Mix***	***2009 Projected Power Mix***
Eligible Renewables	16%	16%
Biomass & Waste	1%	2%
Geothermal	9%	9%
Small Hydroelectric	2%	1%
Solar	1%	1%
Wind	3%	3%
Coal	12%	10%
Large Hydroelectric	7%	5%
Natural Gas	46%	51%
Nuclear	19%	18%
Other	0%	<1%
TOTAL	**100%**	**100%**

Source: Southern California Edison, *Customer Connection, Power Content Label,* April 2009.

[2] City of Riverside Public Utilities, *Financial Report*, 2008-2009.

Table 4.5-B
RPU Energy Resources

Energy Resources	*2008 Actual Power Mix*	*Projected Power Mix*
Eligible Renewables	2%	13%
Biomass & Waste	<1%	<1%
Geothermal	1%	13%
Small Hydroelectric	0%	<1%
Solar	<1%	<1%
Wind	1%	<1%
Coal	33%	54%
Large Hydroelectric	18%	6%
Natural Gas	42%	11%
Nuclear	5%	16%
Other	0%	<1%
TOTAL	**100%**	**100%**

Source: Riverside Public Utilities, *2010 First Quarter Project Power, Purchases, Power Content Label*. (Available at *http*://www.riversideca.gov/utiltities/elec-powerlabelcontent.asp accessed on 4/30/10.

The total estimated electricity consumption reported by the California Energy Commission during 2007 within Riverside County and San Bernardino County for agriculture and water pumps used by utilities, such as those proposed by the project alternatives, was 1,115,629 megawatt-hours (MWh). The total electricity consumption in Riverside/San Bernardino County is 30,149,990 (MWh). Water pumped for utilities and agriculture accounts for approximately 3.7 percent of the total electricity consumption in Riverside/San Bernardino County.

4.5.2 Summary of 2005 Project Alignment Certified Program EIR for Riverside-Corona Feeder Project

Energy usage, other than as it related to air quality, was not addressed in the 2005 PEIR.

4.5.3 Analysis of the Riverside-Corona Feeder Project Alternatives

The following discussion evaluates the potential energy impacts associated with the 2005 Project Alignment Alternative, the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative). The No Project/Action Alternative would use no energy.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines, and Western Municipal Water District's "Environmental Checklist" for the subject project (see Appendix A of this document) does not include questions associated specifically with energy use. The CEQA Guidelines state that the environmental analysis "shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy." (Title 14 CCR Section 15126.4(a)(1)). The inefficient and unnecessary consumption of energy, in the form of non-renewable fuels such as natural gas and oil, constitutes an adverse environmental impact. Appendix F of the CEQA Guidelines is used as a basis for the following thresholds and indicates that impacts related to energy may be considered potentially significant if the project would:

- cause a substantial increase in the use of fossil fuels such as coal, natural gas and oil
- result in an adverse effect on local and regional energy supplies and energy resources.

Design Considerations/Avoidance

The goal of conserving energy implies the wise and efficient use of energy. The conjunctive use aspects of the project result in a reduced reliance on imported water which avoids energy use to transport water from outside the local region in keeping with the WMWD IRWMP.

The Sterling Hydroelectric Station, which will be constructed as part of the Realignment Alternative and Realignment Alternative with Additional Facilities will generate electricity. As part of the Realignment Alternative with Additional Facilities, the Clay Street and Mockingbird Connection pump station locations may also have the capability of a hydroelectric station to generate electricity. However, because no design work has been completed at this time the possible electricity generation at these pump stations has not been analyzed herein although it may further reduce energy consumption.

Potential Significant Impacts/Environmental Consequences

Threshold: *The project would cause a substantial increase in the use of fossil fuels such as coal, natural gas and oil.*

2005 Project Alignment Alternative

The energy-consuming components of the 2005 Project Alignment Alternative consist of a 2,500 horsepower (hp) pump station designed to lift water from the City of Riverside's Waterman Pipeline into the 2005 Project Alignment which operates at an hydraulic gradient line (HGL) of 1250±, and up to twenty (20) 350 HP x 2,200 gallons per minute (GPM) new or existing groundwater production wells to be located within the San Bernardino Basin Area.

The proposed pump station (referred to as the 2005 Project Pump Station in this Section) would be constructed within the City of San Bernardino on a vacant lot near the intersection of Orange Show Road and Waterman Avenue. The exact locations of the existing and/or proposed wells have not yet been determined, although the general location of the 2005 Project Alignment well field is shown in **Figure 3.0-2**. **Table 4.5-C** shows the electrical consumption from the facilities included as part of the 2005 Project Alignment Alternative.

Table 4.5-C
2005 Project Alignment Alternative Electricity Usage

Facility	Hp	Quantity	MWh/year Consumed
2005 Project Pump Station	2,500	1	10,183.50
2005 Project Well Field	350	5	9,450.00
	TOTAL (MWh/Yr)		**19,633.50**

Note: 2005 Project Alignment –Pump Station assumed to operate at 62% capacity 24 hours a day 365 days per year. Five (5) of the 20 total wells assumed to operate at any one time to meet operating requirements at 7,200 hours per year. 750 watt-hours (Wh) per horsepower was used as the conversion factor.

The estimated annual electricity consumption from the 2005 Project Alignment Alternative is approximately 19,664 MWh per year. This estimated level of consumption represents approximately 1.76 percent of the electricity used in San Bernardino and Riverside counties by utilities for agriculture and water pumps (0.065 percent of the total electricity consumed in Riverside/San Bernardino counties).

The increase in electricity consumption from the 2005 Project Alignment Alternative is not expected to result in adverse impacts to the existing power supply, simply on the basis that energy to be used by the project would be a very small fraction of overall electrical usage in the area and the relevant power suppliers have given no indication that there would be a problem meeting the needs of the project. The 2005 Project Alignment does not cause a substantial increase in energy consumed compared to regional use for similar purposes or consumption in the region as a whole, therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power; less than significant impacts will result.

Realignment Alternative

The energy-consuming components of the Realignment Alternative include the pump station and well field analyzed in the 2005 Project Alignment Alternative and also consists of a new pump station and hydroelectric station to be located near WMWD's Arlington Desalter. These facilities are referred to as the Sterling Pump Station and Sterling Hydroelectric Station. The pump station specifications are shown in **Table 4.5-D, Sterling Pump Station Facility**, below (Table 2-1 of the Draft Environmental Impact Report La Sierra Water Transmission Pipeline Project, attached as Appendix J, herein). Due to its elevated position in relation to the Mills Treatment Plant, a hydroelectric station will be housed within the same building as the pump station and will convert potential energy to electricity, as shown in **Table 4.5-E, Sterling Hydro Station** (Table 2-2 of the Draft Environmental Impact Report La Sierra Water Transmission Pipeline Project).

Table 4.5-D

STERLING PUMP STATION FACILITY

Location	On Sterling Avenue or extension of Sterling Avenue at Pierce St near the Arlington Desalter at 11615 Sterling Street
Foot Print	70 feet x 100 feet
Pump Lift	570 feet (from approx. 680 ft to 1250 ft USGS hydraulic grade line)
Horsepower at 75% efficiency	4000 horsepower at 45 cubic feet per second at 570 feet of lift

Table 4.5-E

STERLING HYDRO STATION

Location	Near the Arlington Desalter at 11615 Sterling Street
Foot Print	70 feet x 100 feet
Available Energy for Conservation	300 feet
Kilowatts Generated at 35% efficiency	265 kw at 30 cubic feet per second at 300 feet of head

The Sterling Pump Station is anticipated to run only a few weeks per year while the Mills Water Treatment Plant is out of service for maintenance (Page 2-2 of the Draft Environmental Impact Report La Sierra Water Transmission Pipeline Project). The Sterling Hydroelectric Station is assumed to operate only 6 months a year. **Table 4.5-F** shows the electrical consumption from the facilities included as part of the Realignment Alternative.

Table 4.5-F
Realignment Alternative Electricity Usage

Facility	Hp	Quantity	MWh/year Consumed
2005 Project Pump Station	2,500	1	10,183.50
2005 Project Well Field	350	5	9,450.00
Sterling Pump Station*	4,000	1	1,339.20
TOTAL CONSUMPTION (MWh/Yr)			**20,972.70**
	Drop (feet)	**Kilowatts per hour generated @ 35% efficiency**	**MWh/year Generated**
Sterling Hydroelectric Station[1]	300	265	*+ 1,113.00*
TOTAL CONSUMPTION LESS GENERATED AMOUNT (MWh/Yr)			**19,859.70**

Note: Pump Station assumed to operate at 62% capacity 24 hours a day. Wells assumed to operate 7,200 hours per year. 750 watt-hours per horsepower was used.
Sterling Pump Station assumed to operate at 62% capacity for 24 hours per day.
*30 days used instead of 365 days as the Sterling Pump Station will only run a few weeks a year while the Mills Water Treatment Plant is out of service for maintenance.
[1] Sterling Hydroelectric station is anticipated to run approximately 25 weeks a year.

As shown in the table above, the Realignment Alternative is estimated to consume approximately 20,973 MWh per year. The Sterling Hydroelectric Station is estimated to generate 1,113 MWh per year for a net consumption under this alternative of 19,860 MWh per year. This estimated level of consumption represents approximately 1.78 percent of the electricity used in San Bernardino and Riverside counties by utilities for agriculture and water pumps (0.066 percent of the total electricity consumed in Riverside/San Bernardino counties).

The increase in electricity consumption from the 2005 Project Alignment Alternative is not expected to result in adverse impacts to the existing power supply. Due to the electricity generated by the Sterling Hydroelectric Station, the electricity consumption from the Realignment Alternative is similar to the electricity consumption from the 2005 Project Alignment Alternative, with a difference of only an additional 226 MWh per year. The Realignment Alternative does not cause a substantial increase in energy consumed compared to the 2005 Project Alignment Alternative, nor to existing baseline conditions, regional use for similar purposes, or consumption in the region as a whole, therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power; **less than significant** impacts will result.

Realignment Alternative with Additional Facilities (Preferred Alternative)

The energy-consuming components of the Realignment Alternative with Additional Facilities (Preferred Alternative) are the same as those described previously under the Realignment Alternative, but also include two more pump stations which will operate year-round. The Clay Street Connection includes the construction of a booster station with pumps to allow water to flow in either direction. This pump station is estimated to require approximately 2,400 hp. The Mockingbird Connection includes a related pump station which is estimated to require approximately 3,000 hp. Both the Clay Street and Mockingbird Connection pump station locations may also have the capability of hydroelectric Generation similar to the Sterling Pump Station. However, because no design work has been completed at this time the possible electricity generation at these pump stations has not been included although it may reduce the energy consumption from this alternative.

The Central Feeder Connection would connect up to five new or existing groundwater production wells located within the San Bernardino Basin Area (exact locations not determined) into the San Bernardino Valley Municipal Water District's Central Feeder Pipeline. This will not represent a change in energy consumption from the other alternatives because it is assumed that only five (5) wells of the 20 possible wells associated with RCF operations will be used at any one time to meet operating requirements. These wells are assumed to operate with similar power needs as the well field under the 2005 Project Alignment Alternative.

The energy consumption from the all of the facilities in the Preferred Alternative is shown in **Table 4.5-G**.

Table 4.5-G
Realignment Alternative with Additional Facilities (Preferred Alternative) Electricity Usage

Facility	Hp	Quantity	MWh/year Consumed
2005 Project Pump Station	2,500	1	10,183.50
Wells[2]	350	5	9,450.00
Sterling Pump Station[1]	4,000	1	1,339.20
Clay Street Pump Station	2,400	1	9,776.16
Mockingbird Pump Station	2,800	1	11,405.52
	TOTAL CONSUMPTION (MWh/Yr)		42,154.38
	Drop (feet)	**Kilowatts per hour generated @ 35% efficiency**	**MWh/year Generated**
Sterling Hydroelectric Station[3]	300.00	265	*+ 1,113*
TOTAL ENERGY CONSUMED LESS GENERATED AMOUNT (MWh/Yr)			**41,041.38**

Note: Pump Station assumed to operate at 62% capacity 24 hours a day. Wells assumed to operate 7,200 hours per year. 750 watt-hours per horsepower was used. Sterling Pump Station assumed to operate at 62% capacity for 24 hours per day.
[1] 30 days used instead of 365 days as the Sterling Pump Station will only run a few weeks a year while the Mills Water Treatment Plant is out of service for maintenance.
[2] It is assumed that only five (5) wells of the 20 possible wells associated with RCF operations will be used at any one time to meet operating requirements
[3] Sterling Hydroelectric station is anticipated to run approximately 25 weeks a year.
Realignment Alternative with Additional Connections – Clay Street and Mockingbird Pump Stations assumed to operate at 62% capacity for 24 hours per day. Wells assumed to operate 8 hours per day.

The electricity demand for the Preferred Alternative is approximately 41,041 MWh per year which includes the reduction in power consumption due to the generation of 1,113 MWh from the Sterling Hydroelectric Station. The annual electricity consumption is approximately double that consumed under the Realignment Alternative due to the additional facilities (Mockingbird, and Clay Street pump stations). The estimated increase in the use of electricity under the Preferred Alternative would be approximately 3.68 percent of the electricity used in San Bernardino and Riverside Counties by utilities for agriculture and water pumps (0.14 percent of the total energy use of San Bernardino and Riverside Counties).

Other measures were considered to reduce power consumption. The CAPCOA White Paper on CEQA and Climate Change (CAPCOA) "identifies existing and potential mitigation measures that could be applied to projects during the CEQA process to reduce a project's GHG emissions." Although most suggested mitigation measures do not relate to a project of this nature, a couple of the CAPCOA mitigation measures may help reduce the energy use by the project. CAPCOA MM E-1 regarding high-efficiency pumps requires the use of high-efficiency pumps. WMWD currently uses pumps with high efficiency motors and selects the optimal pump to use for the application (i.e. location, hydrology, size, purpose, etc.). This results in low energy use for the application. The "most energy efficient pump" may be a motor that is rated as more energy efficient than the pump that is selected, but it may not be able to move enough water (not have enough horsepower) or it may not be suited for the particular hydraulic conditions. The

project will use pumps that are as energy efficient as possible without sacrificing performance related to the achievement of the project objectives, as required by **MM Air 5**.

CAPCOA MM E-5 regarding an on-site renewable energy system, requires that a project provide onsite renewable energy system(s). Nonpolluting and renewable energy potential includes solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, projects may take advantage of net metering with the local utility. In addition to the onsite hydro generation of the project and to further reduce energy and thereby GHG impacts, the installation of solar panels to generate energy was also considered. To reduce consumption due to all non-pumping related energy, solar generation is required for lights, timers, landscape irrigation systems, etc. pursuant to **MM Air 6**. However, the installation of the panels on a scale large enough to run the pumps would be infeasible due to the lack of roof space on the buildings housing the pump stations (pumps are removed/serviced through roof access). Land areas adjacent to the pump station buildings are minimized so as not to cause other impacts, such as ground disturbance at the Mockingbird pump station site which would affect biological resources, and the lack of land area prevents the installation of solar panels.

Regarding wind power, there are several factors to consider when determining feasibility. The main supply-side barriers to wind farm development are siting, permitting, resource adequacy, and noise and visual impacts according to survey results published in a CEC study[3]. The most important issue with wind power is resource adequacy (i.e., strong winds). To find adequate winds in Riverside County, wind power systems are located in open areas such as the areas near Whitewater and Desert Hot Springs, rather than within urbanized areas. Noise and visual impacts can also restrict wind power development near residential areas. Residential is particularly sensitive to both noise and aesthetic impacts. The pipeline portions of the project are located mostly in streets which would not allow for wind turbines. The well fields and pump station sites are located in areas adjacent to existing residences and/or commercial development. These combined factors make small wind power infeasible for the project.

According to another report for the CEC[4], there are no geothermal projects or prospects in Riverside County with the nearest resources in Imperial County and one site in Ventura County.

Therefore, on-site renewable wind or geothermal energy generation is not feasible for this project, but these systems are part of the strategy for GHG emissions reductions that will be achieved by the energy sector in the fulfillment of AB 32. Once electricity providers increase their use of renewable energy, a greater proportion of the energy provided to the proposed project will be made up of renewable energy and there will be a further reduction in the project's projected energy-related GHG emissions.

On-site generated biogas is not feasible for a project of this nature. Biogas technology is more appropriate for projects that produce and store large quantities of biomass such as wastewater

[3] Chapter 5, Market Barriers of the *Emerging Renewables Program Small Wind Incentives Study* consultant report for the CEC, July 2009. (CEC 300-2009-003). Available at www.energy.ca.gov//publications/

[4] Figure 1 of the *New Geothermal Site Identification and Qualification* consultant report for the CEC, Public Interest Energy Research Program. April 2004 (P500-04-051). Available at http://www.energy.ca.gov/pier/project_reports/500-04-051.html

treatment plants, landfills, and animal manure from dairy farms[5]. However, landfill gas capture and reuse is currently being developed by the California Air Resources Board (CARB) and the California Integrated Waste Management Board (CIWMB). Once electricity that is generated by biogas facilities becomes available, that energy will feed the transmission grid and will be available for use by the proposed project.

Interruptible service programs were also considered but rejected as infeasible. Western currently has two pump stations on interruptible rate schedules, the Inline Pump Station and Oleander Pump Station. The In-Line Pump Station is strictly a non-potable water supply pump station, and the Oleander Pump Station has both non-potable and potable pumping capability, with the potable pumps used as redundant capacity for the 1837 pressure zone. If these stations were off-line for a short time, there would not be an issue for the potable system. The purpose of the RCF is to improve the reliability of WMWD's potable water supply; to reduce possible water shortages during dry years or times of the year; to reduce dependence upon the direct delivery of imported water during dry year conditions; to improve groundwater quality; to deliver available imported water to its customers; and to contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient. If the potable water pumping stations associated with the RCF project were selected to be offline as part of a power interruption program, this could jeopardize WMWD's ability to supply potable water when needed or to move water into other parts of the regional system to assist with drought protection efforts. Due to this risk, this type of mitigation was not considered feasible for this project.

While this is a substantial increase compared to the other two alternatives with respect to the energy used for pumping, it still represents a very small amount compared to comparable uses and electricity use in the region as a whole therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power; **less than significant** impacts will result. However, to further minimize consumption, mitigation measures **MM Air 5** and **6**, and **MM Energy 1** shall be implemented for the Realignment Alternative with Additional Facilities (Preferred Alternative).

Threshold: *The project would result in an adverse effect on local and regional energy supplies and energy resources.*

As presented above, the level of consumption by any of the alternatives is small, substantially less than one (1) percent of total consumption in the two-county region. The implementation of MM Energy 1, and MM Air 5 and 6 will reduce the projected level of consumption of the Preferred Alternative further. Neither the City of Riverside nor SCE commented on possible shortages in electricity supplies with respect to the proposed project during the NOP/NOI comment period. Based on the varied sources and level of power supplies available to SCE and City of Riverside, and WMWD's implementation of its IRWMP, it is anticipated that the estimated levels of consumption will result in a less than significant adverse effect on local and regional energy supplies and energy.

[5] http://www.oregon.gov/ENERGY/RENEW/Biomass/biogas.shtml

Realignment Alternatives Proposed Mitigation Measures/Minimization

Although not a significant increase in energy use, to minimize consumption, the following minimization measure shall be implemented pursuant to NEPA for the Realignment Alternative with Additional Facilities (Preferred Alternative). Since no adverse impacts to energy use were identified, no mitigation is required under CEQA.

MM Energy 1: Hydroelectric generating stations shall be constructed as part of the Mockingbird and Clay Street Connections pump station facilities.

The Realignment Alternative with Additional facilities includes the Sterling hydroelectric station, which will convert the potential energy of an elevated water supply to electricity. With incorporation of **MM Energy 1**, hydroelectric energy will also be generated at the Mockingbird and Clay Street pump stations. Mitigation measures **MM Air 5** and **6** also require measures to reduce consumption and generate power. This generation of electricity by the project contributes to meeting the energy conservation goals of decreasing reliance on fossil fuels and increasing reliance on renewable energy sources.

4.5.4 No Project/Action Alternative

Since no construction or operations of the project would occur, no potential energy usage impacts would result.

4.6 GROUNDWATER LEVELS

Potential impacts related to the potential to deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted), or cause undesirably high groundwater levels in the area of the San Bernardino "Bunker Hill" Basin Area were found to be less than significant in the Initial Study/NOP prepared for this project (Appendix A). In response to the Initial Study/NOP, comment letters from the City of San Bernardino Municipal Water Department and the City of Colton raised concerns over the issue of potentially significant impacts related to groundwater levels. Therefore, the focus of the following analysis is the potential impacts related to whether the proposed project will deplete groundwater supplies or interfere substantially with groundwater recharge. A summary of the Groundwater Levels section of the 2005 Certified Program EIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment) is included in the following discussion.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Geoscience Support Services, Inc., *Sensitivity to Prolonged Dry Base Period and Land Subsidence Modeling Riverside-Corona Feeder Project Conjunctive Use Scenarios*, prepared for Western Municipal Water District, March 12, 2010. (Appendix F) (2010 Geoscience)
- Geoscience Support Services, Inc., *Groundwater Modeling of Riverside-Corona Feeder Project Conjunctive Use Scenarios*, prepared for Western Municipal Water District, October 23, 2009. (Appendix F) (2009 Geoscience)
- Western-San Bernardino Watermaster, *Annual Report of the Western-San Bernardino Watermaster for Calendar Year 2007*, August 1, 2008. (Available at http://webserver.sbvmwd.com/imgs/reports/wsbwm_ar_2007.pdf, accessed on August 2, 2009.) (WSBWM a).
- Chino Basin Watermaster, *Chino Basin Optimum Basin Management Program, State of the Basin Report 2006* prepared by Wildermuth Environmental, Inc., July 2007. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 30, 2008.) (OBMP 2006 State of the Basin Report)
- Chino Basin Watermaster, *Optimum Basin Management Program, Draft Phase I Report*, prepared by Wildermuth Environmental, Inc., August 19, 1999. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on August 11, 2009.) (OBMP)
- Chino Basin Watermaster and Inland Empire Utilities Agency, *Chino Basin Dry-Year Yield Program Modeling Report, Volume III*, prepared by Wildermuth Environmental, Inc., July 2003. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 19, 2009.) (DYYP)

- Chino Basin Watermaster, *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume I,* prepared by Black & Veatch., December 2008. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 19, 2009.) (DYYP Expansion)
- California Department of Water Resources, *Final State Water Project Delivery Reliability Report 2007,* August 2008. (Available at http://baydeltaoffice.water.ca.gov/swpreliability/, accessed on December 5, 2009.) (DWR Reliability Report)
- Metropolitan Water District of Southern C*alifornia*, *Final Groundwater Assessment Study; Report Number 1308, Chapter 4 – Groundwater Basin Reports*, September 2007. Available at http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/groundwater/gwas.html, accessed on August 21, 2009.)
- San Bernardino Municipal Water District and WMWD, *Santa Ana River Water Right Applications for Supplemental Water Supply Final EIR,* certified January 2007. (Available at WMWD) (Water Right EIR)
- Chino Basin Watermaster, *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume IV (CEQA Mitigated Negative Declaration/Initial Study),* prepared by Black & Veatch in association with Tom Dotson & Associates. December 2008. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 19, 2009.) (DYYP Expansion MND/IS)
- Inland Empire Utilities Agency, *Final Subsequent EIR for the IEUP Peace II Project,* September 25, 2010. (Available at http://www.ieua.org/news_reports/notices.html, accessed on October 20, 2010) (SEIR 2010)
- San Bernardino Valley Municipal Water District, *Regional Water Facilities Master Plan Draft EIR, SCH No. 1999091073,* October 13, 2000. (Available at WMWD) (SBVMWD 2000)

4.6.1 Setting/Affected Environment

In addition to the discussion of groundwater below, see also a general discussion of water rights and background issues in Section 2.1, Background, and analysis of groundwater quality in Section 4.7.

Groundwater Generally

Groundwater is found underground in cracks and spaces in soil, sand and rocks. The area where water fills these spaces is called the saturated zone. The top of this zone is called the water table. The water table may be only a foot below the ground's surface or it may be hundreds of feet down. The water table may rise or fall depending on many factors. Heavy rains or melting snow may cause the water table to rise, or an extended period of dry weather or excessive groundwater extraction (pumping) may cause the water table to fall. Groundwater supplies are naturally replenished, or recharged, by rain and snow melt. Groundwater can also be artificially recharged

utilizing water from other sources including water imported from other geographic areas and recycled water.

Groundwater is stored in and moves slowly through layers of soil, sand and rocks called aquifers. The speed at which groundwater flows, depends upon the slope of the water table, upon the size of the spaces in the soil or rock and how well the spaces are connected. Aquifers typically consist of gravel, sand, sandstone, or fractured rock, like limestone. These materials are permeable because they have large connected spaces that allow water to flow through. Where the water table meets the surface, water in aquifers emerges naturally through a spring or through discharges into lakes and streams.

Groundwater can also be extracted through mechanical means by drilling a well into the aquifer. A well is a perforated pipe in the ground that fills with groundwater. This water then can be brought to the surface by a pump. Pumping water from a well or a group of wells in any particular area, may cause a drop in groundwater levels, locally or regionally, depending upon the amount of water extracted.

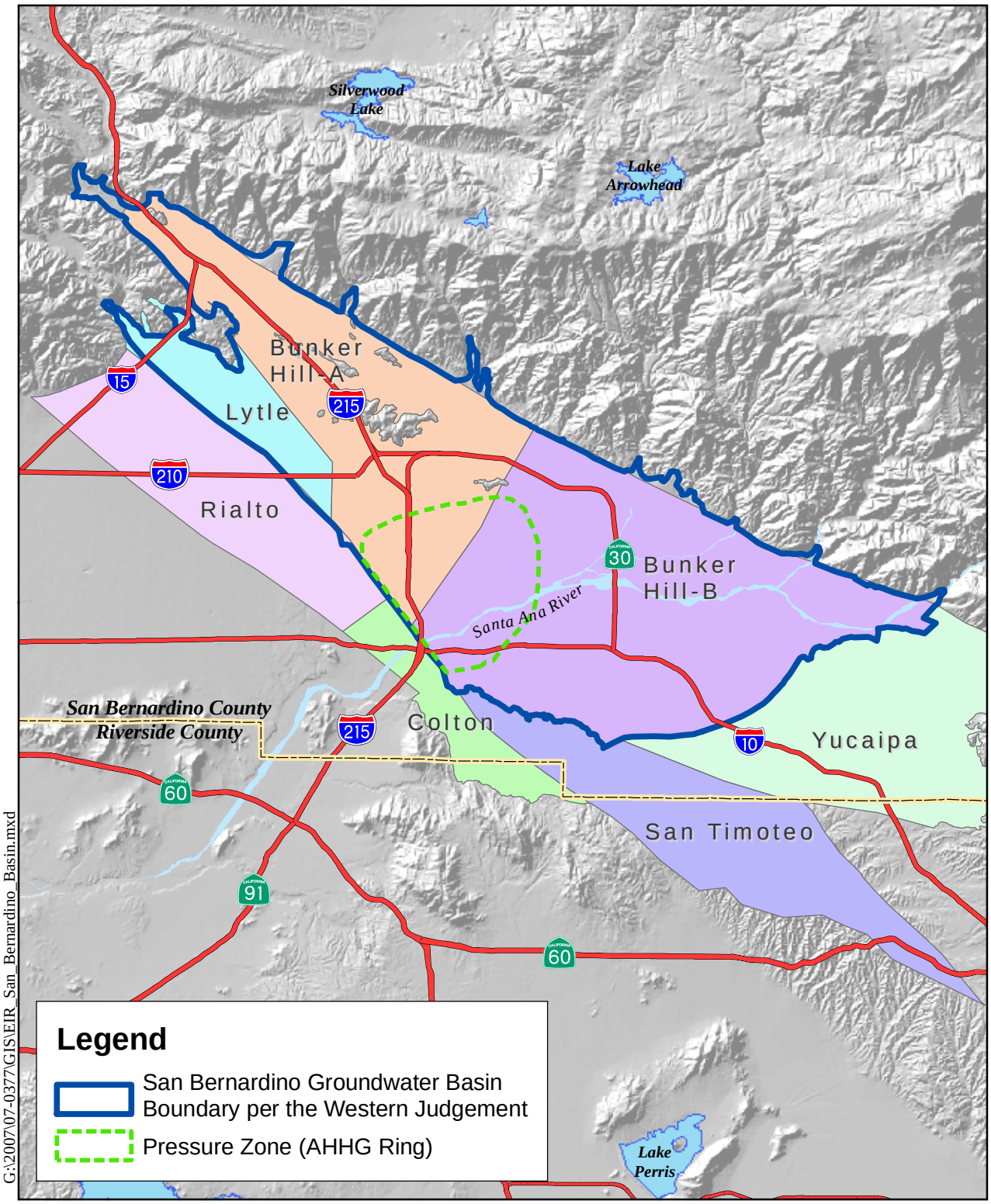
San Bernardino Groundwater Basin

Characteristics of the San Bernardino Groundwater Basin

The San Bernardino Groundwater Basin (Basin Area, aka Bunker Hill Basin) is a sediment-filled trough situated between the San Andreas and San Jacinto Faults in the upper part of the Santa Ana River Basin near the base of the San Bernardino Mountains. This aquifer is divided into four primary sub-basins including: Lytle Sub-basin, Bunker Hill Sub-basin A, Bunker Hill Sub-basin B and the Bunker Hill Pressure Zone (**Figure 4.6-1, San Bernardino Groundwater Basin**). The Bunker Hill Pressure Zone is also referred to as the Area of Historic High Groundwater (AHHG). Groundwater within the Bunker Hill Basin generally flows west from recharge areas along the base of the San Bernardino Mountains towards the Bunker Hill Pressure Zone. Historically, groundwater discharged as upward flow to a freshwater marshland adjacent to the San Jacinto Fault (near Interstate 215), as flow rising into Warm Creek, or as underflow to the Rialto-Colton Basin through permeable materials in the vicinity of the Santa Ana River. After 1945, increased ground water pumping near the San Jacinto Fault caused the water table to fall and the marshland became dry. Since then, water levels have increased and been routinely within 10 feet of land surface in some areas. (SBVMWD 2000)

As illustrated in **Figure 4.6-2, Cross Sectional View of the San Bernardino Groundwater Basin**, the Basin Area is also divided vertically by horizontal layers of impermeable soil and rock materials. These materials are referred to as "confining members." In general, the basin is divided by two confining members creating the upper water-bearing unit, the middle water-bearing unit and the lower water-bearing unit. The upper and middle water-bearing units provide most of the water to municipal and agricultural wells in the Basin Area. The middle confining member is as much as 300 feet thick in the AHHG, but thins and becomes less effective toward the margins of the basin at the base of the mountains[1].

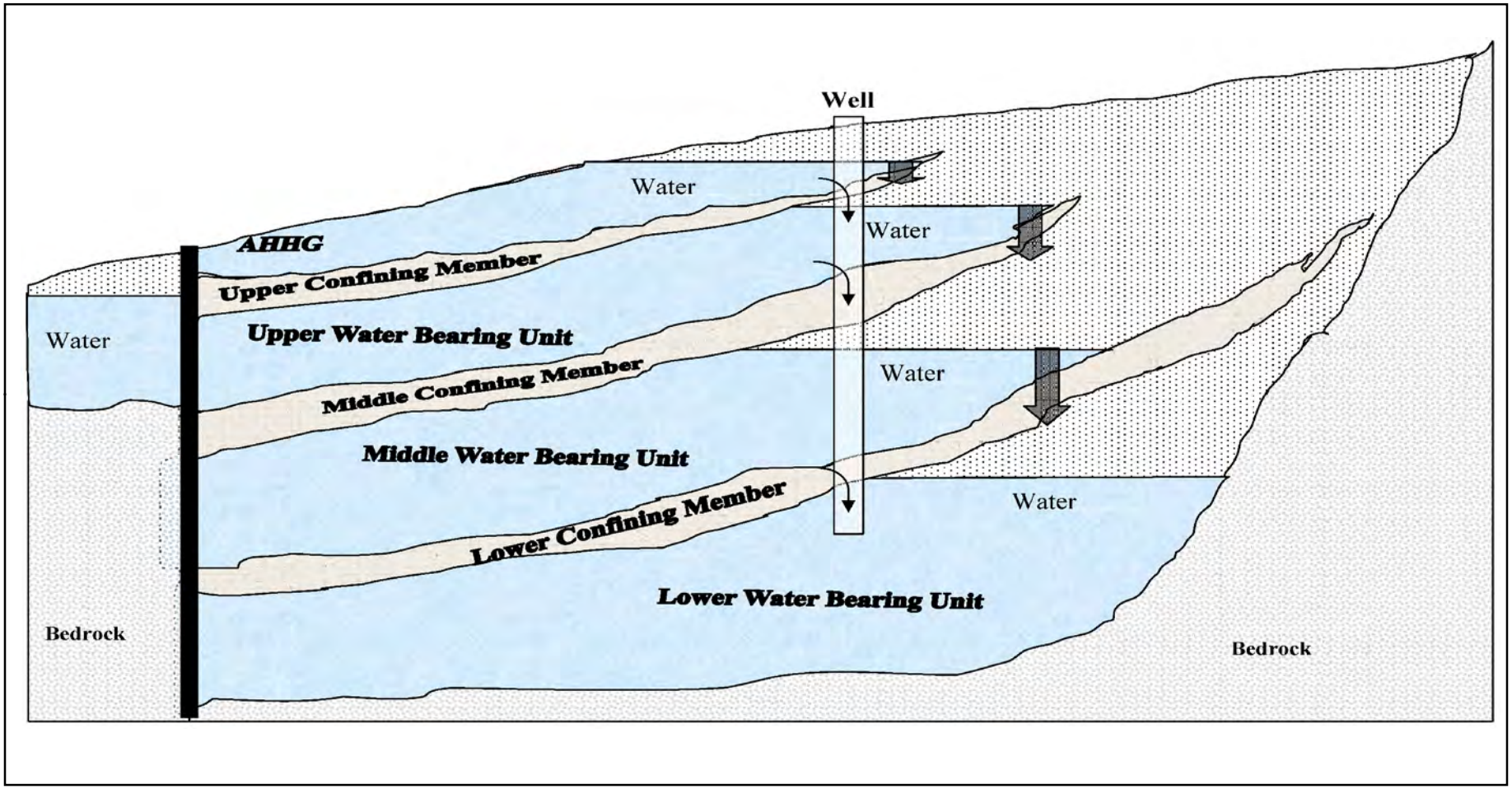
[1] San Bernardino Valley Municipal Water District, Regional Water Facilities Master Plan Water Quality Study. Prepared by Camp Dresser & McKee. May 1996 (As referenced in the 2005 Program EIR.) Final EIR certified February 2001, SCH No. 1999091073.



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Source: Western Municipal Water District

Figure 4.6-1
San Bernardino Groundwater Basin



Source: 2005 Program EIR, Figure II-5b

Figure 4.6-2
Cross Sectional View of the San Bernardino Groundwater Basin

Historic Groundwater Levels

The storage capacity of the Basin Area is estimated to be about 5,976,000 acre feet[2]. Historically the amount of groundwater in storage in the Basin Area has varied widely in response to natural hydrologic conditions. There have been prolonged periods of below-average recharge and prolonged periods of above-average recharge. Historic high groundwater levels were recorded between 1915 and 1920. This period was followed by a decline in water levels until 1935. From 1935 to 1945 water levels rose to near the 1915–1920 levels. Water levels declined between 1945 and 1969, resulting in a decline in storage of about 750,000 ac-ft. In 1970, water levels began to rise again and peaked around 1984. Between 1984 and 1991 water levels declined in the basin an average of 80 feet, resulting in a decline in storage of about 430,000 ac-ft.[3] Heavy rains recorded in 1993 raised water levels throughout the Basin Area. From 1993 to 2000, the Bunker Hill Basin Pressure Zone, the Redlands area of the Bunker Hill Basin and the southern portion of the Lytle Creek Basin all had significant recoveries in groundwater levels. The groundwater levels in Yucaipa have dropped slightly since 1991 and most of the other areas in the Basin Area have generally remained the same since 1991[4].

The San Bernardino Valley Municipal Water District has divided the Bunker Hill Basin into nine sub-areas to monitor and assess water levels. Two or three representative wells (index wells) were selected in each of these sub-areas. Historical data was compiled for these representative wells including high and low water levels. The index wells and the historic high and low water levels are shown on **Figure II-5c**of the 2005 PEIR (Appendix B of this SEIR/EIS document).

In general, lower storage conditions tend to reduce concerns about water levels being too high in the AHHG but cause pumping problems for wells located up slope from the AHHG. High storage conditions have the opposite effect. Water agencies in the Basin Area have generally agreed on an approach whereby water levels in the forebay areas should be stabilized at acceptable elevations by management of recharge of local and imported water while water levels in the AHHG should be controlled to acceptable elevations by pumping, including, when necessary, pumping in excess of local water supply needs. The proposed project would help to implement that approach.

Groundwater Recharge

"Recorded recharge of natural runoff in the San Bernardino Groundwater Basin Area has been as high as 373,000 ac-ft per year (1969). The estimated average annual recharge of the Basin Area by water from local sources is about 165,000 acre-feet per year."[5] In addition to recharge of natural runoff and other local sources, the Basin Area receives recharge of imported State Water

[2] San Bernardino-San Gorgonio Water Resources Management Investigation. CA DWR December 1986. (As referenced in the 2005 Program EIR.)
[3] San Bernardino Valley Municipal Water District. Regional Water Facilities Master Plan, Final Draft. Reference Documents. Prepared by Camp Dresser & McKee. August 15, 1995. (As referenced in the 2005 Program EIR.)
[4] San Bernardino Valley Municipal Water District groundwater records provided by Bob Tincher. 2000. (As referenced in the 2005 Program EIR.)
[5] Bulletin No. 104-5: Meeting Water Demands in the Bunker Hill-San Timoteo Area. CA DWR December 1970. (As referenced in the 2005 PEIR, pg II-5-6.)

Project water. The San Bernardino Valley Municipal Water District and various cooperating entities have the ability to recharge the Basin Area through water spreading at various locations in the project area. Historically the basin has been directly recharged with up to 32,426 ac-ft per year[6] of State Water Project water.

Groundwater Extraction

The Basin Area serves as the primary source of water supply in the San Bernardino Valley. As summarized on page 57 of the Annual Report of the Western-San Bernardino Watermaster for Calendar Year 2007, total groundwater extraction in the entire basin averaged 248,120 acre feet per year for the 5-year period between 2002 and 2006. Wells within the project area are numerous and widely dispersed.

Production of groundwater from the Basin Area as well as recharge with imported water have been regulated since 1969 pursuant to a court judgment that was entered in the case of *Western Municipal Water District of Riverside County, et al., vs. East San Bernardino County Water District, et al*., Riverside County Superior Court No. 78426 (Western Judgment). As a group, the plaintiffs named in the Western Judgment pumped an average of 63,660 acre-feet per year and all of the water users other than plaintiffs pumped an average of 184,460 acre-feet per year. (WSBWM a). The Western Judgment (and stipulated judgments in general) require the maintenance of a safe yield from the basin. As stated above, water agencies in the Basin Area have generally agreed on an approach that is implemented under the Western Judgment whereby water levels in the forebay areas should be stabilized at acceptable elevations by management of recharge of local and imported water while water levels in the AHHG are controlled to acceptable elevations by pumping, including, when necessary, pumping in excess of local water supply needs. The proposed project would help to implement that approach.

Subsidence

Ground subsidence is a process characterized by downward displacement of surface material caused by natural phenomena such as removal of underground fluids (oil or water), natural consolidation, or dissolution of underground minerals. It may also be caused by phenomena such as settlement of underground mines. Subsidence can range from small or local collapse to broad regional lowering of the earth's surface. Susceptible areas are predominantly valleys filled with unconsolidated relatively fine-grained sediments including sand, silty sand and clayey silt. Organic-rich layers may also be present. While subsidence may occur throughout a susceptible valley, displacement and fissures typically occur at or near the valley margins. Fissure location often corresponds to a subsurface shallowing of the alluvium-bedrock contact or other differences in the subsurface conditions. Fissures may also occur along other existing planes of weakness such as faults.

Land subsidence as a result of groundwater or other subsurface fluid withdrawal, has been recognized in many parts of California. In all cases, the measured subsidence is a function of excessive lowering of groundwater levels in areas where a significant portion of the subsurface

[6] San Bernardino-San Gorgonio Water Resources Management Investigation. CA DWR December 1986. (As referenced in the 2005 PEIR.)

consists of very fine-grained sediments (i.e., clay). In many cases, subsidence can be correlated with areas that historically were flowing artesian (i.e. the groundwater level was at or above the land surface) (2010 Geoscience).

Land subsidence due to declining groundwater levels has historically been reported in the San Bernardino Basin Area (Basin Area). These reports show that there was an average annual subsidence ranging from 0.015 ft/yr to 0.04 ft/yr during the period from 1944 to 1956. During the period from 1944 to 1969, at least one foot of subsidence had occurred in the Pressure Zone near the Raub well field and immediately north of Loma Linda between the San Jacinto and Loma Linda faults (2010 Geoscience).

Chino Groundwater Basin

The RCF Realignment Alternatives will also provide access to/from the Chino Groundwater Basin ("Chino Basin") in San Bernardino/Riverside counties via connections to Jurupa Community Services District facilities.

Characteristics of the Chino Groundwater Basin

The Chino Groundwater Basin (Chino Basin) consists of about 235 square miles of the upper Santa Ana River watershed. **Figure 4.6-3, Chino Basin Boundaries and OBMP Management Zones,** illustrates the boundary of the Chino Basin as it is legally defined in the 1978 stipulated Judgment in the case of *Chino Basin Municipal Water District vs. the City of Chino et* al. (Chino Basin Judgment). The purpose of the Chino Basin Judgment is to establish and maintain a safe yield for the Chino Basin. **Figure 4.6-3** also shows the hydrologic boundary of the basin, which is slightly different from the adjudicated boundary. The Chino Basin is an alluvial valley that is relatively flat from east to west and slopes from the north to the south at a one to two percent grade. Valley elevation ranges from about 2,000 feet in the foothills to about 500 feet near Prado Dam. The Chino Basin is bounded:

- on the north by the San Gabriel Mountains and the Cucamonga Basin;
- on the east by the Rialto-Colton Basin, Jurupa Hills, and the Pedley Hills;
- on the south by the La Sierra area and the Temescal basin; and
- on the west by the Chino Hills, Puente Hills, and the Pomona and Claremont Basins.

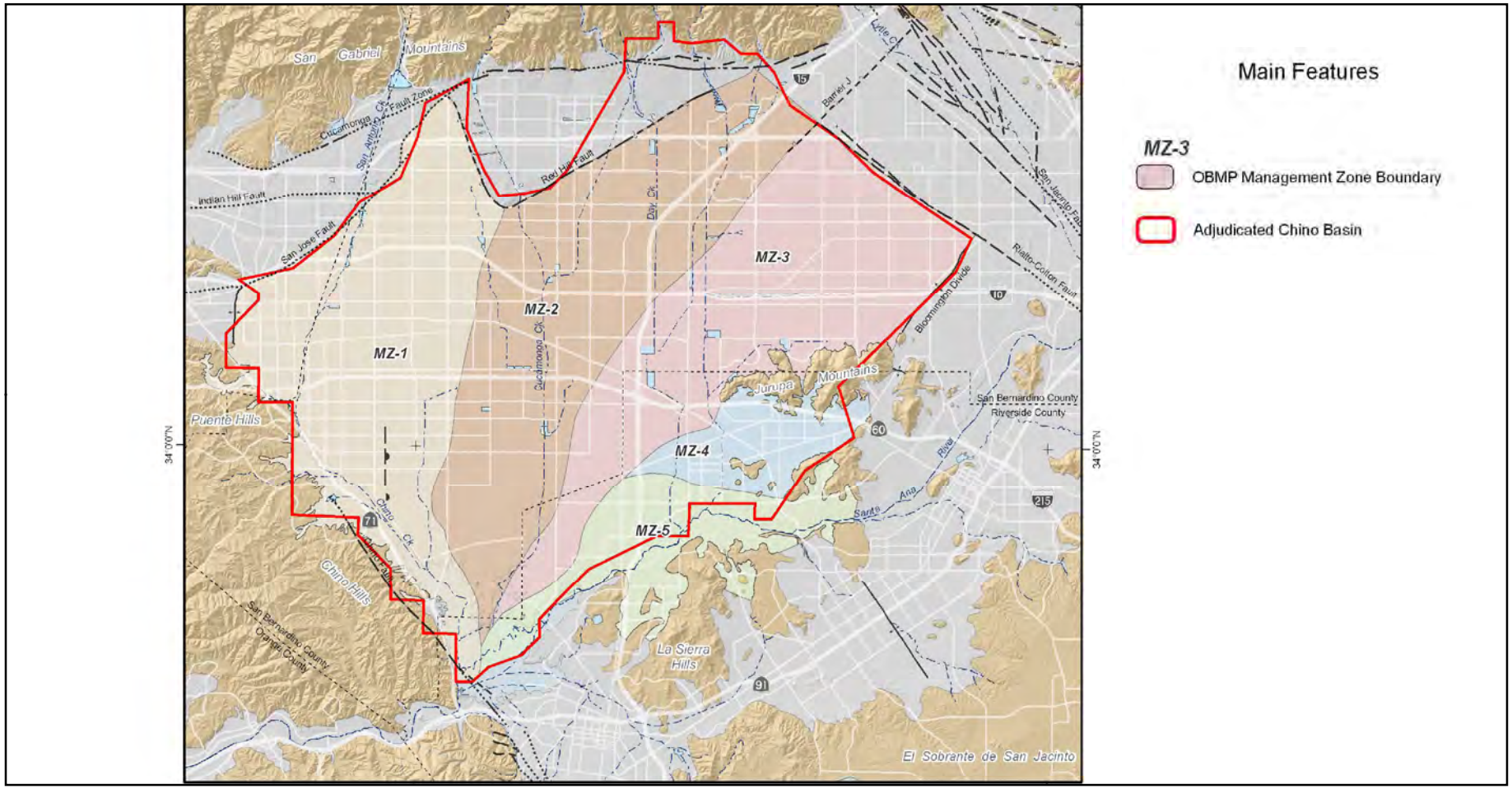
The Chino Basin is one of the largest groundwater basins in southern California with about 5,000,000 acre-feet of water in storage and an unused storage capacity of about 1,000,000 acre-feet. Cities and other water supply entities produce groundwater for all or part of their municipal and industrial supplies and about 300 to 400 agricultural users produce groundwater from the basin. The Chino Basin is an integral part of the regional and statewide water supply system. Prior to 1978, the basin was in overdraft. After 1978, the basin has been operated as described in the Chino Basin Judgment through the implementation of the *Optimum Basin Management Program*. (OBMP, p. 2-1)

Historic Groundwater Levels

While considered one basin from geologic and legal perspectives, the Chino Basin has been divided into five management zones. Each management zone has a unique hydrology, and water resource management activities that occur in one management zone have limited impact on the other management zones.

- **Management Zone 1 (MZ-1).** Prior to the Chino Basin Judgment, the northern half of MZ-1 experienced overdraft, as water levels declined by as much as 200 feet from 1945 to 1977. After the Chino Basin Judgment, water levels recovered, especially during the 1978 to 1983 wet period. During the ten-year period of 1992 to 2002, water levels in MZ-1 were relatively stable with a slight decline in the dry years (1998 to 2002). During the same ten-year period, water levels in the deep aquifer-system within the southern half of MZ-1 fluctuated seasonally by up to 250 feet, but stayed relatively stable within this range over the ten-year period.
- **Management Zone 2 (MZ-2).** Prior to the Chino Basin Judgment, MZ-2 was in overdraft with water levels in the central portion of MZ-2 showing a decline of as much as 130 feet during the period of 1930 to 1977 and water levels in the southern half of MZ-2 showing a decline of as much as 80 feet during the same period. Water levels showed little or no response to wet years until 1978. After the Chino Basin Judgment, water levels increased slightly in the central portion of MZ-2 (10 to 20 feet) until about 1990. This post-Chino Basin Judgment increase was probably due to the combination of 1978 to 1983 wet period, reduction in overdraft following the implementation of the Chino Basin Judgment, the start of artificial replenishment with imported water in the San Sevaine and Etiwanda basins, and the increased use of imported surface water. During the ten-year period of 1992 to 2002, water levels in the central portion declined slightly (10 to 20 feet), even during and after the 1993-1998 wet period. During the same ten-year period, water levels in the southern half of MZ-2 declined by about 20 feet, with most of this decline occurring since 1999.
- **Management Zone 3.** Prior to the Chino Basin Judgment, the eastern portion of MZ-3 was in overdraft as water levels declined by as much as 70 feet during the period of 1930 to 1977. During the same period, the central portion of MZ-3 was in overdraft as water levels declined by as much as 75 feet and the southern portion of MZ-3 was in overdraft as water levels declined by about 20 feet. Water levels showed little or no response to wet years. After the Chino Basin Judgment, water levels at these wells increased slightly (20 to 30 feet) until about 1990. This post-Chino Basin Judgment increase was probably due to the combination of the 1978 to 1983 wet period, the reduction in overdraft following the implementation of the Chino Basin Judgment, and the increased use of imported surface water. During the ten-year period of 1992 to 2002, water levels in the eastern portion of MZ-3 were relatively stable but declined slightly (10 to 20 feet) since about 1998. During the same period, water levels in the central portion remained relatively stable, but water levels in the southern portion of MZ-3 declined by about 10-30 feet, with most of this decline occurring since 1999.

- **Management Zone 4.** Prior to the Chino Basin Judgment, MZ-4 was in slight overdraft as water levels declined by about 20 feet during the period of 1945 to 1977. After the Chino Basin Judgment, water levels at these wells increased slightly (~10 feet) and have remained relatively stable and have continued to follow precipitation trends closely.
- **Management Zone 5.** Prior to the Chino Basin Judgment, MZ-5 was in slight overdraft as water levels declined in some wells by about 25 feet during the period of 1953 to 1977. After the Chino Basin Judgment, water levels at these wells recovered to their 1953 levels during the 1978 to 1983 wet period. After the Chino Basin Judgment, water levels were relatively stable but have declined slightly (by 10 feet or less) since 2000. (DYYP, pp. 2-11 through 2-13)



Source: Chino Basin Dry Yield Program Expansion, 2008.

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Figure 4.6-3
Chino Basin Boundaries and OBMP Management Zones

Groundwater Recharge

The sufficiency of the Chino Basin includes the availability of recharge water and recharge capacity for purposes of maintaining the safe yield of the Chino Basin consistent with the OBMP and Chino Basin Judgment. Recharge water includes imported water supplied by the Metropolitan Water District of Southern California (MWD), recycled water and stormwater. The OBMP addresses the use of recharge water, including projections with respect to availability and recharge capacity. See the discussion section below entitled, "State Water Project."

Since 2000, total stormwater recharge in the Chino Basin has averaged approximately 3,700 acre-feet per year; with total storm water recharge during 2004 – 05 being approximately 1,400 acre-feet and during 2005 – 06 being approximately13,000 acre-feet. State Water Project (SWP) water for artificial recharge is currently available to the region from MWD. MWD delivers SWP water into the Chino Basin from the Rialto Pipeline, flowing from east to west across the northern half of the Chino Basin. During fiscal years 2004 – 05 and 2005 – 06, total SWP recharge in the Chino Basin was approximately 12,300 and 34,600 acre-feet, respectively. The aggregate average SWP water recharge that has occurred since the OBMP was implemented is approximately 12,300 acre-feet per year. During fiscal years 2004-05 and 2005-06, total recycled water recharge in the Chino Basin was approximately 160 and 1,300 acre-feet, respectively. The aggregate average recycled water recharge that has occurred since the OBMP was implemented is approximately 440 acre-feet per year. The total supplemental water recharge, consisting of imported and recycled waters was approximately 12,500 acre-feet during fiscal year 2004 – 05 and 36,000 acre-feet during fiscal year 2005 – 06. The aggregate average supplemental water recharge that has occurred since the OBMP was implemented is approximately 12,800 acre-feet per year (OBMP 2006 State of the Basin Report, pp. 3-6, 3-7.)

State Water Project

Subsequent to the completion of the 2005 PEIR, events have transpired that have the potential to affect the availability and reliability of imported State Water Project (SWP) supplies from the Metropolitan Water District of Southern California (MWD) which may be used to recharge the Basin Area as part of the RCF project. As discussed below, such factors include potential reductions in exports from the Sacramento-San Joaquin Delta (Delta), dry hydrologic conditions, potential regulatory and emergency constraints on the use of water conveyance facilities, water quality issues, and short and long term climatic change.

New U.S. Fish and Wildlife Service (FWS) Biological Opinion (B.O.) for Delta Smelt and Related Litigation Matters

The delta smelt is a small fish that resides in the Delta and is protected under the state and federal Endangered Species Acts. In August 2007, in the case of *NRDC v. Kempthorne*, the U.S. District Court for the Eastern District of California invalidated the 2005 B.O. prepared by FWS to examine the effects of SWP and Central Valley Project (CVP) operations on the delta smelt, and ordered FWS to prepare a new B.O. (*Natural Resources Defense Council v. Kempthorne, et al.*, USDC Case No. 05-CV-1207-OWW.). On December 14, 2007, the District Court issued an

Interim Remedial Order and Findings of Fact and Conclusions of Law requiring the SWP and CVP to operate according to certain specified criteria (Interim Remedies) until the new B.O. was prepared. The operating restrictions were tied to various factors occurring in the Delta, such as prevailing hydrologic conditions and migratory and reproductive status of the delta smelt. On December 15, 2008, the FWS issued a new B.O. According to information published the California Department of Water Resources (DWR), which owns and operates the SWP, the new B.O. has the potential to reduce SWP deliveries from the Delta in nearly the same manner as the Interim Remedies. DWR has estimated that under average water year conditions, the most likely result of the new B.O. is a one percent increase in the amount of available SWP supplies in comparison to the Interim Remedies, although a worst-case scenario could result in a 13 percent decrease in available supplies. Under dry water year conditions, DWR states the most likely result of the new B.O. is the same type of potential restrictions as set forth in the Interim Remedies, although restrictions could possibly increase by 21 percent under a worst-case scenario. As with the Interim Remedies, potential water supply restrictions under the new B.O. are dependent on various factors that cannot be predicted with a high degree of certainty, including hydrologic conditions, migratory and reproductive patterns of delta smelt, and other factors affecting delta smelt abundance in the Delta. Due to a number of alleged scientific and other deficiencies in the new B.O., water agencies holding contracts to receive SWP supplies from DWR filed complaints in the Federal District Court for the Eastern District of California challenging the B.O. (*The Consolidated Delta Smelt Cases*.) Because delta smelt are also protected under state law, the California Department of Fish and Game issued a "consistency determination" which essentially provides state authorization for SWP and CVP operations to the extent those operations occur pursuant to the FWS B.O. This regulatory decision has been challenged in state court. These litigation matters challenging the validity of the new B.O. give rise to the possibility that SWP delivery reductions as set forth by the Interim Remedies could be put back in place pending final legal resolution of the new B.O. In light of these various factors, the degree to which SWP deliveries may be reduced under the new B.O. for delta smelt remains difficult to forecast, although DWR and other agencies have estimated potential delivery reductions as discussed below in DWR's Draft 2009 SWP Delivery Reliability Report.

California Department of Fish and Game (CDFG) Incidental Take Permit for Longfin Smelt and Related Litigation Matters

Another factor having the potential to affect the availability and reliability of SWP supplies is regulatory action related to the longfin smelt, a small pelagic fish species that resides in the Delta and other areas along the West Coast and which is protected under the California Endangered Species Act. On February 29, 2009, CDFG issued Incidental Take Permit No. 2081-2009-001-03 (Permit) to DWR which imposes terms and conditions on the ongoing and long-term operation of SWP facilities in the Delta for the protection of longfin smelt. The operating restrictions under the Permit are based in large part on the restrictions imposed on the SWP by the new FWS B.O. for delta smelt (see above). As with the FWS B.O., potential water supply restrictions under the Permit are dependent on various factors that cannot be predicted with a high degree of certainty, including hydrologic conditions in the Delta region, migratory and reproductive patterns of longfin smelt, and other factors affecting longfin smelt abundance in the Delta. DWR has not indicated whether any particular reductions in SWP exports are likely to result from the Permit. Due to a number of alleged scientific and other deficiencies in the

Permit, an organization of water agencies holding contracts to receive SWP supplies from DWR has challenged the Permit in Sacramento County Superior Court. (*State Water Contractors v. California Dept. of Fish and Game, et al.*, Sac. Sup. Ct. Case No. 34-2009-80000203.) That case has brought CDFG's ability to enforce the Permit into question. In light of the foregoing factors, potential reductions in SWP supplies resulting from the Permit for longfin smelt remains difficult to forecast at this time.

New National Marine Fisheries Service (NMFS) Biological Opinion (B.O.) Salmon/Anadromous Species and Related Litigation Matters

Additional factors having the potential to affect the availability and reliability of SWP supplies are new regulatory restrictions and related litigation concerning anadromous fish species in the Delta, including, winter and spring-run salmon, steelhead trout and green sturgeon that are protected by the Endangered Species Act. In April 2008, in the case of *PCFFA v. Gutierrez*, the U.S. District Court for the Eastern District of California invalidated the 2004 B.O. prepared by NMFS to examine the effects of SWP and CVP operations on protected anadromous species in the Delta, and ordered NMFS to prepare a new B.O. (*Pacific Coast Federation of Fishermen's Associations, et al. v. Gutierrez, et al.*, Case No. 1:06-CV-00245-OWW-GSA.) The court determined that additional water supply restrictions to protect anadromous species were not required beyond those that were already required under the Interim Remedies for the protection of delta smelt (see above). On June 4, 2009, NMFS issued a new B.O. regarding the effects of SWP and CVP operations on protected salmon, steelhead, green sturgeon, and resident killer whales. According to information published by DWR, NMFS has calculated that the B.O. has the potential to reduce SWP deliveries from the Delta by 7 percent in addition to the potential reductions under the delta smelt B.O. (above), while DWR estimated that average annual reductions to SWP deliveries could be closer to 10 percent beyond the restrictions imposed under the FWS B.O. for delta smelt. As with the FWS B.O. for delta smelt, potential water supply restrictions under the NMFS B.O. are dependent on various factors that cannot be predicted with a high degree of certainty, including hydrologic conditions in the Delta region, migratory and reproductive patterns of protected anadromous fish, and other factors affecting the abundance of those species in the Delta. In June 2009, legal challenges were filed against the NMFS B.O. in the United States District Court for the Eastern District of California alleging, among other things, that the water supply restrictions set forth in the B.O. are in violation of the federal Endangered Species, the federal Administrative Procedures Act, and other laws. (*The Consolidated Salmonid Cases*.) Because the anadromous species are also protected under state law, the California Department of Fish and Game issued a "consistency determination" which essentially provides state authorization for SWP and CVP operations to the extent those operations occur pursuant to the NMFS B.O. This regulatory decision has been challenged in state court. These litigation matters call into question whether the water supply restrictions in the B.O. can be imposed against the SWP. For these and other reasons, the degree to which SWP deliveries may be reduced under the new NMFS B.O. remains difficult to forecast, although DWR and other agencies have estimated potential delivery reductions as discussed below in DWR's Draft 2009 SWP Delivery Reliability Report.

California Drought Conditions

In February 2009, the Governor of the State of California declared a state of emergency due to prevailing statewide drought conditions, evidenced by low reservoir storage and estimated snowpack water content at that time. Since then, statewide hydrologic conditions have improved, although the state of emergency declaration has not been lifted. In March 2010, DWR announced that both manual and electronic readings indicate that water content in California's mountain snowpack was 107 percent of normal and stated that the "readings boost our hope that we will be able to increase the State Water Project allocation by this spring to deliver more water to our cities and farms." Among these readings, DWR reported that electronic sensor readings showed northern Sierra snow water equivalents at 126 percent of normal for that date, central Sierra at 93 percent, and southern Sierra at 109 percent.[7] As of June 30, 2010, California's hydrologic conditions were as follows: statewide precipitation was 110 percent of average; statewide runoff was 90 percent of average to date; and key historical average statewide reservoir storage was at 100 percent, with two of the state's largest reservoirs, Lake Shasta (CVP) and Lake Oroville (SWP), respectively storing 115 percent and 92 percent of their historical averages.[8]

Draft 2009 SWP Delivery Reliability Report

In January 2010, DWR released its Draft SWP Delivery Reliability Report (DWR Report). According to the DWR Report, the long-term average delivery of contractual amounts of SWP Table A supply is projected to be 60 percent under current (2009) and future (2029) conditions. (DWR Report, pp. 32, 39.) Within that long-term average, SWP Table A deliveries can range from 7 percent (single dry year) to 68 percent (single wet year) of contractual amounts under current conditions, and from 11 percent (single dry year) to 97 percent (single wet year) of contractual amounts under future conditions. (DWR Report, pp. 32-33, 40.) Under future conditions, contractual amounts during multiple-dry year periods are projected to range from 32 to 38 percent. (DWR Report, p. 40.) The analyses provided in the DWR Reliability Report are based upon 82 years of historical records for rainfall, snowpack and runoff that have been adjusted to reflect the availability of water at the source, the ability to convey water from the source to the desired points of delivery, and the magnitude of demand for the water. (DWR Report, p. 7.) Of key importance, the studies, data and conclusions set forth in the DWR Report expressly assume and account for current facility and institutional limitations, including water quality, fishery protections, export curtailments and other requirements under State Board Water Rights Decision 1641 and the new FWS and NMFS Biological Opinions (see above), as well as potential effects of Delta levee failures and other seismic or flood events. (See, e.g., DWR Report, pp. 7-12, 17-23, 25-28, Appendices A, A-1, A-2, B.)

In addition, the long-term SWP delivery reliability analyses in the DWR Report incorporate assumptions to account for potential supply shortfalls related to global climate change factors. (Ibid.) Global climate change is another factor that could have potential impacts to the availability and reliability of imported water supplies. Long-term climatic changes resulting from increases in air temperature may lead to changes in the timing, amount and form of precipitation

[7] http://www.water.ca.gov/news/newsreleases/2010/030310snow.pdf
[8] http://cdec.water.ca.gov/cgi-progs/reports/EXECSUM

- rain or snow, changes in runoff timing and volume, effects of sea level rise on Delta water quality, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. The DWR Report accounts for potential effects of future climate change on SWP deliveries using 12 future climate projections at mid-century and end-of-century analysis periods. (See, e.g., DWR Report, pp. 8-9, Appendices A-B.) Moreover, the DWR Report assumes that these regulatory and institutional restrictions will remain in place over the next 20-year period and that no actions to improve the Delta will occur. Thus, the DWR Report represents an ultra-conservative projection of SWP delivery reliability, particularly in light of the fact that many actions and processes are underway pursuant to the Bay Delta Conservation Plan, Delta Vision, and new state laws to improve Delta governance and conveyance, and improve the availability of reliability of SWP supplies.

Development of Delta Plan and Delta Flow Criteria Pursuant to New State Laws

In November 2009, the California Legislature enacted SBX7 1 as one of several bills passed as part of a State comprehensive water package related to water supply reliability, ecosystem health, and the Delta. SBX7 1 became effective on February 3, 2010 and adds Division 35 to the California Water Code (commencing with Section 85300). This division is referred to as the Sacramento-San Joaquin Delta Reform Act of 2009. Among other things, the Act creates the Delta Stewardship Council (Council) as an independent agency of the state. (Wat. Code § 85200.) SBX7 1 also amends the California Public Resources Code to specify changes to the Delta Protection Commission and create the Delta Conservancy. (Pub. Res. Code §§ 29702-29780.) The Act directs the Council to develop a comprehensive management plan for the Delta by January 1, 2012 (the Delta Plan) and to first develop an Interim Plan that includes recommendations for early actions, projects, and programs for the Delta. (See generally, Second Draft Interim Plan, Prepared for Consideration by the Delta Stewardship Council, p. 1.) In addition to these and other requirements, SBX7 1 requires the State Water Resources Control Board (State Board) to develop flow criteria for the Delta ecosystem necessary to protect public trust resources, including fish, wildlife, recreation and scenic enjoyment. Beginning in March 2010, the State Board has undertaken a public process to inform its development of flow criteria for the Delta. Potential reductions in SWP supplies, if any, resulting from processes under SBX7 1, or the degree to which those processes may relate to or be coordinated with the regulatory processes being conducted by FWS and NMFS (see above), cannot be determined with any reasonable degree of certainty at this time.

4.6.2 Summary of 2005 Certified Program EIR for Riverside-Corona Feeder Project

Design Considerations/Avoidance

The 2005 Project Alignment did not identify specific locations for wells or recharge spreading; thus allowing for flexibility in operating scenarios to best limit adverse impacts to groundwater. Several well fields (located primarily within the AHHG) and possible spreading grounds were modeled to help understand the relationships of the project to the Basin Area management system.

Potential Significant Impacts/Environmental Consequences

Groundwater Levels were addressed in Section II-5 (pp. II-5-1 through II-5-9) of the 2005 Certified Program EIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment), which are hereby incorporated by reference. The following discussion is a summary of the Groundwater Levels section of the 2005 PEIR:

Threshold: *(1) Substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there is a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells drops to a level which does not support existing land uses or planned uses for which permits have been granted) or (2) causes undesirably high groundwater levels in the area of historically high groundwater (AHHG).*

The San Bernardino Groundwater Basin serves as the primary source of water supply in the San Bernardino Valley. Total groundwater pumpage in the entire basin averaged 262,082 acre-feet per year between 1996 and 2000. As a group, the plaintiffs named in the Western Judgment pumped an average of 69,752 acre feet per year and all of the water users other than plaintiffs pumped an average of 192,330 acre feet per year[9].

The 2005 Project Alignment includes additional replenishment of State Water Project water in amounts which are substantially less than the historical range of storage fluctuations in the Basin Area. Annual rates of recharge at any time by the proposed project will be limited by State Water Project water availability as well as coordinated efforts to manage the Basin. The replenished water would be extracted by wells located in or near the AHHG at a rate of up to 40,000 ac-ft per year, which is about 15% of the current rates of extraction in the Basin, with actual rates depending upon the need for the water as well as upon Basin Area conditions.

The 2005 Project Alignment is in accordance with the Western Judgment (see page 4.6-25) which provides that extractions may be made in addition to those determined by the Judgment, pursuant to agreement between SBVMWD and WMWD. The Judgment further provides that nothing therein shall preclude SBVMWD, WMWD or any other party from exercising such rights as they may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of underground storage capacity of the Basin Area shall not interfere with any replenishment program of the Basin Area. The Watermaster is charged with the responsibility of administering the Judgment, and all subsequent orders of the Court made pursuant to the Court's continuing jurisdiction. The Watermaster is required to file with the Court annual reports which include, among other information, summaries of extractions by all parties pumping water from the Basin Area, groundwater level measurements, and an accounting of all credits and obligations in the groundwater basin. No significant effects related from the 2005 Project Alignment to groundwater levels are anticipated.

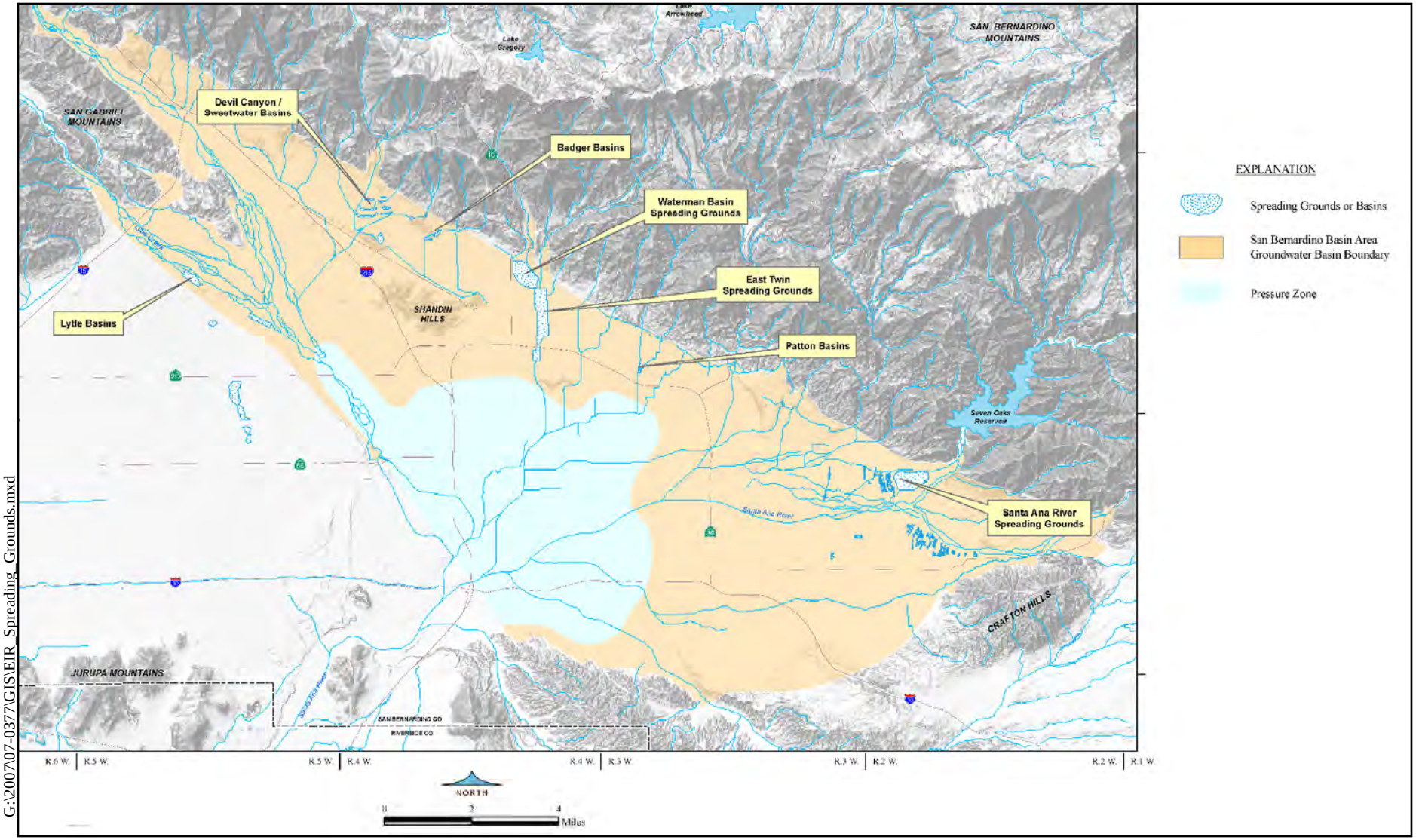
Western Municipal Water District (WMWD) prepared a hydrologic analysis that was added as Appendix F of the 2005 PEIR. The same groundwater flow (MODFLOW), particle tracking

[9] Western-San Bernardino Watermaster Report. 2001 (As referenced in the 2005 PEIR.)

(MODPATH), and solute transport (MT3DMS) models that were used for the analysis in the Muni/Western Santa Ana River (SAR) Water Right Applications DEIR (Water Right EIR) were used to perform these analyses for the 2005 Project Alignment. All modeling assumptions including extraction schedule and new well locations, and replenishment schedules were included in Appendix F of the 2005 PEIR. Generally, modeling was based on historic hydrologic data projected from 2001 through 2039, the same as those for the Water Right DEIR. Extraction and replenishment assumptions are based on a water availability forecast model developed by Metropolitan Water District (MWD) that includes implementation of the MWD Water Surplus and Drought Management Plan (WSDM). Appendix F, Table 1 of the 2005 PEIR, shows the assumed 2005 Project Alignment extraction and replenishment schedule for the Scenario 1 modeling analysis. The schedule was based on the WSDM predictions for change in storage in Diamond Valley Lake, change in storage for State Water project program, and MWD's interruption of replenishment services. Other factors included surplus remaining after WSDM action is taken and hydrology in southern California. This represented an operating scenario for the 2005 Project Alignment that maximized the conjunctive use potential of the project based on a repeat of hydrology for the period 1961 to 2000.

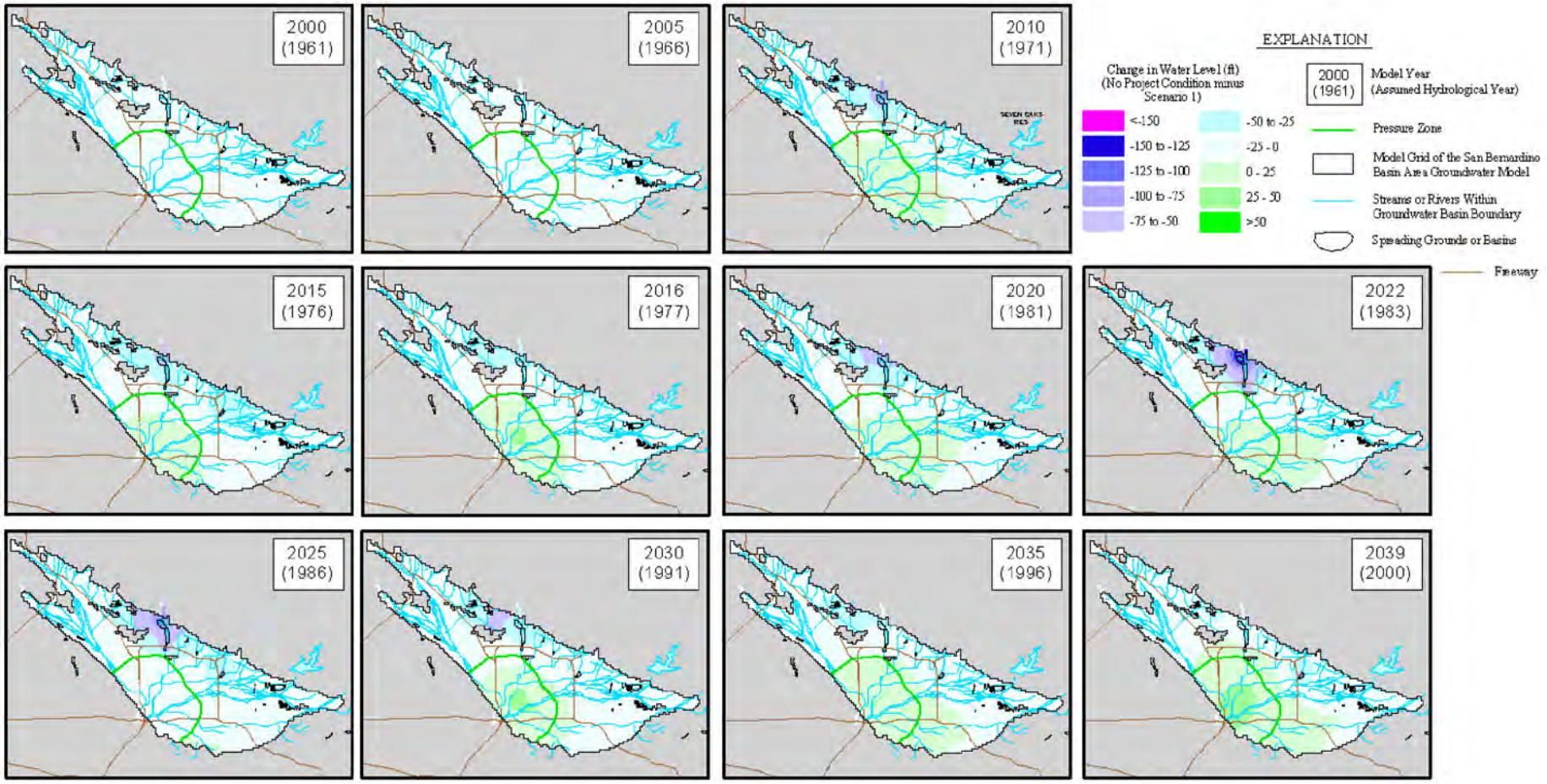
With respect to the groundwater flow model results, the direction of flow and the fluctuations in water level over time were generally the same for this operating scenario as for the No Project condition. However, index well hydrographs (see **Figure 4.6-4, Locations of Spreading Grounds for Artificial Recharge**) show that under the operating scenario analyzed for the 2005 Project Alignment, water levels in the forebay or recharge area tracked generally above the No Project conditions, and levels in the Pressure Zone or area of Historic High Groundwater (AHHG) tracked generally below No Project.

Water levels were generally higher in the forebay as a result of the related recharge of State Water Project water. The recharge creates mounding and the associated increase in levels is highest in the upper layer at the spreading basins. The maximum increase in level occurs in the Waterman spreading area in 2022 in the amount of over 150 feet. However by 2025 the increased difference in levels was about 100 feet and by 2030 the increase was projected to be less than 50 feet. Increase in level or mounding in the lower layer is much less significant (see **Figure 4.6-5, 2005 PEIR – Differences in Groundwater Level Between No Project Condition and Scenario 1 – 2000 to 2039** and **Figure 4.6-6, 2005 PEIR – Differences in Groundwater Level Between No Project Condition and Scenario 2 – 2000 to 2039**).



Source: Geoscience, 2009

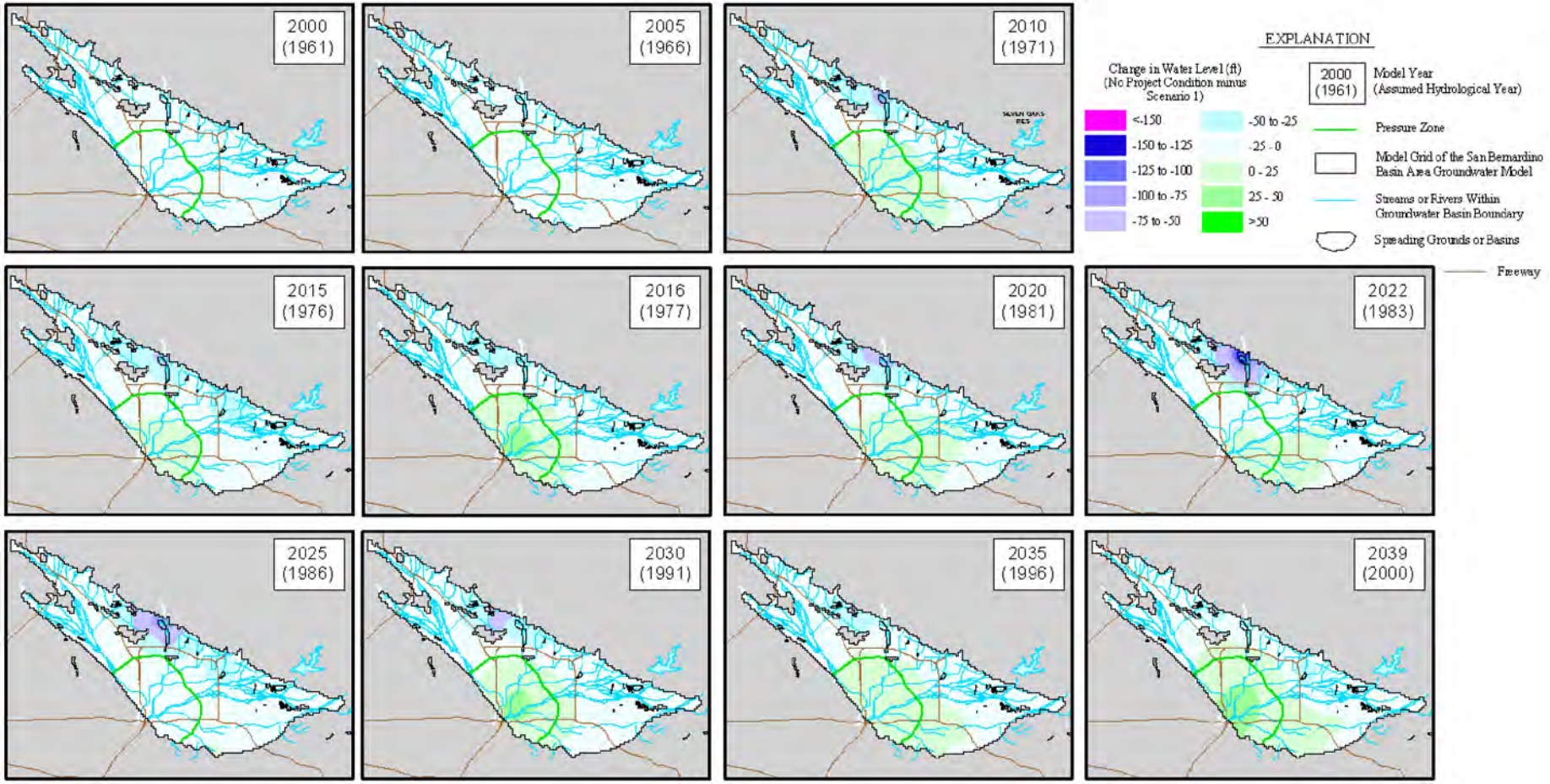
Figure 4.6-4
Locations of Spreading Grounds for Artificial Recharge



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Source: 2005 PEIR, Appendix F, Figure 6

Figure 4.6-5
2005 PEIR - Differences in Groundwater Level Between No Project Condition and Scenario 1 - 2000 to 2039



G:\2007\07-0377\GIS\EIR_2005_PEIR_No_Project-Scenario_2.mxd

Source: 2005 PEIR, Appendix F, Figure 7

Figure 4.6-6
2005 PEIR - Differences in Groundwater Level Between No Project Condition and Scenario 2 - 2000 to 2039

Increased water levels in the forebay reduce the cost of pumping for forebay producers. On the average, water levels in the forebay increase about 9 feet during the 39-year model simulation period.

Water levels are generally lower in the Pressure Zone as a result of pumping under the Project operating scenario analyzed. Areas within the Pressure Zone where depth to water is less than 50 feet below ground surface were delineated using the model. These areas were delineated because of the higher potential for liquefaction during an earthquake.

Pumping associated with the 2005 Project Alignment lowers water levels in the Pressure Zone and therefore decreases the area potentially subject to liquefaction. In the Pressure Zone where liquefaction potential is high during many of the forecast years under No Project conditions, the area subject to such impact is reduced by additional pumping.

The cumulative total area of potential liquefaction during the period 2001 – 2039 under No Project conditions is approximately 32,000 acres. With the 2005 Project Alignment operating as defined in this analysis, the potential liquefaction area is reduced to about 25,000 acres.

Decreasing the potential for earthquake damage due to liquefaction by lowering the water table in the Pressure Zone increases the energy required to pump the water. There are currently two major areas of production in the Pressure Zone. One is centrally located along Warm Creek and is referred to herein as the Antil Area. The other is located along the Santa Ana River near the southwesterly boundary of the basin and is referred to as the South San Bernardino Area.

Projected water level hydrographs for wells in the Antil Area and wells in the South San Bernardino Area are shown on in 2005 PEIR, Appendix F on Figures 8(l) and 8(ai) through 8(al). The hydrographs indicate that the average increase in depth to water in wells located in the Pressure Zone is approximately 9 feet during the 39-year model simulation period.

At the time the 2005 PEIR was prepared, no specific depth of change in water levels was identified as significant. Higher water levels in the forebay and lower water levels in the Antil Area of approximately 9 feet were not considered significant because they contributed to the reduced area of liquefaction potential. Subsequently, as described below, WMWD, SBVMWD and the City of Riverside entered into an agreement relating to the diversion of water from the Santa Ana River system (Riverside Agreement). This agreement specifies that a reduction in average static groundwater levels at one or more index wells by more than 10 feet could be considered significant. For purposes of evaluating the current project, this is the threshold of significance. (See page 4.6-27.) When applied to the changes seen in the 2005 modeling, a less than significant finding is still appropriate.

The project is in accord with the Western Judgment which provides that extractions may be made in addition to those determined by the Western Judgment, pursuant to agreement between SBVMWD and WMWD. The Western Judgment further provides that nothing therein shall preclude SBVMWD, WMWD or any other party from exercising such rights as they may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of underground storage capacity of the Basin Area shall not interfere with any

replenishment program of the Basin Area. The Watermaster is charged with the responsibility of administering the Western Judgment, and all subsequent orders of the Court made pursuant to the Court's continuing jurisdiction. The Watermaster is required to file with the Court annual reports which include, among other information, summaries of extractions by all parties pumping water from the Basin Area, groundwater level measurements, and an accounting of all credits and obligations in the groundwater basin. Because of this, the Basin Area sustainability is insured over the long-term, therefore, no significant effects related to groundwater levels are anticipated.

In addition to realizing the primary purposes of the proposed project which are to increase reliability for WMWD customers, the combined recharge and extraction operations associated with the project could help stabilize water levels in the upper part of the Basin Area, where recharge occurs, and help prevent undesirably high water levels in the AHHG. The proposed project will not result in significant adverse impacts to groundwater levels. No mitigation measures will be necessary.

Although no significant adverse impacts were identified related to groundwater levels in the 2005 PEIR prepared for the 2005 Riverside-Corona Feeder Alignment, potential impacts were identified related to groundwater quality (see Section 4.7). Since mitigation measures were recommended to address groundwater quality impacts, mitigation measures **MM GWL 1** and **MM GWL 2** were included so that modeling and operational plans required to address groundwater quality would consider groundwater levels also. This will ensure that mitigation required to alleviate potential groundwater quality impacts does not create undesirable impacts to groundwater levels.

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were recommended in the Draft 2005 PEIR to reduce potentially significant impacts related to Groundwater Levels:

MM GWL 1: Prepare operating strategies to be tested using the most current versions of the groundwater flow and groundwater quality model(s) available at the time. An operating plan consistent with any overall management plan adopted for the Basin Area shall be developed prior to commencing replenishment activities for the project that defines parameters of replenishment and extraction based on groundwater model(s) as evaluative tool(s).

MM GWL 2: As described in MM GWL 1, existing groundwater flow and groundwater quality model(s) shall be used to predict the effects of project operations pursuant to the operating plan developed as a requirement of MM GWL 1. If the model(s) suggest that the replenishment and pumping regime of the proposed project operation would result in significant impacts, the project operation shall be modified to reduce impacts or appropriate mitigation measures shall be developed as part of a subsequent CEQA compliance document (i.e., tiered negative declaration, EIR addendum, Supplemental EIR or Subsequent EIR).

Typical measures that could be implemented to maintain the safe yield of the basin include:

- Increased, decreased, or no replenishment

- Replenishment in an alternative location
- Increased, decreased or no extraction
- Extraction at targeted locations.

Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in MM GWL 1, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Thus, MM GWL 1 was accomplished and is no longer needed to mitigate potential impacts of the RCF realigned pipeline.

Additionally, WMWD has been participating in ongoing management efforts as part of a Basin Area Technical Advisory Committee (BTAC) which will assure that this project is included and managed to avoid adverse impacts to water levels in the Basin Area. See page 4.6-38. The ongoing monitoring and adaptive management recommended by MM GWL 2 is still necessary, but has been revised to include WMWD's involvement with the BTAC. See page 4.6-44 and 45 for the currently revised mitigation measure.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the 2005 Riverside-Corona Feeder Alignment found that impacts related to water levels would not be significant. No mitigation measures are necessary. However the mitigation measures required for potentially significant water quality impacts (outlined above) shall be implemented as operating actions associated with this project and will further ensure that potential impacts to groundwater levels (safe yield) from the proposed project would not be significant.

4.6.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The impacts and findings discussed in the 2005 PEIR related to groundwater levels are applicable to both the 2005 Project Alignment Alternative and the Realignment Alternative projects, as appropriate. The Realignment Alternative will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D, in the 2005 PEIR and includes the addition of connections to some other regional facilities not included in the original project. The analysis of groundwater levels contained within the 2005 PEIR does not specifically address the proposed realignment and additional facilities. However, the analysis conducted in this section of the SEIR/EIS addresses changed conditions since the 2005 PEIR was completed and evaluates an alternate well field location for the Riverside-Corona Feeder Project Central Feeder Connection in addition to the well field locations analyzed previously. Among all well fields, no more than 20 wells will be used for project operations with approximately 25 percent of the wells pumping at any one time.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Western Municipal Water District's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to groundwater levels may be considered potentially significant if the project would:

- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there is a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells drops to a level which does not support existing land uses or planned uses for which permits have been granted) or (2) causes undesirably high groundwater levels in the area of historically high groundwater (AHHG).
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in subsidence.

In addition, as described below, in 2007 WMWD, SBVMWD and the City of Riverside entered into the Riverside Agreement. This agreement defines a significant change in groundwater levels in the San Bernardino Basin Area that would warrant a correction in operations as a reduction in average static groundwater levels at one or more index wells greater than 10 feet. To be consistent, the first threshold above shall be considered a "substantial depletion" in the AHHG if a reduction in average groundwater levels of more than 10 feet results from the project.

The Chino Basin was not previously connected directly to the proposed RCF alignment therefore, no thresholds were specifically related to the Chino Basin in the 2005 PEIR.

Related Regulations

The 1969 Western Judgment

Production of groundwater from the Basin Area as well as recharge with imported water are regulated by a court judgment that was entered in 1969 in the case of Western Municipal Water District of Riverside County, et al., vs East San Bernardino County Water District, et al., Riverside County Superior Court No. 78426 (Western Judgment).

The Western Judgment, among other provisions, determines the rights of certain Plaintiffs to extract groundwater from an area described in the Judgment as the San Bernardino Basin Area (Basin Area). This area includes the groundwater basins in San Bernardino County that are above the Bunker Hill Dike in the Santa Ana River Watershed, but excludes the Yucaipa, San Timoteo, Oak Glen and Beaumont Basins. The plaintiffs holding such rights are the City of Riverside including those rights acquired as successor to the Riverside Water Company and The Gage Canal Company; the Riverside Highland Water Company; the Elsinore Valley Municipal Water District as successor to the rights of the Agua Mansa Water Company and the Meeks & Daley Water Company; and the Regents of the University of California (collectively "Plaintiffs").

The Western Judgment provides for a Watermaster, consisting of a committee composed of two persons appointed by the Court, one nominated by San Bernardino Valley Municipal Water District (SBVMWD) and one by Western Municipal Water District (WMWD). The Watermaster is charged with the responsibility of administering the Western Judgment, and all subsequent orders of the Court made pursuant to the Court's continuing jurisdiction. The Watermaster is required to file with the Court annual reports which include, among other information, summaries of extractions by all parties pumping water from the Basin Area, groundwater level measurements, and an accounting of all credits and obligations in the groundwater basin.

The Western Judgment provides that extractions may be made in addition to those determined by the Western Judgment, pursuant to agreement between SBVMWD and WMWD. The Western Judgment allowed extractions on an annual basis of 167,238 acre-feet by parties other than the plaintiffs and 64,862 acre-feet by the plaintiffs, for a total of 232,100 acre-feet. The Western Judgment further provides that nothing therein shall preclude SBVMWD, WMWD or any other party from exercising such rights as they may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of underground storage capacity of the Basin Area shall not interfere with any replenishment program of the Basin Area.

In addition to certain enumerated matters, the Western Judgment provides that the Court retains jurisdiction over other matters not specifically set forth which might occur in the future, and which would be of benefit to the parties in the utilization of groundwater within the Basin Area.

The Replenishment and Extraction Agreement

At the time the 2005 PEIR was certified and pursuant to the Western Judgment, WMWD and SBVMWD were proposing to enter into a Replenishment and Extraction Agreement (Appendix D of the 2005 PEIR) the purpose of which was to set forth the institutional arrangements for the purchase and delivery of imported water from MWD by WMWD, for replenishment of the Basin Area, and for extraction of amounts equal to the amounts of imported water purchased. Subsequent to the certification of the 2005 PEIR, such a cooperating agreement was executed by WMWD, SBVMWD and MWD.

The 1978 Chino Basin Judgment

The groundwater rights and storage capacity within the Chino Basin were established by San Bernardino Superior Court Case No. 164327 in *Chino Basin Municipal Water District v. City of Chino*, et al. in 1978, now designated No. RCV 51010 (Chino Basin Judgment). In the Chino Basin Judgment, the Chino Basin Watermaster was appointed to administer and enforce the provisions of the Judgment and any subsequent instructions or orders of the Court.

The Chino Basin Judgment declared that the safe yield of the Chino Basin is 140,000 acre-feet per year. The safe yield is allocated among three pools as follows:

(1) Overlying Agricultural Pool (dairy farmers and the State of California): 82,800 acre-feet per year

(2) Overlying Non-Agricultural Pool (industrial users): 7,366 acre-feet per year

(3) Appropriative Pool (water for municipalities and other government agencies):

49,834 acre-feet per year

An additional 5,000 acre-feet per year (200,000 acre-feet per year of controlled overdraft, averaged over 40 years) is allocated to the Appropriative Pool, which defines the safe yield per the Chino Basin Judgment as 145,000 acre-feet per year. Parties are allowed to pump in excess of the safe yield as needed, provided replenishment water is later purchased and restored to the basin. Groundwater not pumped by the agricultural users (Overlying Agricultural Pool) is re-allocated to the Appropriative Pool for municipal use.

The Superior Court mandated that the Chino Basin Watermaster develop an Optimum Basin Management Plan (OBMP). The OBMP, developed in 1998, established primary management goals to address issues, needs and interests of the water producers in Chino Basin, including four primary goals: (1) enhance basin water supplies, (2) protect and enhance water quality, (3) enhance management of the basin, and (4) equitably finance the OBMP (OBMP). In July 2000, the Watermaster's planning process culminated with the adoption of the Peace Agreement and certification of the OBMP Program EIR (PEIR, SCH#2000041047) that ended over 15 years of litigation within the Chino Basin. In December 2007, the Peace II Agreement was approved by the court; its two main features include: the expansion of the desalter program and the strategic reduction in groundwater storage to achieve hydraulic control for the Chino Groundwater Basin. A Subsequent EIR (SEIR) was prepared for the Peace II Program and what certified on October 6, 2010. (SEIR 2010)

Agreement Relating to the Diversion of Water from the Santa Ana River System

On March 20, 2007, WMWD, SBVMWD and the City of Riverside entered into an agreement titled "Agreement Relating to the Diversion of Water from the Santa Ana River System Among Western Municipal Water District of Riverside County, San Bernardino Valley Municipal Water District and City of Riverside" (Riverside Agreement). The Riverside Agreement established common support for pending applications before the State Water Resources Control Board related to the Santa Ana River (SAR) including the proposed diversion of water from the SAR and provided for the protection of Riverside's water resources in groundwater basins. The agreement also established thresholds of groundwater levels of significance to determine when the diversion of SAR water would be considered to have adversely impacted the San Bernardino Basin Area mitigation measures to reduce those impacts to less than significant levels. Potential impacts to the Riverside North Basin and mitigation of those impacts are also established by the Riverside Agreement.

Design Considerations/Avoidance

As a part of the proposed project, WMWD shall cooperate and coordinate with other water agencies that replenish and extract water in the Basin Area so as not to interfere with other programs being implemented to manage and protect groundwater in the Basin Area, and, when possible, to assist in such programs. The Central Feeder Connection well field was added to the project in part to alleviate concerns raised by other water agencies using the Basin Area. Multiple possible extraction and replenishment locations allow for optimal operating scenarios to assure that recharge and extraction operations maintain or improve, to the extent possible, and do not exacerbate water level or water quality problems.

Potential Significant Impacts/Environmental Consequences

Threshold: *(1) Substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there is a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells drops to a level which does not support existing land uses or planned uses for which permits have been granted) or (2) causes undesirably high groundwater levels in the area of historically high groundwater (AHHG). A reduction in average groundwater levels in the San Bernardino Basin Area at one or more index wells of more than 10 feet shall be considered significant.*

San Bernardino Groundwater Basin

Modeling Background and Existing Condition

Subsequent to the completion of the 2005 PEIR, there have been changes in factors that affect the potential availability and reliability of imported water supplied by MWD which may be used to recharge the San Bernardino Basin Area (Basin Area). Such factors include potential reductions in Delta exports, potential regulatory and emergency constraints on the use of water conveyance facilities, water quality issues, and short and long term climatic changes. (See "State Water Project" information, pg 4.6-12.)

In order to provide an updated assessment of potential groundwater impacts due to the RCF project, and in consideration of the Western Judgment, two hydrologic analyses were completed by Geoscience Support Services, Inc. (Appendix F) that reflect current conditions regarding the availability and reliability of imported water and natural hydrological conditions. The first model provides analysis of the RCF for an average rainfall year cycle (January 1979 through December 2004) which is similar to the 2005 PEIR modeling except with updated information starting in 2007. The second hydrologic analysis evaluates the project for a prolonged dry year period (January 1945 through December 1968). The same modeling assumptions are used in both analyses, as described below and in **Table 4.6-A, Comparison of Model Assumptions**.

The following discussions summarize findings of the hydrologic analyses regarding groundwater levels. The term "Baseline Run" for purposes of modeling is not considered the "existing condition baseline" per CEQA. The existing (2007) water elevation levels are shown in **Tables 4.6-B** and **4.6-D** for reference as CEQA requires, but are not the most appropriate baseline to which groundwater modeling results should be compared. This is because groundwater levels are not static and the changes in groundwater levels occur over months, years and sometimes decades, and are affected by operating agreements, court decisions, regulations and laws as they can be implemented under the Western Judgment.

The "existing condition" of Basin Area operations is per the Western Judgment (see page 4.6-25) and other agreements between the parties. The project will be in accordance with the Western Judgment which provides that extractions may be made in addition to those determined by the Judgment, pursuant to agreement between SBVMWD and WMWD. The Judgment further provides that nothing therein shall preclude SBVMWD, WMWD or any other party from exercising such rights as they may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of underground storage capacity of the

Basin Area shall not interfere with any replenishment program of the Basin Area. The Watermaster is charged with the responsibility of administering the Judgment, and all subsequent orders of the Court made pursuant to the Court's continuing jurisdiction. The Watermaster is required to file with the Court annual reports which include, among other information, summaries of extractions by all parties pumping water from the Basin Area, groundwater level measurements, and an accounting of all credits and obligations in the groundwater basin. Thus, a modeled "Baseline Run" is a more relevant comparative measure against which the project's projected operational impacts can be measured.

The Chino Basin groundwater levels are discussed following the discussion of the San Bernardino Basin Area. The potential impact of the RCF project upon water quality is discussed in Section 4.7 (Groundwater Quality) of this SEIR/EIS.

The MODFLOW groundwater flow model of the San Bernardino Basin Area Refined Basin Flow Model was used to evaluate water level changes for various project-related scenarios, all assuming the well field location adjacent to the Central Feeder Pipeline Connection. MODPATH particle tracking was utilized to evaluate potential impacts of the proposed project on remediation (i.e., cleanup) efforts by evaluating groundwater flow paths seepage velocities and travel times. The Refined Basin Solute Transport Model was used to simulate the groundwater quality for PCE (Newmark and Muscoy plumes), TCE (Norton and Redlands-Crafton plumes), and perchlorate in the Basin Area. Details of the groundwater quality (MODPATH) modeling are analyzed in Section 4.7.

A total of four predictive model runs were made using the Refined Basin Flow Model and Refined Basin Solute Transport Model to assess the potential impacts of the RCF on groundwater levels and water quality. These model runs are:

- Baseline Run (No Project)
- RCF Scenario 1
- RCF Scenario 2
- RCF Scenario 3

The RCF modeling Scenarios includes two "bookend" scenarios (Scenarios 1 and 3) and one "most likely" scenario (Scenario 2). "Bookend" conditions are generally described as conditions that result from extraction and replenishment schedules that are likely to cause the most environmentally stressful conditions (Scenario 3) and conditions that are the least stressful (Scenario 1) than those encountered under the "most likely" scenario. Results from the Scenarios were compared to the Baseline Run (No Project).

The Baseline Run prepared for the 2005 PEIR was conducted by Geoscience and included the model assumptions initially used for the model at that time. For the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (USAR IRWMP), Geoscience updated the model baseline to include changes in the status of water agreements and hydrologic factors that reflected the Baseline conditions in 2007. The USAR IRWMP Baseline Run 1 was updated in June 2009 to include changes to the USAR IRWMP Baseline Run 1 that had occurred in the intervening years. **Table 4.6-A** compares the assumptions used for the Baseline Run (Average), Baseline Run (Prolonged Dry) and USAR IRWMP Baseline Run 1.

Table 4.6-A
Comparisons of Model Assumptions

Model Assumptions		IRWMP Baseline Run 1	Baseline Run (Average)	Baseline Run (Prolonged Dry)
Hydrologic Base Period		1962–2000 with Annual Stress Period	1979-2004 with Monthly Stress Period	1945-1968 with Monthly Stress Period
Groundwater Pumping		2005 Urban Water Management Plans	2005 Urban Water Management Plans with 2008 Update	2005 Urban Water Management Plans with 2008 Update
Artificial Recharge	Valley District's Replenishment Obligation	Western Judgment	Western Judgment	Western Judgment
	Diversion by SBVWCD	Agreement between SBVWCD and Valley District/Western	SBVWCD's Licensed Rights	SBVWCD's Licensed Rights
	Diversion by Senior Water Rights Claimants	Seven Oaks Accord	Seven Oaks Accord	Seven Oaks Accord
	Valley District/Western	SAR Water Rights Applications	SAR Water Rights Applications	SAR Water Rights Applications

Source: 2009 Geoscience, Page 19, and 2010 Geoscience, Page 13.

Average Year Conjunctive Use Analysis

The average modeling Baseline Run was based upon monthly data availability and analyses of historic precipitation and stream flow for the 26-year period from January 1979 through December 2004. This base period covers both wet and dry hydrologic cycles and the average precipitation and streamflow are approximately the same as the long-term average (2009 Geoscience, Figures 4 and 5). For model prediction runs, the hydrologic base period was assumed to represent future conditions for the 26-year period from January 2007 through December 2032. Baseline groundwater pumping was determined based on future water demands obtained from 2005 Urban Water Management Plans and updated information presented by cities of Colton and Redlands, San Bernardino Municipal Water District, and West Valley Water District.

As indicated in the 2009 Geosciences report, during the projected model period 2007-2032, the groundwater pumping for the baseline run ranged from 206,100 acre-ft to 308,300 acre-ft, with an average of 258,600 acre-ft/yr. The baseline recharge consists of Santa Ana River diversions and the Valley District's Replenishment Obligations. The baseline artificial recharge ranges from 8,200 acre-ft to 144,000 acre-ft, with an average of 87,700 acre-ft per year. (2009 Geoscience, p. 20)

Groundwater storage in the Basin Area declines by 32,181 acre-ft during the period 2007 through 2032 under Baseline Run (No Project) conditions. The average underflow outflow

across the San Jacinto Fault near the SAR to the Rialto-Colton Groundwater Basin for the period 2007 to 2032 was estimated to be 712 acre-ft/yr under Baseline Run (No Project) conditions.

The three Scenarios were run for the 26-year period from 2007 through 2032 with monthly stress periods. The RCF Scenarios use the same assumptions as the Baseline Run (No Project), except these RCF conjunctive use scenarios include additional project artificial recharge and groundwater pumping. The actual amount of RCF water replenishment and extraction will vary year to year, depending upon natural hydrologic conditions that may affect the timing of available surplus water, spreading ground capacity and basin groundwater levels (i.e., storage). As shown in **Table 4.6-C**, below, inflow into the Basin Area (replenishment) include recharge from gaged streamflow, artificial recharge, local runoff generated by precipitation, infiltration from direct precipitation, return flow from groundwater pumping, from ungaged mountain front runoff and underflow. Outflow from the Basin Area (extraction) comprise evapotranspiration, groundwater pumping, and underflow. The difference between the inflow and outflow is the change in groundwater storage. The projected annual inflow and outflow remain relatively constant in the Baseline Run (No Project) and the three RCF Scenarios, with the greatest variable being RCF-related artificial recharge and RCF-related groundwater pumping. However, the replenishment and extraction schedules for the RCF Scenarios were quantified through iterative model runs so that total RCF-related extraction under each scenario is less than total RCF-related replenishment. Additionally, RCF-related groundwater pumping will occur in the same hydrologic years as RCF-related recharge, or in the years immediately following such recharge. As a result, the Basin Area storage for each RCF Scenario will always be equal to or above the storage for the Baseline Run (No Project).

The initial replenishment schedules for each RCF Scenario are based on availability of surplus water that are likely to cause the most environmentally stressful conditions (RCF Scenario 3) and conditions less stressful (RCF Scenario 1) than those encountered under the "most likely" condition (RCF Scenario 2). Based on results from iterative model runs, RCF Scenario 1 consists of artificial recharge of 42,000 acre-ft during the 26 years from 2007 through 2032. RCF Scenario 2 includes artificial recharge of 150,000 acre-ft for 2007 through 2032. RCF Scenario 3 includes artificial recharge of 198,000 acre-ft for 2007 through 2032.

Five new wells are to be located within the Redlands-Crafton plume at the eastern end of the proposed Riverside-Corona Feeder Pipeline. The maximum capacity for each well is assumed to be 3,000 acre-ft/yr (total of 15,000 acre-ft/yr) based on local geohydrologic conditions. Based on results from iterative model runs, RCF Scenario 1 consists of extraction of 34,500 acre-ft during the 26 years from 2007 through 2032. RCF Scenario 2 includes extraction of 125,800 acre-ft. RCF Scenario 3 includes extraction of 163,300 acre-ft for 2007 through 2032.

In general, the model generated groundwater flow direction is similar to historical directions with groundwater flowing west from the Santa Ana River and Mill Creek Spreading Grounds, and southeast from the Lytle Creek and Cajon Creek (i.e., flowing to the Pressure Zone area). Groundwater flow directions and general patterns of fluctuations for the three RCF scenarios are similar to the Baseline Run. (No Project).

Groundwater level fluctuations reflect hydrological wet and dry cycles. For example, a change in groundwater level of 50 feet to 100 feet occurs in the Pressure Zone between model years 2011 (highest level) and 2020 (lowest level). Groundwater elevations for the Baseline Run (No Project) and each of the three RCF Scenarios in the years 2011, 2020, and 2032 (end of model run) are shown in Figures 18 through 29 of the 2009 Geoscience Report (Appendix F).

The average simulated groundwater elevations and the difference between the average groundwater elevations for the Baseline Run (No Project) with respect to the RCF scenarios are shown in **Table 4.6-B** and summarized below.

Based on results of the modeling, the following conclusions were made for the RCF conjunctive use scenarios:

- **RCF Scenario 1 (Less Stressful Conditions).** For RCF Scenario 1, the changes in groundwater level from the Baseline Run (No Project) range from a decline of one foot to a rise of three feet. Based on results from iterative model runs, RCF Scenario 1 consists of total artificial recharge of 42,000 acre-ft and total extraction of 34,500 acre-ft during the 26 years from 2007 through 2032. Total Basin Area groundwater storage decline for RCF Scenario 1 was less than the storage decline of the Baseline Run (No Project) and is estimated to be negative 31,496 acre-ft. This indicates that slightly more water (685 acre-ft) would be recharged annually over the 26 years than what was necessary to maintain a total recharge equal to the Baseline Run (No Project) conditions. The average underflow outflow across the San Jacinto Fault was estimated to be 707 acre-ft/yr for the RCF Scenario 1. This change in underflow outflow is minimal as compared to the Baseline Run. (No Project).
- **RCF Scenario 2 (Most Likely Conditions).** Groundwater level changes range from a decline of four feet to a rise of 11 feet for RCF Scenario 2 as compared to the Baseline Run (No Project). RCF Scenario 2 includes total artificial recharge of 150,000 acre-ft and total extraction of 125,800 acre-ft. Total Basin Area groundwater storage decline for RCF Scenario 2 was less than the storage decline of the Baseline Run (No Project) conditions and is estimated be negative 30,909 acre-ft. These results indicate that slightly more water (1,272 acre-ft) would be recharged over the 26 years than what was necessary to maintain a total recharge equal to the Baseline Run (No Project) conditions. The average underflow outflow across the San Jacinto Fault was estimated to be 694 acre-ft/yr, and 691 acre-ft/yr for RCF Scenario 2. This change in underflow outflow is minimal as compared to the Baseline Run. (No Project).
- **RCF Scenario 3 (Most Stressful Conditions).** For RCF Scenario 3, groundwater level changes range from a decline of six feet to a rise of 13 feet. RCF Scenario 3 includes total artificial recharge of 198,000 acre-ft and total extraction of 163,300 acre-ft. Total Basin Area groundwater storage decline for RCF Scenario 3 was also less than the storage decline of the Baseline Run (No Project) conditions and is estimated be negative 31,358 acre-ft. These results indicate that slightly more water (823 acre-ft) would be recharged over the 26 years than what was necessary to maintain a total recharge equal to the Baseline Run (No Project) conditions. The average underflow outflow across the San

Jacinto Fault was estimated to be 691 acre-ft/yr for this RCF Scenario. This change in underflow outflow is minimal as compared to the Baseline Run. (No Project).

In general, the wells with declines in water levels are located in the vicinity or downgradient of the proposed RCF well field (e.g., City of Redlands Well No. 32 and City of Riverside Raub 1 Well). Wells with increases in groundwater elevations are located in the forebay recharge areas due to artificial recharge from the RCF. As shown in **Table 4.6-B**, below, the maximum projected decline in groundwater levels is six (6) feet. Inasmuch as the maximum projected reduction in average groundwater levels at all wells is less than 10 feet, the potential impact upon groundwater levels will **be less than significant**.

In the 2005 PEIR, the acreage of the potential liquefaction area in the Pressure Zone is approximately 720 acres for the year 2001 (year with the greatest potential liquefaction area) and is approximately 3.7% of total Pressure Zone area of 19,320 acres for the Baseline Run. (No Project). The potential liquefaction area was estimated to be approximately 690 acres, 540 acres, and 600 acres for RCF Scenarios 1 through 3, respectively. The slight reduction in potential liquefaction area in the Pressure Zone was due to extraction occurring in the proposed RCF well field near the Pressure Zone area. The 2009 modeling corroborates this finding in that the AHHG wells (City of Riverside Raub 1, Gage Canal Company Lower Kelly and SBVMWD Backyard) are projected to experience decreases in water levels of one to four feet (**Table 4.6-B**). A lower water table results in **less susceptibility to liquefaction**.

Table 4.6-C shows a comparison of the groundwater modeling results between that discussed in the 2005 PEIR and those prepared for this SEIR/EIS (2009 Geoscience).

The results of recharge and extraction modeling show that the RCF conjunctive scenarios, as currently projected, will have less groundwater pumping and artificial recharge than were originally projected for the RCF project. As a result, under all three current scenarios, the total changes in groundwater storage within the Basin Area will be less than previously projected. Additionally, as shown in **Table 4.6-C**, the total reduction in groundwater storage will be less under each of the three RCF conjunctive scenarios than would occur under Baseline (No Project) conditions.

Therefore, it can be concluded that the Realignment Alternative with Additional Connections will have **less than significant** impacts on groundwater resource levels within the Basin Area, consistent with the findings of the 2005 Project Alignment analysis. No additional mitigation measures will be necessary.

Table 4.6-B
Groundwater Elevations at Wells 2007-2032

Well Name	Existing Groundwater Elevation in 2007	Average Groundwater Elevations 2007 to 2032				Difference in Average Groundwater Elevation between Baseline Run (Average No Project) and RCF Scenarios		
		Baseline Run (No Project) [ft amsl[10]]	RCF Scenario 1 [ft amsl]	RCF Scenario 2 [ft amsl]	RCF Scenario 3 [ft amsl]	RCF Scenario 1 minus Baseline Run [ft]	RCF Scenario 2 minus Baseline Run [ft]	RCF Scenario 3 minus Baseline Run [ft]
SBVMWD San Bernardino Ave. Well	1,456	1,476	1,477	1,481	1,482	2	5	7
City of San Bernardino Mt. Vernon Well	1,183	1,038	1,038	1,039	1,039	0	1	1
East Valley Water District Well 62	1,122	1,084	1,084	1,085	1,085	0	1	1
Fontana Union Well 13	1,513	1,266	1,267	1,268	1,268	0	2	2
Fontana Union Well 26	2,047	1,920	1,920	1,291	1,921	0	1	1
Fontana Union Well 27	2,215	2,152	2,152	2,152	2,152	0	0	0
East Valley Water District Well 120	1,358	1,376	1,376	1,377	1,377	0	1	1
City of San Bernardino Vincent Well	2,328	2,190	2,190	2,190	2,190	0	0	0
City of San Bernardino Devil Canyon Well No. 1	1,359	1,464	1,467	1,473	1,475	3	9	11
City of San Bernardino Newmark 3 Well	1,291	1,351	1,353	1,357	1,359	2	6	8
West Valley Water District Lord 7 Well	1,233	1,071	1,071	1,072	1,072	0	1	1
City of Riverside Raub 1 Well[11]	1,003	866	865	863	862	-1	-3	-3
City of Redlands Well 32	1,199	1,226	1,224	1,221	1,220	-1	-4	-6
City of Redlands Orange Street Well	1,240	1,254	1,253	1,252	1,251	-1	-2	-3
East Valley Water District Well 24A	1,118	1,077	1,078	1,080	1,081	1	3	4
City of San Bernardino Cajon Well No. 1	1,805	1,717	1,718	1,718	1,719	1	2	2
East Valley Water District Well 40	1,166	1,173	1,173	1,172	1,171	0	-2	-2
City of San Bernardino Devil Canyon Well No. 3	1,288	1,649	1,653	1,660	1,663	3	11	13
City of San Bernardino Leroy Street Well	1,116	1,069	1,070	1,072	1,073	1	3	4
City of Redlands Agate 2 Well	1,630	1,580	1,583	1,588	1,591	3	9	11
East Valley Water District Cone Camp Well	1,602	1,549	1,550	1,553	1,554	1	4	5
Bear Valley Mutual Water Company Nelson Street Well	1,351	1,367	1,367	1,368	1,368	0	1	1
Gage Canal Company Lower Kelly Well[2]	1,005	881	880	878	877	-1	-3	-4
City of Redlands Airport Well No. 2	1,630	1,364	1,364	1,365	1,365	0	1	2
East Valley Water District Well 146 A	1,287	1,303	1,303	1,302	1,302	0	0	0
SBVMWD Backyard Well[2]	965	863	862	860	860	-1	-2	-3

Source: 2009 Geoscience, Table 1, 2008 Wildermuth

[10] Above mean sea level
[11] Located within Area of Historic High Groundwater (AHHG)

Table 4.6-C
Summary Average Annual Water Budgets

Flux Terms			2005 PROGRAM EIR[1,2] Baseline (No Project)	2005 PROGRAM EIR[1,2] Scenario 1 (RCF Project)	2009 SUPPLEMENTAL EIR/EIS[3,4] Baseline (No Project)	2009 SUPPLEMENTAL EIR/EIS[3,4] RCF Scenario 1 (Less Stressful Conditions)	2009 SUPPLEMENTAL EIR/EIS[3,4] RCF Scenario 2 (Most Likely Conditions)	2009 SUPPLEMENTAL EIR/EIS[3,4] RCF Scenario 3 (Most Stressful Conditions)
	Forecast Period		2001-2039		2007 to 2032			
Inflow	Recharge from Gaged Streamflow		139,517	138,927	113,208	113,184	113,071	112,968
	Artificial Recharge	Others	32,316	32,316	87,741	87,741	87,741	87,741
		RCF	**0**	**19,411[1]**	**0**	**1,615[3]**	**5,769[3]**	**7,615[3]**
	Recharge from Local Runoff Generated by Precipitation		5,627	5,627	5,221	5,221	5,221	5,221
	Infiltration from Direct Precipitation		1,137	1,137	1,083	1,083	1,083	1,083
	Return Flow from Groundwater Pumping		39,575	39,575	48,807	48,807	48,807	48,807
	Recharge from Ungaged Mountain Front Runoff		17,820	17,820	17,171	17,171	17,171	17,171
	Underflow Recharge		2,997	2,997	3,667	3,667	3,667	3,667
	Total Inflow		**238,989**	**257,809**	**276,898**	**278,489**	**282,531**	**284,273**
Outflow	Evapotranspiration		5,822	7,087	16,856	17,099	17,619	17,940
	Groundwater Pumping	Others	233,488	233,488	258,588	258,588	258,588	258,588
		RCF	**0**	**17,564[2]**	**0**	**1,327[4]**	**4,838[4]**	**6,281[4]**
	Underflow Discharge		3,003	2,951	2,692	2,687	2,674	2,671
	Total Outflow		**242,313**	**261,090**	**278,136**	**279,701**	**283,720**	**285,480**
Change in Groundwater Storage (Total Inflow – Total Outflow)			**-3,324**	**-3,281**	**-1,238**	**-1,211**	**-1,189**	**-1,206**

Sources: 2009 Geoscience, Tables 2 through 5and PEIR, Appendix F, Tables 1, 3, and 4.
Notes:
[1] Represents total annual recharge (757,000) divided equally over 39 year forecast period.
[2] Represents total annual extraction (685,000) divided equally over 39 year forecast period.
[3] Represents total annual recharge divided equally over 24 year forecast period.
[4] Represents total annual extraction divided equally over 24year forecast period.
Units in Acre-ft.

Prolonged Dry Year Modeling Analysis

To evaluate a worse case condition than the average rainfall conditions described above, a 2010 Geosciences report analyzed prolonged dry baseline runs. The Prolonged Dry Baseline Run uses the same projected water demands as the previous Baseline Run except with a prolonged dry base period from January 1945 through December 1968 instead of an average base period from January 1979 through December 2004.

For the sensitivity predictive runs, a prolonged dry hydrologic base period from January 1945 through December 1968 was assumed to represent future conditions for the 24-year period from January 2007 through December 2030. During this period, the average annual precipitation was 14.00 inches at the San Bernardino County Hospital Station compared to a long term average of 16.19 inches. The average annual streamflow at the Santa Ana River (SAR) near Mentone

gaging station was 36,400 acre-ft compared to the long term average of 57,000 acre-ft during the same period of time.

For the Prolonged Dry Baseline Run, the artificial recharge ranges from 15,800 acre-ft in year 2017 (hydrologic year 1955) to 131,500 acre-ft in year 2029 (hydrologic year 1967) with an average of 74,700 acre-ft/yr.

Three model predictive scenarios were run for a 24-year period (2007 through 2030) with monthly stress periods. The RCF Prolonged Dry Scenarios use the same assumptions as the Prolonged Dry Baseline Run (No Project), except these RCF prolonged dry conjunctive use scenarios include additional project artificial recharge and groundwater pumping. The actual amount of RCF artificial recharge and pumping will vary year to year, depending upon natural hydrologic conditions that may affect the timing of available surplus water, spreading ground capacity, and basin groundwater levels (i.e., storage). The artificial recharge and pumping schedules for the RCF Prolonged Dry Scenarios were quantified through iterative model runs so that total project extraction (i.e., pumping) were lower than total project replenishment. As a result, the San Bernardino Basin Area (Basin Area) storage for each RCF Prolonged Dry Scenario will always be equal to or above the storage for the Prolonged Dry Baseline Run (Dry Year No Project).

- **RCF Prolonged Dry Scenario 1.** Prolonged Dry Scenario 1 simulates RCF artificial recharge to occur when MWD surplus water is equal to or exceeds 718,000 acre-ft. Based on historic data for available MWD surplus water, this condition occurs approximately 2.8% or less of the time.

  RCF Prolonged Dry Scenario 2. Prolonged Dry Scenario 2 simulates RCF artificial recharge to occur when MWD surplus water is equal to or exceeds 485,000 acre-ft. Based on historic data for available MWD surplus water, this condition occurs approximately 20% or less of the time.

- **RCF Prolonged Dry Scenario 3.** Prolonged Dry Scenario 3 simulates RCF artificial recharge to occur when MWD surplus water is equal to or exceeds 250,000 acre-ft. Based on historic data for available MWD surplus water, this condition occurs approximately 28% or less of the time.

Based on results from iterative model runs, RCF Prolonged Dry Scenario 1 consists of no artificial **recharge** during the 24 years from 2007 through 2030 (i.e., hydrologic years from 1945 through 1968). RCF Prolonged Dry Scenario 2 includes artificial recharge of 203,200 acre-ft. RCF Prolonged Dry Scenario 3 includes artificial recharge of 300,000 acre-ft.

Based on results from iterative model runs, RCF Prolonged Dry Scenario 1 consists of no groundwater **pumping** during the 24 years from 2007 through 2030 (i.e., hydrologic years from 1945 through 1968. RCF Prolonged Dry Scenario 2 includes pumping a total of 140,000 acre-ft. RCF Prolonged Dry Scenario 3 includes pumping a total of 205,000 acre-ft.

The average simulated groundwater elevations and the difference between the average groundwater elevations for the Prolonged Dry Baseline Run (Dry Year No Project) with respect to the RCF Prolonged Dry scenarios are shown in **Table 4.6-D** and summarized below.

For RCF Prolonged Dry Scenario 1, there is no change in water level from the Prolonged Dry Baseline Run (No Project) due to no additional recharge or groundwater pumping. Water level changes range from zero (no change) to a rise of 32 ft for RCF Prolonged Dry Scenario 2 as compared to the Prolonged Dry Baseline Run (No Project). For RCF Prolonged Dry Scenario 3, these changes range from a decline of one (1) foot to a rise of 38 ft. Water levels in most of the wells would increase due to the artificial recharge from the RCF.

Groundwater storage decline for RCF Prolonged Dry Scenario 1 would be the same as the Prolonged Dry Baseline Run (No Project) conditions due to no RCF artificial recharge or groundwater pumping. Groundwater storage decline for RCF Prolonged Dry Scenarios 2 and 3 would be less than under Prolonged Dry Baseline Run (No Project) conditions, which are estimated be negative ("-") 702,419 acre-ft and negative 682,313 acre-ft. These results indicate that more water (45,071 acre-ft for Prolonged Dry Scenario 2 and 65,177 acre-ft for Prolonged Dry Scenario 3) was recharged over the 24 years than what was necessary to maintain a total recharge equal to the Prolonged Dry Baseline Run (No Project) conditions (see **Table 4.6-E** below).

In general, the patterns of the cumulative changes in groundwater storage for the Prolonged Dry Baseline Run (No Project) and RCF Prolonged Dry Scenarios 1 through 3 during the period 2007 to 2030 are similar to the historical prolonged dry base period from 1945 to 1968.

As shown in **Table 4.6-D**, below, the maximum projected decline in groundwater levels during prolonged dry years is one (1) foot at City of Redlands Well No. 32. Therefore, inasmuch as the maximum projected reduction in average groundwater levels at all wells is less than 10 feet, the potential impact upon groundwater levels during prolonged dry years will be **less than significant**.

Both the modeling analysis prepared in 2005 under average to wetter year assumptions and historically higher SWP water availability for recharge, and the Prolonged Dry-year modeling completed for the Realignment Project in 2010 indicate that the Basin Area can operate within the safe-yield of the basin and with less than significant impacts to existing wells and groundwater levels. Based on the modeling assumptions used, impacts of the project to groundwater levels are considered less than significant.

Coordinated basin management under current and future conditions is critical however, to assuring the safe-yield of the basin and less than significant impacts to all users of the Basin Area. If the RCF were not operated in a coordinated fashion under the requirements of the Western Judgment, then impacts could be significant. Therefore, mitigation measures **MM GWL 1** and **2** from the 2005 PEIR required that operating plans be prepared based on sound modeling set the frequency with which operating plans must be prepared. Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in **MM GWL 1**, were complete and became available

for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Thus, **MM GWL 1** was accomplished and is no longer needed for the RCF realigned pipeline.

Additionally, WMWD has been participating in ongoing management efforts with the Basin Area Technical Advisory Committee (BTAC) which will assure that this project is included and managed to avoid adverse impacts to water levels in the Basin Area. The ongoing monitoring and adaptive management recommended by **MM GWL 2** is still necessary, but the mitigation measure has been revised to include WMWD's involvement with the TAC. The currently revised mitigation measure below, **MM GWL 2 (Revised)**, will replace **MM GWL 1** and **2** from the 2005 PEIR. Potential adverse impacts to groundwater levels in the San Bernardino Basin Area will be **less than significant with implementation of mitigation measure MM GWL 2 (Revised)**.

Table 4.6-D
Groundwater Elevations at Wells for Prolonged Dry Baseline 2007-2030

Well Name	Existing Groundwater Elevation in 2007	Average Groundwater Elevations 2007 to 2032 (Prolonged Dry Baseline Run and RCF Prolonged Dry Scenarios)				Difference in Average Groundwater Elevation between Prolonged Dry Baseline Run and RCF Prolonged Dry Scenarios		
		Baseline Run (Dry Year No Project) [ft amsl[12]]	RCF Scenario 1 [ft amsl]	RCF Scenario 2 [ft amsl]	RCF Scenario 3 [ft amsl]	RCF Scenario 1 minus Baseline Run [ft]	RCF Scenario 2 minus Baseline Run [ft]	RCF Scenario 3 minus Baseline Run [ft]
SBVMWD San Bernardino Ave. Well	1,456	1,411	1,411	1,432	1,436	0	21	26
City of San Bernardino Mt. Vernon Well	1,183	950	950	954	956	0	3	5
East Valley Water District Well 62	1,122	1,029	1,029	1,030	1,030	0	1	2
Fontana Union Well 13	1,513	1,073	1,073	1,083	1,091	0	9	17
Fontana Union Well 26	2,047	1,657	1,657	1,669	1,679	0	12	22
Fontana Union Well 27	2,215	2,061	2,061	2,064	2,067	0	3	6
East Valley Water District Well 120	1,358	1,329	1,329	1,343	1,346	0	14	16
City of San Bernardino Vincent Well	2,328	2,086	2,086	2,086	2,086	0	0	0
City of San Bernardino Devil Canyon Well No. 1	1,359	1,372	1,372	1,381	1,385	0	9	13
City of San Bernardino Newmark 3 Well	1,291	1,274	1,274	1,282	1,284	0	7	10
West Valley Water District Lord 7 Well	1,233	943	943	949	953	0	5	9
City of Riverside Raub 1 Well[13]	1,003	820	820	821	821	0	1	1
City of Redlands Well 32	1,199	1,184	1,184	1,185	1,183	0	1	-1
City of Redlands Orange Street Well	1,240	1,212	1,212	1,216	1,216	0	4	4
East Valley Water District Well 24A	1,118	1,009	1,009	1,011	1,011	0	2	3
City of San Bernardino Cajon Well No. 1	1,805	1,614	1,614	1,617	1,618	0	2	3
East Valley Water District Well 40	1,166	1,134	1,134	1,136	1,135	0	2	1
City of San Bernardino Devil Canyon Well No. 3	1,288	1,498	1,498	1,508	1,511	0	10	13
City of San Bernardino Leroy Street Well	1,116	1,000	1,000	1,002	1,003	0	2	3
City of Redlands Agate 2 Well	1,630	1,496	1,496	1,527	1,533	0	32	38
East Valley Water District Cone Camp Well	1,602	1,476	1,476	1,502	1,508	0	25	32
Bear Valley Mutual Water Company Nelson Street Well	1,351	1,314	1,314	1,327	1,330	0	13	15
Gage Canal Company Lower Kelly Well[2]	1,005	836	836	836	836	0	1	0
City of Redlands Airport Well No. 2	1,630	1,312	1,312	1,325	1,328	0	14	16
East Valley Water District Well 146 A	1,287	1,260	1,260	1,269	1,270	0	9	10
SBVMWD Backyard Well[2]	965	815	815	816	816	0	1	1

Source: 2010 Geoscience, Table 1, 2008 Wildermuth

[12] Above mean sea level
[13] Located within Area of Historic High Groundwater (AHHG)

Table 4.6-E
Summary Water Budgets 2007 – 2030 Prolonged Dry Scenarios

Flux Terms			2009 SUPPLEMENTAL EIR/EIS			
			Prolonged Dry Baseline (No Project)	**RCF Prolonged Dry Scenario 1**	**RCF Prolonged Dry Scenario 2**	**RCF Prolonged Dry Scenario 3**
	Forecast Period		2007 to 2030			
Inflow	Recharge from Gaged Streamflow		1,988,509	1,988,509	1,988,509	1,988,509
	Artificial Recharge	Others	1,792,214	1,792,214	1,792,214	1,792,214
		RCF	**0**	**0**	**203,196**	**300,000**
	Recharge from Local Runoff Generated by Precipitation		110,248	110,248	110,248	110,248
	Infiltration from Direct Precipitation		25,991	25,991	25,991	25,991
	Return Flow from Groundwater Pumping		1,164,025	1,164,025	1,164,025	1,164,025
	Recharge from Ungaged Mountain Front Runoff		264,001	264,001	264,001	264,001
	Underflow Recharge		88,008	88,008	88,008	88,008
	Total Inflow		**5,432,997**	**5,432,997**	**5,635,577**	**5,731,003**
Outflow	Evapotranspiration		118,813	118,813	136,280	146,553
	Groundwater Pumping	Others	6,008,285	6,008,285	6,008,285	6,008,285
		RCF	**0**	**0**	**140,000**	**205,000**
	Underflow Discharge		53,388	53,388	53,430	53,479
	Total Outflow		**6,180,486**	**6,180,486**	**6,337,995**	**6,413,316**
Change in Groundwater Storage (Total Inflow – Total Outflow)			**-747,490**	**-747,490**	**-702,419**	**-682,313**

Source: 2010 Geoscience
Note: Units in Acre-ft.

Chino Groundwater Basin

With the realignment of the project pipeline, connections can now be made to JCSD facilities in the Chino Groundwater Basin. A separate analysis was not done for this project with respect to groundwater in the Chino Basin, rather, the project will operate pursuant to a management plan that is already in place and includes water for JCSD to remove from the basin and to deliver to WMWD. (DYYP Expansion, p. 5-5). The results of that analysis and WMWD's rights within it, which will be exercised via the RCF project are presented below.

The groundwater rights and storage capacity within the Chino Basin were established by the Chino Basin Judgment. The Judgment represents an absolute adjudication of all water rights in the Basin and is currently administered under the authority of the Chino Basin Watermaster with continuing jurisdiction by the Court. The principal function of adjudication generally is to control the use of a water source in order to ensure the source is utilized in an optimum manner. The Optimum Basin Management Program (OBMP) is being implemented pursuant to the Judgment and a 1998 ruling of the court in its exercise of continuing jurisdiction. As stated previously, the OBMP, developed in 1998, established primary management goals to address issues, needs and interests of the water producers in Chino Basin, including four primary goals: (1) enhance basin water supplies, (2) protect and enhance water quality, (3) enhance

management of the basin, and (4) equitably finance the OBMP (OBMP). In July 2000, the Watermaster's planning process culminated with the adoption of the Peace Agreement and certification of the OBMP Program EIR (PEIR, SCH#2000041047) that ended over 15 years of litigation within the Chino Basin. In December 2007, the Peace II Agreement was approved by the court: its two main features include: the expansion of the desalter program and the strategic reduction in groundwater storage to achieve hydraulic control for the Chino Groundwater Basin. A Subsequent EIR (SEIR) was prepared for the Peace II Program and what certified on October 6, 2010. (SEIR 2010) One part of OBMP implementation was the Groundwater Basin (Chino Basin) Dry-Year Yield Program Expansion (DYYP Expansion) would accomplish OBMP Program Element 9 and contribute toward OBMP Program Elements 7 and 8. (DYYP Expansion, p. 1-5).

The Chino Groundwater DYYP Expansion is a proposed conjunctive-use program developed by the Chino Basin Watermaster in association with Inland Empire Utilities Agency (IEUA), MWD, Three Valleys Municipal Water District (TVMWD), and WMWD. (DYYP Expansion, p. ES-1) Conjunctive-use is the optimal management of both surface water and groundwater in order to increase overall water supplies. Storage or surplus surface supplies can be accomplished either directly or through "in-lieu." In 2008, MWD, IEUA, the Chino Basin Watermaster, and Chino Basin appropriators began implementation of the initial Dry-Year Yield Program (DYYP), which had been under development since 2002. The initial program attains conjunctive-use primarily through "in-lieu exchange" (i.e., Chino Basin appropriators use MWD surplus imported water in-lieu of groundwater during *wet* years, thereby storing unused groundwater for use during future *dry* years.), but could also use direct recharge of surplus MWD imported supplies. (DYYP Expansion, p. ES-2) The DYYP Expansion was evaluated pursuant to CEQA in an Initial Study/Mitigated Negative Declaration, which was adopted December 17, 2008 (DYYP Expansion MND/IS), and was part of the evaluated alternatives in the Pease II SEIR.

The initial DYYP anticipated that over the course of the initial DYYP, the Chino Basin appropriators would decrease groundwater production and increase imported water deliveries from MWD by 25,000 acre-ft during *wet* years. The program also provides the flexibility for MWD to deliver "surplus" imported water for recharge, thereby increasing Chino Basin storage. Conversely, during *dry* years, the Chino Basin appropriators would increase groundwater production and decrease imported water purchases from MWD by 33,000 acre-ft. This exchange would allow the Chino Basin appropriators to use MWD surplus imported water in-lieu of groundwater during wet years, thereby storing unused groundwater for use during future dry years. The DYYP Expansion provides for maximum storage up to 150,000 acre-ft. Under the expanded DYYP, assuming that withdrawals from MWD's storage account would occur over the same three-year dry period (as with the initial program), the "take" from MWD's account could be as high as 50,000 acre-ft. This MWD conjunctive-use storage program represents about 20 percent of the Chino Watermaster's long-term storage objectives for the Chino Basin. (DYYP Expansion, p. 1-5)

The initial DYYP relied on in-lieu exchange to develop MWD's storage account. During wet years when surface supplies exceed demand, imported water deliveries would increase and groundwater extraction would decrease by an equal amount. This unpumped groundwater is thereby stored and available for use in later years when surface supplies may be limited. This

type of year is called a "put year." When surface supplies are short, i.e., in a dry year, the previously unpumped groundwater would be extracted, in addition to the normal groundwater production. This type of year is called a "take year." The in-lieu exchange capacity of any agency is limited by the resource with the least available supply. (DYYP Expansion, pp. 1-5 and 1-6)

WMWD's participation in the DYYP Expansion would provide a direct export connection to the Chino Basin. WMWD's primary role would be participation on the extraction, or "take" side, of the DYYP Expansion. WMWD's point of connection (Clay Street Connection) to the Chino Basin would be via the Jurupa Community Services District, a Chino Basin Appropriator and retail agency of WMWD. (DYYP Expansion, p. 3-11) Thus, this analysis applies only to the Realignment Alternative with Additional Connections which includes the Clay Street Connection.

As part of the DYYP Expansion, groundwater modeling was conducted to evaluate the potential for material physical injury to the Chino Basin including an analysis of groundwater-level changes, increased potential for subsidence, losses from storage, change in direction and speed of known water quality anomalies, and the ability to maintain hydraulic control. An updated version of the Watermaster Model was used to evaluate a baseline alternative along with the three proposed Operations Plan scenarios. The baseline alternative was based on the Alternative 1C Peace II Project Description with the current 100,000 acre-ft DYYP. This baseline was determined to have no material physical injury to the Chino Basin and was therefore used as the basis from which to evaluate any impacts resulting from three DYYP Expansion operations scenarios as shown in **Table 4.6-F**.

Table 4.6-F
Summary of Chino Basin Dry-Year Yield Operations Scenarios

Operations Scenario	Description	Range in Storage (acre-ft)
No. 1: "Typical Storage"	Out of a ten year cycle, this scenario assumes a consistent 3-year "put" term, 3-year "take" term, and 4-year "hold" term. Maximum annual "puts" and "takes" are 50,000 afy.	0 to +150,000
No. 2: "Negative Storage"	This scenario assumes a 3-year "put" term but "takes" can extend beyond 3 years, thus allowing the storage account to accumulate a negative balance.	-100,000 to +150,000
No. 3: "Maximum Storage"	This scenario assumes a 3-year "put" term and assumes both maximum and smaller "summertime" "takes," thus allowing the storage account to accumulate a higher balance.	0 to +300,000

Source: DYYP Expansion, Table 6-2

The groundwater modeling integrated the DYYP Expansion groundwater production requirements during "put" or "take" years with the latest groundwater pumping projections for the Chino Basin. The groundwater modeling started with the initially proposed "takes" from the Chino Basin appropriators and, if necessary, was reiterated with reduced "takes" until there were

no signs of material physical injury. Due to hydraulic control limitations, the modeling results showed that the initially proposed "takes" for Chino Hills and WMWD (via JCSD) could not be maintained, and the WMWD proposed maximum "take" was reduced from 10,000 AF/YR to 5,000 AF/YR. (DYYP Expansion, p. 6-10) This level of take was confirmed in the Peace II SEIR.

Upon finalization of the DYY Program Expansion proposed "takes," it was concluded there is no material physical injury to a Party to the Chino Basin Judgment or the Chino Basin from the projected groundwater level changes from either the baseline or dry-year yield scenarios. The findings in the Peace II SEIR substantiate this finding that no significant impacts would result from the operating assumptions included in the evaluation which include the DYY Program.

"After detailed evaluation of all hydrology/water quality issues in the DSEIR, it was concluded that all hydrology and water quality impacts can be controlled to a less than significant level. Detailed assumptions regarding future water management activities are included in this finding, for example pumping locations must be optimized, the future location of groundwater recharge must be optimized, additional imported water must be brought into the Basin over the next 20 years to offset cumulative unmet replenishment obligation (CURO), and hydraulic control of the Basin must be accomplished. Regardless, under these assumptions, all hydrology and water quality impacts can be offset or otherwise mitigated, and the hydrology and water quality impacts (including those identified under Utilities and Services Systems [section of the Peace II SEIR]) have been found to be less than significant, on a project specific and cumulative basis." (SEIR 2010, pp. 1-8)

Pursuant to the DYYP Expansion and the Peace II Agreement, groundwater extracted from the Chino Basin through the Chino Desalter and transferred to WMWD would be a maximum of 5,000 AF/YR. This extraction would be consistent with the provisions of the OBMP. Pursuant to that analysis of the DYYP Expansion and its IS/MND and the Final SEIR for Peace II, **less than significant effects** related to groundwater levels within the Chino Basin are anticipated as a result of implementation of the Riverside-Corona Feeder project.

Threshold: *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in subsidence*.

In addition to liquefaction which was evaluated in the 2005 modeling, subsidence is another condition that can result from too much (i.e. unmanaged) pumping of groundwater. Geoscience analyzed the various recharge and pumping scenarios with respect to subsidence.

The changes in land subsidence are minimal for the RCF scenarios as compared to the Baseline Run (No Project) under the average base period conditions (1979 to 2004). Increase in land subsidence due to the RCF would be minimal and would only occur in three wells under RCF Scenarios 2 and 3 conditions ranging from a total of 0.01 ft to 0.03 ft during the 26 years (i.e., approximately 0.0004 ft/yr to 0.0012 ft/yr). These sites are located in the vicinity or hydraulically downgradient of the proposed Central Feeder Connection wellfield. For the majority of the sites (i.e., 23 of 26), there would be no change in land subsidence.

The changes in land subsidence are minimal for the RCF prolonged dry scenarios as compared to the Prolonged Dry Baseline Run (No Project) under the prolonged dry base period conditions (1945 to 1968). Increase in land subsidence due to the RCF would be minimal and would only occur in three wells under Prolonged Dry Scenario 3 conditions ranging from a total of 0.01 ft to 0.02 ft during the 24 years (i.e., approximately 0.0004 ft/yr to 0.0008 ft/yr). These sites are also located in the vicinity of the proposed RCF Central Feeder Connection wellfield. Again, for the majority of the sites (i.e., 23 of 26), there would be no change in land subsidence.

Land subsidence due to declining groundwater levels has historically been reported in the Basin Area. These reports show that there was an average annual subsidence ranging from 0.015 ft/yr to 0.04 ft/yr during the period from 1944 to 1956. During the period from 1944 to 1969, at least one foot of subsidence had occurred in the Pressure Zone near the Raub well field and immediately north of Loma Linda between the San Jacinto and Loma Linda faults (2010 Geoscience).

The results of project modeling compared to existing average annual subsidence in the Basin Area indicate that the project will result in substantially lower than historic averages for the years prior to the significant subsidence experienced in the 1960's. Project subsidence ranges from 0.0004 ft/yr to 0.0012 ft/yr while historic subsidence ranges from 0.015 to 0.04 ft/yr. Impacts are **less than significant** with respect to subsidence.

Realignment Alternatives Proposed Mitigation Measures/Minimization

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 or reduce the potential significant adverse impacts to groundwater levels to below the level of significance.

*Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in **MM GWL 1**, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Thus, **MM GWL 1** was accomplished and is no longer needed for the RCF realigned pipeline.*

*Additionally, WMWD has been participating in ongoing management efforts with the Basin Area Technical Advisory Committee (BTAC) which will assure that this project is included and managed to avoid adverse impacts to water levels in the Basin Area. The ongoing monitoring and adaptive management recommended by **MM GWL 2** is still necessary, but the mitigation measure has been revised to include WMWD's involvement with the BTAC. The currently revised mitigation measure below, **MM GWL 2 (Revised)**, will replace **MM GWL 1** and **2** from the 2005 PEIR.*

MM GWL 2 (Revised): To assure that ongoing management of the RCF is coordinated with management of the Basin Area as a whole, monitoring and adaptive management shall be employed. The RCF operations management plan will be developed and tested using the

groundwater modeling employed by the Basin Area TAC (or its successor or assignee) on a annual basis. The groundwater flow and groundwater model(s) shall be used to predict the effects of project operations on the safe yield of the Basin Area. If the model(s) suggest that the replenishment and pumping regime of the proposed project operation would result in a water level reduction of greater than 10 feet, the project operation shall be modified to reduce impacts to less than significant levels.

Typical measures that could be implemented to maintain the safe yield of the basin include:

- Increased, decreased, or no replenishment
- Replenishment in an alternative location
- Increased, decreased or no extraction
- Extraction at targeted locations

Realignment Alternatives Determination of Significance under CEQA

As stated in the 2005 PEIR, impacts to groundwater levels would be less than significant after incorporating mitigation measures **MM GWL 1** through **MM GWL 2**. In light of the updated groundwater modeling prepared as part of this SEIR/EIS (Appendix F), it can be concluded that the 2005 PEIR remains adequate to address potential impacts related to groundwater levels and the mitigation measures contained therein, as described above, will be applicable to the proposed project.

With implementation of mitigation measure **MM GWL 2 (Revised)** impacts to groundwater levels will be **less than significant**.

4.6.4 No Project/Action Alternative

As there would be no recharge or extraction associated with the No Project/Action Alternative, no effects would result to groundwater levels from this alternative.

4.7 GROUNDWATER QUALITY

Potential impacts related to the degradation of water quality were found to be less than significant in the Initial Study/NOP prepared for this project (Appendix A). However, comment letters from the City of San Bernardino Municipal Water Department and City of Colton raising concerns over the issue of potentially significant impacts related to groundwater quality were received in response to the Initial Study/NOP. The focus of the following analysis is related to whether the proposed project has the potential to substantially degrade water quality. A summary of the Groundwater Quality section of the 2005 Certified PEIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment) is included in the following discussion.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- California Department of Water Resources, *State Water Project Grab Sample Data*. (Available at http://www.water.ca.gov/swp/waterquality/OM_WQ_Pubs.cfm?display=topic&pub=120,126,7679,8308, accessed on November 9, 2009) (DWR)
- California Department of Water Resources, *State Water Project Operations Data for the Months of January 2006 through December 2006*. (Available at http://www.water.ca.gov/swp/operationscontrol/monthly.cfm accessed on August 6, 2010.)
- California Regional Water Quality Control Board, Santa Ana Region, *Water Quality Control Plan Santa Ana River Basin*, 1995. (Available at http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml, accessed on August 11, 2009.) (SARWQCB Basin Plan)
- Chino Basin Watermaster, *Chino Basin Optimum Basin Management Program, State of the Basin Report 2006* prepared by Wildermuth Environmental, Inc., July 2007. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 30, 2008.) (OBMP 2006 State of the Basin Report)
- Chino Basin Watermaster and Inland Empire Utilities Agency, Chino Basin Dry-Year Yield Program Modeling Report, Volume III, prepared by Wildermuth Environmental, Inc., July 2003. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 19, 2009.) (DYYP)
- Chino Basin Watermaster, *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume I,* prepared by Black & Veatch., December 2008. (Available at http://www.cbwm.org/rep_engineering.htm, accessed on October 19, 2009.) (DYYP Expansion)
- Geoscience Support Services, Inc., *Groundwater Modeling of TDS and Nitrate-Nitrogen Concentrations, Riverside-Corona Feeder Project Conjunctive Use Scenarios*, prepared for Western Municipal Water District, March 12, 2010. (Appendix F) (2010a Geoscience)

- Geoscience Support Services, Inc., *Groundwater Modeling of Riverside-Corona Feeder Project Conjunctive Use Scenarios*, prepared for Western Municipal Water District, October 23, 2009. (Appendix F) (2009 Geoscience)
- Inland Empire Utilities Agency, *Final Subsequent EIR for the IEUP Peace II Project*, September 25, 2010. (Available at http://www.ieua.org/news_reports/notices.html, accessed on October 20, 2010) (SEIR 2010)
- Metropolitan Water District of Southern California, *The Regional Urban Water Management Plan*, November 2005. (Available at http://www.mwdh2o.com/mwdh2o/pages/yourwater/ywater01.html, accessed on November 10, 2009.) (MWD Regional UWMP)
- Santa Ana Watershed Project Authority, *Draft 2009 Santa Ana Integrated Watershed Plan*, January 2009. (Available at http://www.sawpa.org/owow-generalinfo.html, accessed on November 10, 2009.) (SAWPA)
- United States Environmental Protection Agency, *Region 9 Superfund, Newmark Groundwater Contamination Site Overview.* (Available at http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/vwsoalphabetic/Newmark+Groundwater+Contamination?OpenDocument, accessed November 10, 2009.) (EPA)
- Wildermuth Environmental Inc. for Basin Monitoring Program Taskforce, *Basin Plan Amendment Required Monitoring and Analysis Recomputation of Ambient Water Quality in the Santa Ana Watershed for the Period 1987-2006, Final Technical Memorandum*, August 2008. (Available At SAWPA.)

4.7.1 Setting/Affected Environment

In addition to the discussion of groundwater below, see also a general discussion of water rights and background issues in Section 2.1, Background, and analysis of groundwater levels in Section 4.6.

Groundwater Quality in General

Groundwater is the water that is present below ground in saturated soil or rock materials. Groundwater "recharge" occurs when water (e.g., from rain) infiltrates through the soil and enters the groundwater reservoir. When groundwater is pumped and extracted from the ground, it may be used for domestic, irrigation, and industrial purposes; consequently the quantity and quality of local ground water are important water resource issues.

Groundwater can be contaminated by native or introduced pollutants. Man-made sources of pollutants can include landfills, septic tanks, leaky underground storage tanks, overuse of fertilizers and pesticides, and from fuels used in the defense industry. If groundwater becomes polluted, it may no longer be safe to drink without treatment to remove the contamination. Pollutants that contaminate groundwater may be some of the same pollutants that contaminate surface water. Compounds from the surface can move through the soil and end up in the groundwater. For example, pesticides and fertilizers used in agriculture and landscaping applications can find their way into groundwater supplies over time. Road salt, toxic substances

from mining sites, and used motor oil also may seep into groundwater. In addition, it is possible for untreated waste from septic tanks and toxic chemicals from underground storage tanks to contaminate groundwater. Perchlorate and its salts (e.g., ammonium perchlorate) used in solid propellant for rockets, missiles, and fireworks is a widespread inorganic contaminant of drinking water. Results of monitoring by public water systems has shown perchlorate in over 300 drinking water sources, primarily wells and mostly in the counties of Los Angeles, San Bernardino and Riverside. Perchlorate is also present in the Colorado River, an important source of water for drinking and contamination.

Native or natural groundwater pollution occurs when minerals already existing within the soil leach into the groundwater, causing it to become unsuitable for drinking. Groundwater can remain in contact with minerals present in the soil and bedrock for extended periods of time and become saturated with dissolved solids from these minerals. Measurement of total dissolved solids (TDS) is a good indicator of the mineralized character and the quality of groundwater.

Groundwater also has the potential to be contaminated through artificial recharge. Various cooperating entities have the ability to recharge the local groundwater basin through surface water spreading at various locations in the project area. If the water being recharged is significantly higher in TDS than levels currently in the receiving basin, then recharge activities can adversely affect the groundwater quality.

The 2005 Project Alignment had the potential to affect groundwater in only the San Bernardino Basin Area. The currently proposed RCF Realignment will also connect to the Chino Groundwater Basin; thus each of these two basins is discussed separately in the following sections.

San Bernardino Groundwater Basin

Groundwater Quality of the San Bernardino Groundwater Basin

The San Bernardino Groundwater Basin (Basin Area) serves as the primary source of water supply for the cities of Riverside, Redlands, Loma Linda, Highland, San Bernardino and adjacent areas. TDS levels throughout the San Bernardino Groundwater Basin range from below 200 mg/l near the eastern mountains and Lytle Creek areas to over 600 mg/l in the Colton area.

Data from wells in the Basin Area indicate the local groundwater resource has been contaminated by manufacturing and military activities. Trichloroethylene (TCE) and tetrachloroethylene (PCE), both volatile organic priority pollutants, were first discovered in the Basin Area in 1981. A third chemical used in the production of solid rocket fuel, perchlorate, has impacted groundwater supplies in the Redlands area. Nitrates (NO3) and a pesticide, dibromochloropropane (DBCP), have been found in groundwater in the Basin Area; the origin attributed to former agricultural activity.

Extensive groundwater quality sampling and analysis is ongoing in the Basin Area to quantify and better understand groundwater contamination in the project area. As a result, five pollution

[1] U.S. Department of the Interior, Geological Survey. USGS Professional Paper: Chemistry and Isotopic Composition of Ground Water Along a Section near the Newmark Area, San Bernardino County, California. Prepared by John A. Izbicki, Wesley R. Danskin, and Gregory O. Mendez. 1998. (As referenced in the 2005 PEIR.)

plumes have been identified (see **Figure 4.7-1, Groundwater Contamination Plumes** and **Figure 4.7-2, Existing Plumes in the San Bernardino Groundwater Basin Area**).

Newmark Plume and Muscoy Plume: The United States Environmental Protection Agency (EPA) has identified and designated two plumes within the identified "Newmark Groundwater Contamination" site, which consists of area-wide groundwater contamination underlying portions of the city of San Bernardino. The two groundwater plumes border Shandin Hills. On the east side of the site, a contaminated groundwater plume extends for 5 miles and is referred to as the Newmark Plume area. On the west side of Shandin Hills is a 4-mile long contaminated groundwater plume known as the Muscoy Plume area. Although the suspected disposal may have occurred as early as the 1940s, the problem was not discovered until a water supply monitoring program was instituted in 1980. The contaminated groundwater contains volatile organic compounds (VOCs) including TCE and PCE. (EPA) Treatment plants are operating to remove VOC contamination. A total of thirteen extraction wells produce on average approximately 26,000 AFY, which is treated at the four treatment plants. (SAWPA, pp. 179 – 180) At the present time, the performance of the remedies in place results in 100% capture of the contaminants from all three contaminated plumes. The Newmark Groundwater Site has an Institutional control in place to require that all new wells or new operating conditions go through a permitting process to prove that the existing EPA remedies would not be affected.[2]

Norton Air Force Base Plume: Located in the vicinity of the former Norton Air Force Base in the central part of the project area, this plume contains TCE and PCE contamination. The Air Force is conducting a clean-up operation for this plume consisting of extraction and filtration. A portion of this plume, with weaker concentrations, is extending off-base. The Air Force is remediating this weaker plume utilizing wellhead treatment at existing wells, where necessary, through an agreement with the City of Riverside.

Redlands-Crafton Plume**:** The Redlands-Crafton Plume is a six-mile long plume of VOC and ammonium perchlorate contamination, which was first detected in the early 1980s. Approximately 46 drinking water wells have been affected. A number of well head treatment units and treatment plants to remove these contaminants are being operated by the cities of Redlands, Loma Linda and Riverside. (SAWPA, pp. 180 – 181)

Burlington Northern and Santa Fe (BNSF) Plume**:** Located under the BNSF rail yard in the city of San Bernardino, this plume consists of TCE and PCE contamination. Limited on-site groundwater treatment using aeration, separation and evaporation (air sparging) is being conducted at the Burlington Northern and Santa Fe Rail yard site. Off-site migration is being observed and is not currently being remediated.

All of the above pollution plumes are currently undergoing remediation in accordance with state and federal laws.

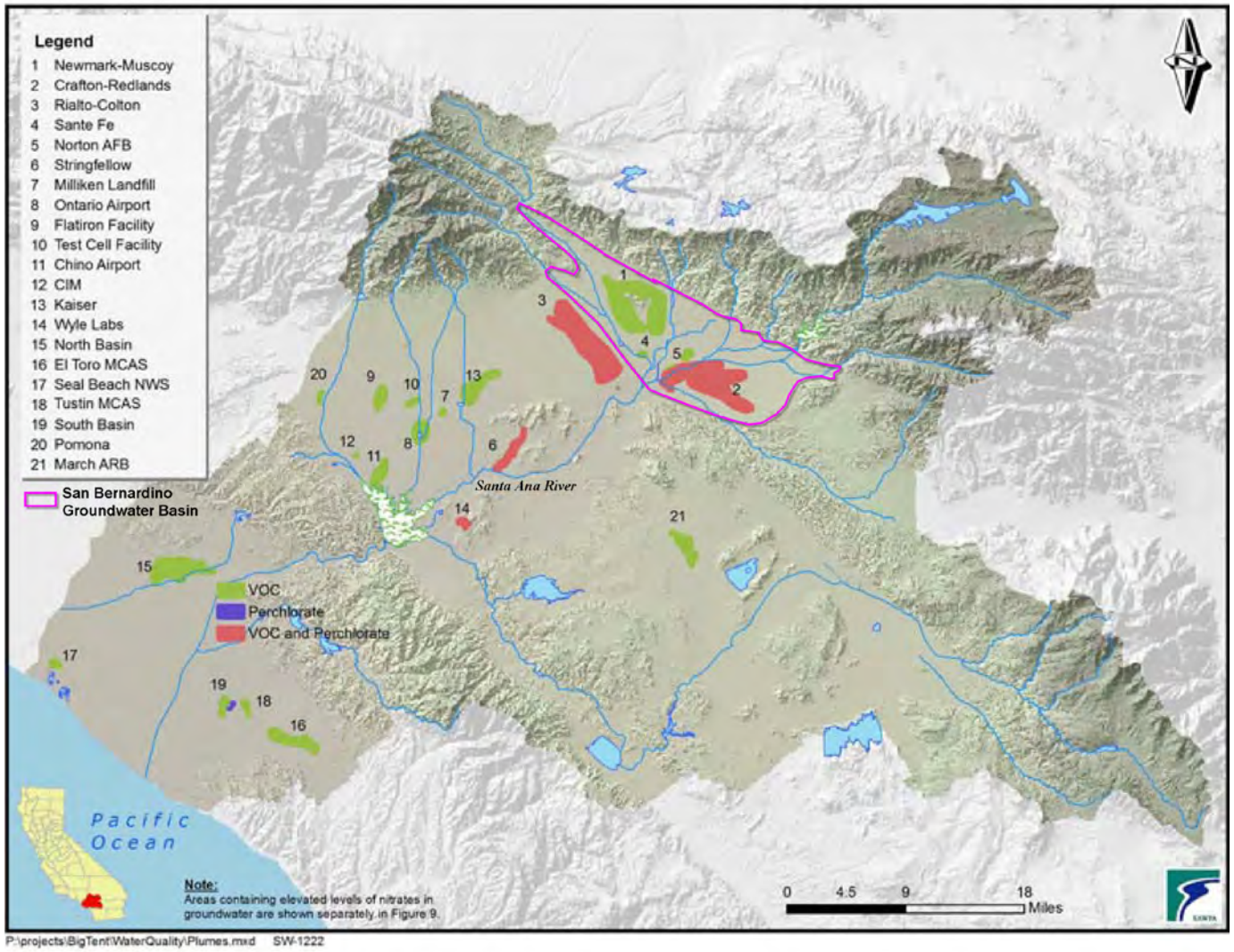
Several other smaller groundwater pollution plumes associated with hazardous materials sites compiled pursuant to Government Code Section 65962.5 are present along the alignment of the RCF realignment project within the Basin Area. Impacts related to these smaller plumes are addressed in the Section 4.8 (Hazards and Hazardous Materials) of this SEIR.

Imported Water Quality

Water from the State Water Project is currently recharged in the Basin by the San Bernardino Valley Municipal Water District (SBVMWD). Grab Samples[3] showed that TDS levels at the Devil Canyon Afterbay, where State Water Project water would most likely be delivered for this project, ranged between 225 and 325 milligrams per liter (mg/l) during the 12-month period between October 2008 and September 2009 (DWR). Overall, State Water Project water at the Devil Canyon Afterbay averages 250 mg/l. (MWD Regional UWMP, p. IV-3)

[2] United States Environmental Protection Agency Region IX, comment letter regarding Draft Environmental Impact Statement for the Riverside-Corona Feeder Project, Bunker Hill Groundwater Basin, San Bernardino and Riverside Counties, California (CEQ #20110017), April 5, 2011.

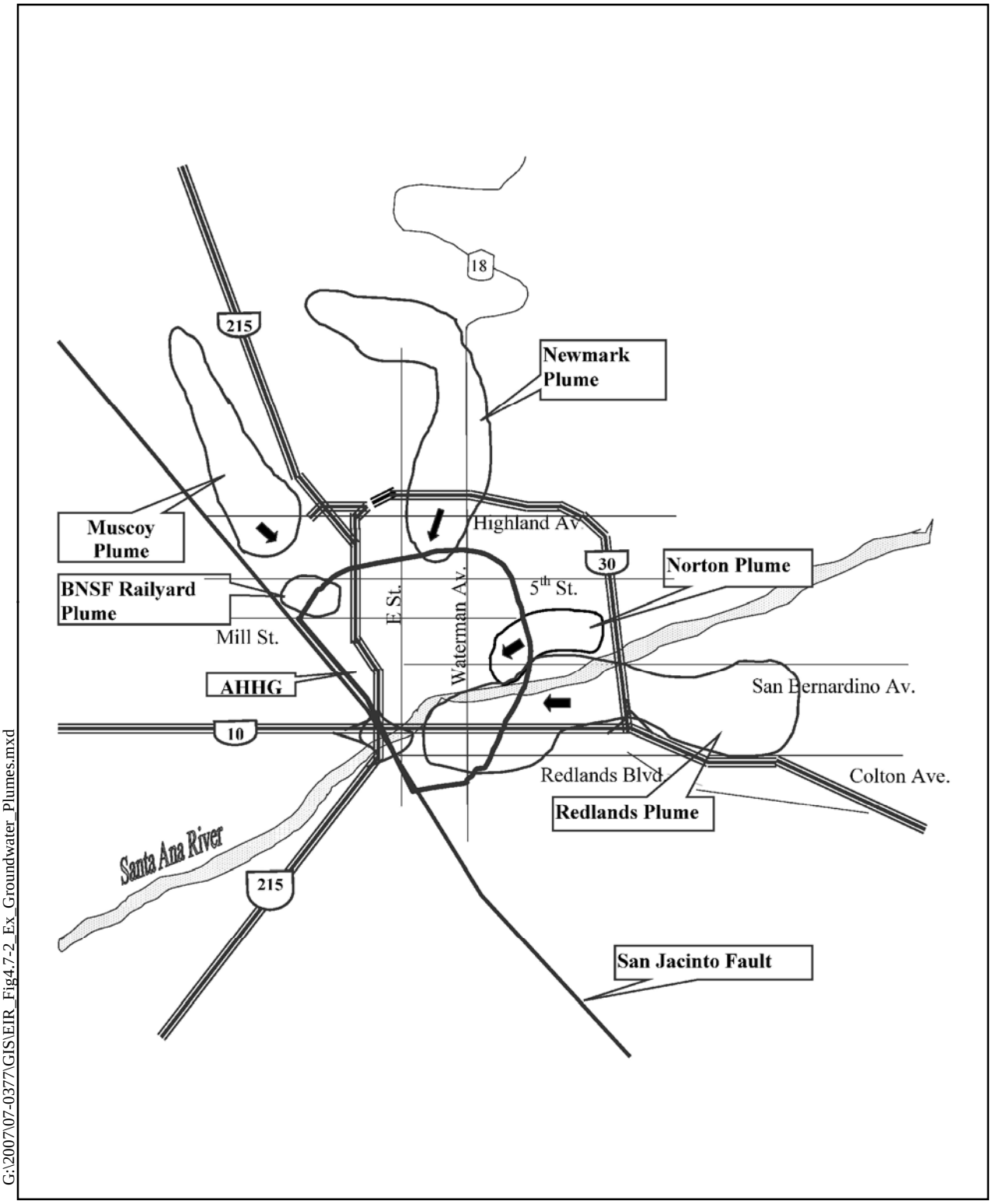
[3] A grab sample is a single sample chosen in a given matrix (usually natural water) to represent conditions at a specific location, depth and time. (DWR)



G:\2007\07-0377\GIS\EIR_Groundwater_Contam.mxd

Source: SAWPA, 2006

Figure 4.7-1
Groundwater Contamination Plumes



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N
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S

Not to Scale

Figure 4.7-2
Existing Pollution Plumes in the San Bernardino Groundwater Basin Area

Chino Groundwater Basin

Groundwater Quality of the Chino Groundwater Basin

The groundwater quality in Chino Basin is generally very good, with better groundwater quality found in the northern portion of Chino Basin where recharge occurs. Between 2001 and 2006, the maximum TDS concentration within the Chino Basin ranged from less than 75 mg/L to 3,900 mg/L with an average and median concentration of approximately 730 mg/l and 530 mg/L, respectively. The highest concentrations are located south of State Route 60 where impacts from agriculture are the highest. The impacts of agriculture on TDS in groundwater are primarily caused by fertilizer use on crops, consumptive use, and dairy waste disposal. (OBMP 2006 State of the Basin Report, p. 4-5)

Other constituents that have the potential to impact groundwater quality from a regulatory or Basin Plan standpoint include certain VOCs, arsenic, and perchlorate. There are a number of point source releases of VOCs in Chino Basin. These are in various stages of investigation or cleanup. There are also known point source releases of perchlorate (MVSL area, Stringfellow, *et cetera*) as well as what appears to be non-point source related perchlorate contamination from currently undetermined sources. Arsenic at levels above the WQS appears to be limited to the deeper aquifer zone near the city of Chino Hills. Total chromium and hexavalent chromium, while currently not a groundwater issue for Chino Basin, may become so, depending on the promulgation of future standards. (OBMP 2006 State of the Basin Report, p. 4-16)

Areas with either significant irrigated land use or dairy waste disposal histories overlie groundwater with elevated nitrate concentrations. The primary areas of nitrate degradation were formerly or are currently overlain by citrus in the northern parts of the Chino-North Management Zone (MZ) and dairy in the southern parts of the Chino-North MZ, the Chino-South MZ, the Chino-East MZ, and the Prado Basin MZ (PBMZ) Nitrate concentrations in groundwater have increased slightly or remained relatively constant in the northern parts of the Chino-North MZ over the period ranging from 1960 to the present, but rarely exceed 10 mg/L (as nitrogen). Over the same period, nitrate concentrations have increased significantly in the southern parts of the Chino-North MZ, the Chino-South MZ, the Chino-East MZ, and the Prado Basin MZ where land use was progressively converted from irrigated/non-irrigated agricultural land to dairies, and nitrate concentrations typically exceed the 10 mg/L maximum contaminant level (MCL) and frequently exceed 20 mg/L. (OBMP 2006 State of the Basin Report, p. 4-6)

The other constituents that have the potential to impact groundwater quality are volatile organic compounds (VOCs), arsenic, manganese, and perchlorate. In addition, radon and gross alpha radiation, while naturally-occurring, are found above their MCLs in Chino Basin. Chromium and hexavalent chromium may be problematic, depending on the promulgation of future standards. (DYYP, p. 3-10)

The following groundwater contamination plumes have been identified within the Chino Basin.

Chino Airport**:** Located approximately four miles east of the city of Chino and six miles south of Ontario International Airport, and occupying an area of about 895 acres. Analytical results from groundwater sampling revealed the presence of VOCs above MCLs in six wells downgradient of Chino Airport. (DYYP, p. 3-15)

California Institute for Men (CIM): Located in Chino and bounded on the north by Edison Avenue, on the east by Euclid Avenue, on the south by Kimball Avenue, and on the west by Central Avenue. Analytical results from groundwater sampling indicated that the most common VOCs detected in groundwater underlying CIM were PCE and TCE. Other VOCs detected included carbon tetrachloride, chloroform, 1,2-DCE, bromodichloromethane, 1,1,1-trichloroethane (1,1,1-TCA), and toluene. (DYYP, p. 3-15 and 3-16)

General Electric Flatiron Facility: Occupied the site at 234 East Main Street, Ontario, California from the early 1900s to 1982. Analytical results from groundwater sampling indicated that VOCs and total dissolved chromium were the major groundwater contaminants. The most common VOC detected at levels significantly above its MCL is TCE. Other VOCs periodically detected, but commonly below MCLs, included PCE, toluene, and total xylenes. (DYYP, p. 3-16)

The General Electric Company's Engine Maintenance Center Test Cell Facility (Test Cell Facility)**:** Located at 1923 East Avon, Ontario, California. Primary operations at the Test Cell Facility include the testing and maintenance of aircraft engines. Analytical results from investigations indicated that the most common and abundant VOC detected in groundwater beneath the Test Cell Facility was TCE. Other VOCs detected included PCE, *cis*-1,2-DCE, 1,2-dicholoropropane, 1,1- DCE, 1,1-DCA, benzene, toluene, and xylenes, among others. (DYYP, p. 3-16)

Kaiser Steel Fontana Steel Site**:** In July of 1983, Kaiser initiated a groundwater investigation that revealed the presence of a plume of degraded groundwater under the facility. In August of 1987, the RWQCB issued Cleanup and Abatement Order Number 87-121, which required additional groundwater investigations and remediation activities. The results of these investigations showed that the major constituents of the release to groundwater were inorganic dissolved solids and low molecular weight organic compounds. (DYYP, p. 3-17)

Mid-Valley Sanitary Landfill (MVSL)**:** A Class III Municipal Solid Waste Management Unit located at 2390 North Adler Avenue in the city of Rialto. VOCs and perchlorate have been detected in groundwater beneath and downgradient from the MVSL. The most common and abundant VOCs in groundwater are PCE, 1,1-DCA, and 1,1-DCE. TCE, cis-1,2-DCE, 1,2-DCA, vinyl chloride, and benzene also have been detected. Perchlorate has been detected in the Rialto-Colton and Chino Basins. (DYYP, p. 3-17)

Milliken Sanitary Landfill (MSL)**:** A Class III Municipal Solid Waste Management Unit located near the intersections of Milliken Avenue and Mission Boulevard in the city of Ontario. Analytical results from groundwater sampling indicated that VOCs are the major constituents of the release. The most common VOCs detected were TCE, PCE, and dichlorodifluoromethane.

Other VOCs detected above MCLs included vinyl chloride, benzene, 1,1-dichloroethane, and 1,2-dichloropropane. (DYYP, pp. 3-3-17 and 3-18)

Municipal Wastewater Disposal Ponds**:** Treated municipal wastewater has been disposed into ponds located near the current IEUA Regional Plant 1 (RP1), located in south Ontario, and the former Regional Plant 3 (RP3), located in south Fontana. The areas downgradient of these recharge ponds typically have elevated TDS and nitrate concentrations. Contaminant plumes emanating from these ponds have never been fully characterized. (DYYP, p. 3-18)

Upland Sanitary Landfill**:** The closed and inactive Upland Sanitary Landfill (USL) is located on the site of a former gravel quarry at the southeastern corner of 15th Street and Campus Avenue in the city of Upland. Analytical results from historic groundwater sampling indicate that VOCs are the major constituents of the organic release. The most common VOCs detected above MCLs are dichlorodifluoromethane, PCE, TCE, and vinyl chloride. Other VOCs that have been periodically detected above MCLs include methylene chloride, *cis*-1,2-DCE, 1,1-DCA, and benzene. (DYYP, p. 3-18)

Un-named VOC Plume – South of the Ontario Airport**:** A VOC plume containing primarily TCE exists south of the Ontario Airport. The plume extends approximately from State Route 60 on the north and Haven Avenue on the east to Cloverdale Road on the south and South Grove Avenue on the west. (DYYP, p. 3-19) The plume was largely consumed by production at the Chino-1 Desalter well field. The remarkable decrease in plume size is largely a result of the assumed absence of a VOC source accompanied by desalter pumping and treatment. (DYYP, p. 7-6)

Stringfellow NPL Site**:** One facility in the Chino Basin is on the current National Priorities List (NPL) of Superfund sites. The Stringfellow site is located in Pyrite Canyon, north of Highway 60, near the community of Glen Avon, in Riverside County (Figure 3-21). Groundwater at the site contains various VOCs, perchlorate, N-nitrosodimethylamine (NDMA), and heavy metals. Soil in the original disposal area is contaminated with pesticides, PCBs, sulfates, and heavy metals. Contamination at the Stringfellow site has been addressed by cleanup remedies described in four U.S. Environmental Protection Agency (USEPA) Records of Decision. (DYYP, p. 3-19)

Several other smaller groundwater pollution plumes associated with hazardous materials sites compiled pursuant to Government Code Section 65962.5 are present along the alignment of the RCF realignment project within the Chino Basin. Impacts related to these smaller plumes are addressed in the Section 4.7 (Hazards and Hazardous Materials) of this SEIR.

4.7.2 Summary of the 2005 Certified PEIR for the Riverside-Corona Feeder Project

Design Considerations/Avoidance

The 2005 Project Alignment did not identify specific locations for wells or recharge spreading; thus allowing for flexibility in operating scenarios to best limit adverse impacts to groundwater. Several well fields (located primarily within the AHHG) and possible spreading grounds were

modeled to help understand the relationships of the project to the Basin Area management system. Potential Significant Impacts/Environmental Consequences

Groundwater Quality was addressed in Section II-6 (pp. II-6-1 through II-6-10) of the 2005 Certified PEIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment), which are hereby incorporated by reference. The following discussion is a summary of the Groundwater Quality section of the 2005 PEIR:

Threshold: *Impacts to groundwater quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality in the Basin as a whole or for any individual pumper.*

The addition of water to the San Bernardino Groundwater Basin (Basin Area) through spreading and/or injection wells will not violate water quality standards or otherwise substantially degrade the water quality of the basin as a whole. By the nature of the project, no additional sources of contaminants such as TCE, PCE, DBCP and nitrates (NO_3) will be added by the RCF project. The imported water to be used for recharge comes from the State Water Project. Total dissolved solids (TDS) levels are a good indicator of the mineralized character and overall quality of groundwater. Existing TDS levels throughout the Basin Area range from below 200 mg/l near the eastern mountains and Lytle Creek areas to over 600 mg/l in the Colton area. TDS levels at the Devil's Canyon Afterbay, where State Water Project water would most likely be delivered, ranged between 239 and 373 milligrams per liter (mg/l) and averaged 312 mg/l during the 12-month period between July 2002 and June 2003. Therefore, the recharge water to be used for this project is generally of an equal or better quality than that of the receiving water resulting in, through dilution, water within the Basin Area of generally equal or higher quality than presently exists. Therefore, no water quality standards will be exceeded by the proposed direct addition of the imported water. (2005 PEIR)

WMWD joined with the City of San Bernardino and other producers that could affect the effectiveness of inhibitor wells in preventing the spreading of volatile organics contamination to develop an Institutional Controls Groundwater Management Program (ICGMP). To respond to the City's concerns about the RCF Project substantially and adversely affecting the movement of the contamination plumes in the Bunker Hill Basin, the MODPATH and MT3DMS models were run based on the same assumptions used for operations in the MODFLOW analysis.

MODPATH is a particle-tracking model that uses the output from MODFLOW to trace the path and rate of flow of water from recharge areas and from contaminant plumes within the Basin Area. The results of the particle-tracking analysis indicate that the Project related recharge and extraction accelerates groundwater movement from the recharge areas toward the increased area of production. This acceleration is consistent with the MODFLOW results which show increased water levels in the forebay, decreased levels in the Pressure Zone and a general increase in the slope of the groundwater gradient.

Particle-tracking from within the contaminant plumes is performed in order to determine if the plume migrates differently with the RCF Project in operation than without. Results of particle-tracking from the Newmark and Muscoy plumes indicate that the path and rate of the PCE is the

same under RCF Project operation as it is under No Project conditions. In both cases the particles from each plume were shown to be pumped from the barrier wells.

MT3DMS is a solute transport model used to simulate groundwater quality for PCE, TCE, perchlorate, TDS and nitrate. The transport model confirms the conclusions of the particle-tracking analysis regarding effectiveness of the Newmark and Muscoy barriers. In addition, it is capable of detecting differences in the rate at which clean-up occurs and determines the extent of lateral movement of the plume.

Plume boundaries for the Newmark and Muscoy plumes are shown on **Figures 4.7-1** and **4.7-2** using the MCL of 5 µg/l. The analysis shows that the MCL plume boundary did not move past the barrier wells under the No Project condition or the operating scenario for the RCF Project. This confirms the conclusions reached through the particle-tracking analysis.

Due to the increased groundwater gradient resulting from 2005 Project Alignment Alternative recharge and extraction, the rate of subsurface flow is increased and the Newmark and Muscoy plumes are cleaned up more quickly under RCF Project conditions than under No Project conditions.

Lastly, the transport model analysis shows the area or footprint of the contaminated area and the extent to which the plume may migrate laterally as a result of 2005 RCF Project operations. The footprint of the Newmark and Muscoy plumes was smaller at the end of the forecast period for the RCF Project operation than for the No Project condition. The average area of the plume over the 39 year forecast period was 1941 acres under No Project conditions and 1,925 acres under RCF Project operations.

The transport model results indicate that operation of 2005 RCF Project could result in a small lateral movement of the Newmark and Muscoy plumes which is different than for the No Project condition. The model predicts that such differences in movement would cause five additional wells for a brief period of time to degrade to values greater than 5 µg/l of PCE, and 7 additional wells to improve in quality to less than 5 µg/l (see Appendix F of the 2005 PEIR, Table 5).

Figures 17(a) through 17(e), Appendix F of the 2005 PEIR, show the model-predicted PCE concentrations through time for the five wells that degrade (see Figure 18 for well locations). For example, Figure 17(a) shows that the PCE concentration at Well 1N/4W-16E01 would increase from 4.9 µg/l to 5.5 µg/l (slightly above the 5 µg/l MCL) in 2006 (hydrologic year 1967) and from 4.7 µg/l to 5.1 µg/l in 2008 (hydrologic year 1969) due to Project implementation. Seven wells that would be contaminated under No Project Condition would avoid contamination due to Project implementation.

The addition of water to the Basin Area through spreading and/or injection wells will not violate water quality standards or otherwise substantially degrade the water quality of the basin as a whole, as discussed in the first paragraph under this Threshold on page 4.7-10 and 4.7-23. No additional sources of contaminants such as TCE, PCE, DBCP and nitrates (NO_3) will be added by the RCF project. The imported water to be used for recharge comes from the State Water Project.

The indirect effect of the proposed replenishment and extraction of water to/from the Basin Area is its potential effect on existing groundwater pollution plumes. Water added to the Basin Area (recharge) and extracted from the Basin Area has the potential to move the polluted groundwater depending on timing and location of recharge or extraction. For example, the project could alter the direction of a pollution plume and cause contamination in an individual well that did not previously exist. If an existing well is used as an extraction point for the RCF project, contamination might occur sooner than it would have without the project, but over time, contamination would likely have occurred at any given existing well with or without the project.

Although project-related recharge and/or extraction may cause changes in the pollution plumes, it is not possible to predict where, when or to what extent those changes might occur due to the programmatic level of the project operations. Future unknowns such as natural recharge and extraction unrelated to this project would also have potential impacts on pollution plumes. The Draft 2005 PEIR determined that due to the lack of specific details concerning the amount and location of pumping and recharge activities associated with the project, it would be speculative at that time to try to predict how significant these activities may be for the water quality of the basin. Mitigation measures MM GWQ 1 and 2 were developed to monitor and evaluate future operations.

Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in MM GWQ 1, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR.

Since the location and number of new wells was not known, the direct potential siting impacts of specific new wells (e.g., soils, biological resources, cultural resources) was not addressed in the 2005 PEIR. The potential impacts that new well sites might have on the environment, including water quality through the movement of pollution plumes, will be addressed through normal well permitting procedures, implementation of mitigation measures, or subsequent CEQA compliance.

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were adopted in the 2005 PEIR to reduce potentially significant impacts related to groundwater quality:

MM GWQ 1: Prepare operating strategies to be tested using the most current versions of the groundwater flow and groundwater quality model(s) available at the time. An operating plan consistent with any overall management plan adopted for the Basin Area shall be developed prior to commencing replenishment activities for the project that defines parameters of replenishment and extraction based on groundwater model(s) as evaluative tool(s).

MM GWQ 2: As described in **MM GWQ 1**, existing groundwater flow and groundwater quality model(s) shall be used to predict the effects of project operations pursuant to the operating plan developed as a requirement of **MM GWQ 1**. If the model(s) suggest that the replenishment and pumping regime of the proposed project operation would result in significant

impacts, the project operation shall be modified to reduce impacts or appropriate mitigation measures shall be developed as part of a subsequent CEQA compliance document (i.e. tiered negative declaration, EIR addendum, Supplemental EIR or Subsequent EIR). Typical mitigation measures that may be implemented to improve water quality may include but are not limited to:

- Appropriate Use. Contaminated water could be utilized for purposes that would allow or require lower water quality standards.
- Blend. Water that has poor quality can be blended and diluted until water quality standards are achieved.
- Move (Avoid). Choose another production area.
- Careful Management. Operate wells in a manner that will prevent or delay contamination. This may include installation of barrier wells or avoidance of strategies that would result in acceleration of the movement of contaminated water towards existing wells.
- Wellhead Treatment. Wellhead treatment can be utilized to bring water to acceptable water quality levels.

As stated above, subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in MM GWQ 1, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Thus, MM GWQ 1 was accomplished and is no longer needed to mitigate potential impacts of the RCF realigned pipeline.

Additionally, WMWD has been participating in ongoing management efforts with the Basin Area Technical Advisory Committee (TAC) which will assure that this project is included and managed to avoid adverse impacts to water levels in the Basin Area. See page 4.6-33. The ongoing monitoring and adaptive management recommended by **MM GWQ 2** is still necessary, but has been revised to include WMWD's involvement with the TAC. See pages 4.7-27 and 28 for the currently revised mitigation measure.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the 2005 Project Alignment found that direct project-related environmental effects to groundwater quality will be **less than significant** due to the quality of the water being used for recharge being similar or better than the quality of the receiving water. No mitigation measures are required.

Indirect project-related environmental effects to groundwater quality through changes in the location and/or speed of migration of pollution plumes could not be addressed at that time due to the lack of specific operating information. Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in MM GWQ 1, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Future unknowns such as natural recharge and extraction unrelated to this project would also have potential impacts on pollution plumes. The 2005 PEIR determined that due to the lack of specific details concerning the amount and location

of pumping and recharge activities associated with the project, it would be speculative at that time to try to predict how significant these activities may be for the water quality of the basin. Although a specific conclusion as to the potentially significant indirect groundwater quality impacts associated with pollution plumes would be speculative at this time, future studies, plans and modeling shall conform to §15168(c) of the CEQA Guidelines which states, "Subsequent activities in the program must be examined in the light of the PEIR to determine whether an additional environmental document must be prepared." This may include, for example, sufficient hydrology studies, groundwater modeling or coordinated studies with other agencies with jurisdiction over regional groundwater and related surface resources, in order to evaluate and address all potentially significant direct, indirect and cumulative impacts of the proposed actions under CEQA. The ongoing monitoring and adaptive management recommended by **MM GWQ 2** is necessary.

The above-listed mitigation measure shall be implemented as operating actions associated with this project.

4.7.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The impacts and findings discussed in the 2005 PEIR related to groundwater quality are applicable to both the 2005 Project Alignment and the Realignment Alternative, (Jackson Street or Monroe Street options) as appropriate. The proposed realignment project will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR. The analysis of groundwater resources contained within the 2005 PEIR does not specifically address the proposed realignment. However, the analysis conducted in this section of the SEIR/EIS addresses changed conditions since the 2005 PEIR was completed; and evaluates an alternate well field location for the Riverside-Corona Feeder Project, that is included in the vicinity of the Central Feeder Connection component of the Realignment Alternative with Additional Connections (Preferred Alternative).

Thresholds of Significance

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

- violate any water quality standards or waste discharge requirements.
- otherwise substantially degrade water quality.

However for the purposes of the following analysis of potential groundwater quality impacts, these two thresholds have been combined into a single threshold more precisely related to the proposed project that states:

Impacts to groundwater quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality in the Basin as a whole or for any individual pumper.

If a given well currently meets state drinking water standards then, for purposes of impacts to "individual pumpers," the appropriate threshold will be a well that experiences a change in groundwater quality, due to the project, and no longer meets drinking water standards. California's drinking water standard is 1,000 mg/L MCL for TDS, 10 mg/L MCL for Nitrate reported as Nitrogen, and 45 mg/L MCL for Nitrate measured as NO_3.

The Chino Basin was not previously connected directly to the proposed RCF alignment therefore, no thresholds specifically related to the Chino Basin in the 2005 PEIR. Potential adverse water quality impacts to any water allocated to the RCF from the Chino desalter have been evaluated in the *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume I* and the Peace II SEIR, see page 4.7-31.

Related Regulations

Santa Ana River Basin Plan

The Water Quality Control Plan for the Santa Ana Basin (SARWQCB Basin Plan) sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the Basin Plan is designed to accomplish the following:

- Designate beneficial uses for surface and groundwaters;
- Set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy;
- Describe implementation programs to protect the beneficial uses of all waters within the region; and
- Describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

The Basin Plan incorporates by reference all applicable State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) plans and policies.

Beneficial uses are officially designated for all surface and groundwater resources to identify the various ways each particular surface water or groundwater sub-basin can be used for the benefit of people and/or wildlife. Examples include drinking, swimming, industrial, and agricultural

water supply, and the support of fresh and saline aquatic habitats. Four beneficial uses have been assigned to groundwater resources within the groundwater management zones within which the RCF Feeder project are located – municipal and domestic, agricultural, industrial, and industrial process supply (**Table 4.7-A**). Water quality objectives for the groundwater management zones within which the RCF Feeder project are located are shown in **Table 4.7-B**. Implementation of the RCF will add State Water Project Water to the Basin Area. The RWQCB Objectives range from 260mg/l to 330mg/L for the Basin Area (Bunker Hill - A, Bunker Hill - B and Lytle).

Table 4.7-A
RWQCB (Santa Ana Region) Beneficial Uses for the Groundwater Basins Within the Project Area

Water Body	Beneficial Uses
Upper Santa Ana River Basin Groundwater Management Zones	
Bunker Hill - A	MUN, AGR, IND, PROC
Bunker Hill - B	MUN, AGR, IND, PROC
Lytle	MUN, AGR, IND, PROC
Rialto	MUN, AGR, IND, PROC
Colton	MUN, AGR, IND, PROC
San Timoteo	MUN, AGR, IND, PROC
Yucaipa	MUN, AGR, IND, PROC
Chino – North "maximum benefit"	MUN, AGR, IND, PROC
Chino – North (Chino 1) "antidegradation"	MUN, AGR, IND, PROC
Chino – North (Chino 2) "antidegradation"	MUN, AGR, IND, PROC
Chino – North (Chino 3) "antidegradation"	MUN, AGR, IND, PROC
Chino – East	MUN, AGR, IND, PROC
Chino – South	MUN, AGR, IND, PROC
Middle Santa Ana River Basin Groundwater Management Zones	
Arlington	MUN, AGR, IND, PROC
Riverside – A	MUN, AGR, IND, PROC
Riverside – B	MUN, AGR, IND, PROC
Riverside – C	MUN, AGR, IND, PROC
Riverside – D	MUN, AGR, IND, PROC
Riverside – E	MUN, AGR, IND, PROC
Riverside – F	MUN, AGR, IND, PROC
Temescal	MUN, AGR, IND, PROC

Definitions	
MUN	Waters used for community, military, municipal or individual water supply systems. Uses may also include drinking water supply.
AGR	Waters are used for farming, horticulture or ranching. Uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
IND	Waters for industrial service supply. These uses do not depend primarily upon water quality, and may include mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.
PROC	Waters for industrial process supply. Uses are for industrial activities that are dependent upon water quality. Uses may include process water supply and all uses of water related to product manufacture or food preparation.

Source: SARWQCB Basin Plan, Table 3-1

Table 4.7-B
RWQCB (Santa Ana Region) Water Quality Objectives

	Water Quality Objectives (milligrams/liter)					
	TDS	**Hard**	**Na**	**Cl**	**NO_3-N**	**SO_4**
Upper Santa Ana River Basin Groundwater Management Zones						
Bunker Hill - A	310	-	-	-	2.7	-
Bunker Hill - B	330	-	-	-	7.3	
Lytle	260	-	-	-	1.5	-
Rialto	230	-	-	-	2.0	-
Colton	410	-	-	-	2.7	-
San Timoteo "maximum benefit"	400	-	-	-	5.0	-
San Timoteo "antidegradation"	300	-	-	-	2.7	-
Yucaipa "maximum benefit"	370	-	-	-	5.0	-
Yucaipa "antidegradation"	320	-	-	-	4.2	-
Chino – North "maximum benefit"	420	-	-	-	5.0	-
Chino – North (Chino 1) "antidegradation"	280	-	-	-	5.0	-
Chino – North (Chino 2) "antidegradation"	250	-	-	-	2.9	-
Chino – North (Chino 3) "antidegradation"	260	-	-	-	3.5	-
Chino – East	730	-	-	-	10.0	-
Chino – South	680	-	-	-	4.2	-
Middle Santa Ana River Basin Groundwater Management Zones						
Arlington	980	-	-	-	10.0	-
Riverside – A	560	-	-	-	6.2	-
Riverside – B	290	-	-	-	7.6	-
Riverside – C	680	-	-	-	8.3	-
Riverside – D	810	-	-	-	10.0	-
Riverside – E	720	-	-	-	10.0	-
Riverside – F	660	-	-	-	9.5	-
Temescal	770	-	-	-	10.0	-

Source: SARWQCB Basin Plan, Table 4-1

Drinking Water Standards

Plans and specifications for the proposed water facilities are subject to review and approval by the California Department of Public Health, Division of Drinking Water and Environmental Management to insure that potable water distributed by the project will meet or exceed drinking water quality standards. Development of new wells within San Bernardino County will require a permit from the County of San Bernardino Department of Public Health, Division of Environmental Health Services. Well development design features required by the County Division of Environmental Health Services ensure that development of the wells will not increase the probability of aquifer contamination.

Design Considerations/Avoidance

As a part of the proposed project, WMWD shall cooperate and coordinate with other water agencies that replenish and extract water in the Basin Area so as not to interfere with other programs being implemented to manage and protect groundwater in the Basin Area, and, when possible, to assist in such programs. The well field in the vicinity of the Central Feeder Connection was added to the project in part to alleviate concerns raised by other water agencies using the Basin Area. Multiple possible extraction and replenishment locations allow for optimal operating scenarios to assure that recharge and extraction operations maintain or improve, to the extent possible, and do not exacerbate water level or water quality problems.

Potential Significant Impacts/Environmental Consequences

Threshold: *Impacts to groundwater quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality in the Basin as a whole or for any individual pumper. "Substantially degrade" for any individual pumper means that the project causes drinking water standards violations so more than: 1,000 mg/L MCL for TDS, 10 mg/L MCL for Nitrate reported as Nitrogen, and 45 mg/L MCL for Nitrate measured as NO_3.*

There are two groundwater basins to which this Threshold applies: the San Bernardino Groundwater Basin (Basin Area) and the Chino Groundwater Basin (Chino Basin). For ease of the reader, they are analyzed under separate headings, below. The Chino Basin discussion begins on page 4.7-30.

Operational Effects – San Bernardino Groundwater Basin

Basin-wide Effects

Project operations that could affect groundwater include spreading SWP water for recharge and extracting stored water when needed. Recharge would occur at one or more existing spreading basin. Extraction would occur from one of up to 20 new and/or existing wells. The 2005 PEIR analysis assumed all wells would be located in the vicinity of the AHHG. The current RCF Realignment Preferred Alternative (proposed Project) includes five new wells to be located within the Redlands-Crafton plume at the eastern end of the proposed Riverside-Corona Feeder Pipeline. The maximum capacity for each well is estimated to be 3,000 acre-ft/yr (total of 15,000 acre-ft/yr) based on local geohydrologic conditions.

Modeling Background and Existing Conditions

In order to provide an updated assessment of potential groundwater quality impacts due to the RCF project, current groundwater quality readings and further hydrologic analyses were completed by Geoscience Support Services, Inc. (Appendix F) that project groundwater quality based on current conditions regarding the availability and reliability of imported water and natural hydrological conditions.

Two modeling evaluations were prepared. The updated hydrologic analysis (2009 Geoscience) used the MODFLOW groundwater flow model of the San Bernardino Basin Area (Basin Area) Refined Basin Flow Model to evaluate water level changes for various project alternatives, all

assuming the Central Feeder Connection well field location. MODPATH particle tracking was utilized to evaluate potential impacts of the proposed project on remediation (i.e., cleanup) efforts by evaluating groundwater flow paths seepage velocities and travel times. The Refined Basin Solute Transport Model was used to simulate the groundwater quality for PCE (Newmark and Muscoy plumes), TCE (Norton and Redlands-Crafton plumes), and perchlorate in the Basin Area.

Additional groundwater modeling was performed by Geoscience in 2010 to address concerns regarding the potential impact of the RCF on the total dissolve solids (TDS) and nitrate-nitrogen concentrations in the Basin Area (2010a Geoscience).

A total of four predictive model runs was made using the Refined Basin Flow Model and Refined Basin Solute Transport Model to assess the potential impacts of the RCF on groundwater levels and water quality. These model runs are:

- Baseline Run (No Project)
- RCF Scenario 1 (Less Stressful Conditions)
- RCF Scenario 2 (Most Likely Conditions)
- RCF Scenario 3 (Most Stressful Conditions)

The RCF Scenarios includes two "bookend" scenarios (Scenarios 1 and 3) and one "most likely" scenario (Scenario 2). "Bookend" conditions are generally described as conditions that result from extraction and replenishment schedules that are likely to cause the most environmentally stressful conditions (Scenario 3) and conditions that are the least stressful (Scenario 1) than those encountered under the "most likely" scenario. Results from the Scenarios were compared to the Baseline Run. (No Project).

The "Baseline Run" for purposes of modeling is not considered the "existing condition baseline" per CEQA. The existing condition is different for every contaminant at every location throughout the Basin Area. **Table 4.7-B1** includes actual 2006 TDS and Nitrate levels for imported SWP water with additional 2008 data following the table. **Table 4.7-C** includes the RWQCB Water Quality TDS and Nitrate concentrations goals for the Bunker Hill and Lytle Management Zones of the Basin Area. This existing condition compared to the quality of the imported water to be spread via the Project is used to evaluate the overall basin-wide project impact. **Table 4.7-D and 4.7-E** include existing TDS and Nitrate levels at specific wells.

Table 4.7-C also compares the Regional Water Quality Control Board (RWQCB) goals and the projected RCF modeling Scenario results.

The "existing condition" of Basin Area operations is per the Western Judgment (see page 4.6-25) and other agreements between the parties and therefore, the existing condition is dynamic. The project will be in accordance with the Western Judgment which provides that extractions may be made in addition to those determined by the Judgment, pursuant to agreement between SBVMWD and WMWD. The Judgment further provides that nothing therein shall preclude SBVMWD, WMWD or any other party from exercising such rights as they may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of underground storage capacity of the Basin Area shall not interfere with any replenishment

program of the Basin Area. Thus, modeling the future "existing condition" based on the Judgment and other current agreements (Baseline Run) is an appropriate evaluative tool for a dynamic system.

The potential impact of the RCF project upon groundwater levels is discussed in Section 4.6 (Groundwater Levels) of this SEIR/EIS.

Basin-wide TDS and Nitrate Analysis

As per the analysis methodology used in the 2005 PEIR, impacts to basin-wide water quality will be less than significant if the quality of the water being imported and spread into the basin is of equal or better quality than the existing water quality of the Basin Area. The imported water to be used for recharge comes from the State Water Project (SWP). TDS levels are a good indicator of the mineralized character and overall quality of groundwater. TDS levels at the Devil's Canyon Afterbay, where State Water Project water would most likely be delivered, ranged between 110 and 299 mg/L between January and December 2006, and averaged 181 mg/L during that 12-month period, as shown in **Table 4.7-B1**, below. Ambient TDS levels in 2006 throughout the Basin Area range from 230 mg/L in the Lytle Management Zone to 330 mg/L in the Bunker Hill – A Management Zone. (2008 Wildermuth).

Table 4.7-B1
2006 State Water Project Water Quality Data

Month	TDS	Nitrates
Jan	299	0.87
Feb	219	0.78
Mar		0.79
Apr	157	0.54
May	139	0.40
Jun	110	0.25
Jun	162	0.42
Aug	172	0.30
Sep		0.33
Oct	169	0.43
Nov	171	0.58
Dec	208	0.78
Average	181	0.54

Source: DWR SWP Operations Data, 2006

More current sampling data for TDS indicates that concentrations ranged between 225 and 325 milligrams per liter (mg/L) during the 12-month period between October 2008 and September 2009 (DWR). Overall, State Water Project at the Devil Canyon Afterbay averages 250 mg/l. (MWD Regional UWMP, p. IV-3). Therefore, the SWP recharge water to be used for this project is generally of an equal or better quality than that of the receiving groundwater in the Basin Area resulting in, through dilution, groundwater within the Basin Area of generally equal or higher quality than presently exists.

In addition, the RWQCB Water Quality Objectives for TDS are 310 mg/L for Bunker Hill-A, 330 mg/L for Bunker Hill-B, and 260 mg/L for Lytle Management Zones, see **Table 4.7-C.** Both the current ambient TDS levels and the SWP imported water averages are below the RWQCB objectives, therefore basin-wide water quality impacts based on TDS levels are less than significant for the RCF Realignment Project.

Nitrate levels are also a concern from a basin-wide perspective. Nitrate levels at the Devil's Canyon Afterbay, where State Water Project water would most likely be delivered, ranged between 0.25 and 0.87 mg/L between January and December 2006, and averaged 0.54 mg/L during that 12-month period, as shown in **Table 4.7-B1**, above. Current ambient Nitrate-Nitrogen levels throughout the Basin Area range from 2.7 mg/L in the Lytle Management Zone to 5.4 mg/L in the Bunker Hill – B Management Zone. (2008 Wildermuth). Therefore, the SWP recharge water to be used for this project is much better quality with respect to nitrates than that of the receiving groundwater in the Basin Area resulting in, through dilution, groundwater within the Basin Area of generally equal or higher quality than presently exists.

The RWQCB Water Quality Objectives for nitrates (NO_3) are 2.7 mg/L for Bunker Hill-A, 7.3 mg/L for Bunker Hill-B, and 1.5 mg/L for Lytle Management Zones, see **Table 4.7-C.** The current water quality does not meet these objectives in all locations, but the imported water which will be recharged through the RCF Realignment Project is well below the RWQCB objectives, therefore basin-wide water quality impacts based on nitrate levels are less than significant for the RCF Realignment Project.

To further evaluate the proposed Project's potential to change groundwater quality basin-side, Geoscience prepared a report in 2010 using the Refined Basin Solute Transport Model (RBSTM) to evaluate water quality changes for a Baseline Run (No Project) and RCF conjunctive use scenarios (Baseline Run (No Project) and RCF Scenarios 1 through 3).

It should be noted that, the RBSTM is a useful tool for evaluating water levels and water quality of the aquifer systems. However, it is a simplified approximation of a complex hydrogeologic system. The accuracy of model predictions is dependent on the assumptions used for the model prediction. More conservative mass loading assumptions were used for modeling of the TDS and nitrate-nitrogen, including:

- Local runoff generated from precipitation from urban areas may have an increase in TDS of 250 mg/L,
- Salt concentration due to evaporation should be considered, and

- Return flows should have higher concentrations of TDS and nitrate-nitrogen than ambient concentrations due to salt concentration through evapotranspiration.

These conservative mass-loading assumptions may not represent actual conditions due to the fact that these mass loading assumptions have not been calibrated to historical conditions. The model simulations were not expected to predict the future TDS and nitrate-nitrogen concentrations with a high degree of accuracy. Rather, they were intended to allow relative comparisons between the Baseline Run (No Project) and RCF conjunctive use scenarios to simulate the relative change that Project operations could have on the Basin Area.

TDS concentrations in Year 2032 under Baseline Run (No Project) conditions are projected to be 463 milligrams per liter (mg/L), 346 mg/L and 274 mg/L for the Bunker Hill-A, Bunker Hill-B and Lytle Management Zones, respectively. The model predicted TDS concentration would be the same or decrease by 1 to 2 mg/L under the RCF Scenarios in the Bunker Hill-A, Bunker Hill-B, and Lytle Management Zones. The 2032 TDS concentrations for the Baseline Run and the RCF Scenarios are greater than the RWQCB Water Quality Objectives for Bunker Hill-A (310 mg/L), Bunker Hill-B (330 mg/L), and Lytle (260 mg/L) Management Zones, see **Table 4.7-C**, but as stated above, the RBSTM was not calibrated to reflect absolute values but rather to show that projected conditions would not worsen the basin-wide groundwater quality.

The RBSTM predicted nitrate-nitrogen concentrations in year 2032 under Baseline Run (No Project) conditions would be 4.9 mg/L, 5.2 mg/L and 2.8 mg/L for the Bunker Hill-A, Bunker Hill-B and Lytle Management Zones, respectively. The model predicted nitrate-nitrogen concentrations would increase by 0.1 mg/L under the RCF Scenario 1 (Less Stressful Condition) in the Bunker Hill-A Management Zone. The model predicted nitrate-nitrogen concentrations for all other RCF Scenarios and all three Management Zones would be the same or decrease by 0.1 mg/L compared to the Baseline Run The 2032 nitrate-nitrogen concentrations for the Baseline Run and the three RCF Scenarios are greater than the RWQCB Water Quality Objectives for Bunker Hill-A (2.7 mg/L) and Lytle (1.5 mg/L) Management Zones, see **Table 4.7-C,** but as stated above, the RBSTM was not calibrated to reflect absolute values but rather to show that projected conditions would not substantially worsen the basin-wide groundwater quality. The Bunker Hill-B Management Zone RWQCB objective concentration is 7.3 mg/L and none of the modeled scenarios exceed this.

Therefore, impacts to basin-wide water quality will be **less than significant** because the quality of the SWP water being imported and spread into the Basin Area is of equal or better quality than the existing ambient water quality of the Basin Area; RWQCB Water Quality Objectives are not exceeded as a result of the project, even though current conditions may exceed these objectives; and there is no significant adverse change that results from the Project operations based on modeled comparisons to a Baseline Run.

Table 4.7-C
Comparison of RWQCB (Santa Ana Region) Water Quality Objectives and Modeling Results for TDS and Nitrates/Nitrogen

Upper Santa Ana River Basin Groundwater Management Zones	Goal [mg/L TDS][1]	Ambient TDS [mg/L] 2006[3]	Baseline (No Project) [mg/L TDS][2]	RCF Scenarios [mg/L TDS]/ Change[2]			Goal [mg/L NO_3-N][1]	Ambient NO_3-N [mg/L] 2006[3]	Baseline (No Project) [mg/mL NO_3-N][2]	RCF Scenarios [mg/mL NO_3-N]/Change[2]		
				1	2	3				1	2	3
Bunker Hill - A	310	330	463	463/0	461/-2	462/-1	2.7	4.0	4.9	5.0/+0.1	4.9/0	4.9/0
Bunker Hill - B	330	280	346	346/0	345/-1	346/0	7.3	5.4	5.2	5.2/0	5.2/0	5.1/-0.1
Lytle	260	230	274	274/0	274/0	274/0	1.5	2.7	2.8	2.8/0	2.8/0	2.8/0

[1]Source: SARWQCB Basin Plan, Table 4-1
[2]Source: 2010a Geoscience, Tables, pages 16 and 17
[3] 2008 Wildermuth

PCE, TCE and Perchlorate Analysis

In addition to the overall Basin Area groundwater quality discussed above related to TDS and nitrate-nitrogen levels, the Basin Area groundwater resource has been contaminated by former industrial and military uses. The project would have a significant impact on basin-wide water quality if these existing contamination plumes were enlarged or caused to contaminate areas down gradient of the interceptor wells that have been installed to contain them.

Results for the PCE transport model show no change in the Newmark and Muscoy PCE Plume areas for all of the RCF Scenarios as compared to the plume area under Baseline Run (No Project) conditions. By the end of the predictive run (2032), the overall initial area of the PCE plume (approximately 1,910 acres) is reduced to approximately 670 acres for all of the RCF Scenarios.(2009 Geoscience, Figure 36 through 39)

Likewise, the results for the TCE transport model show no change in the Norton and Redland-Crafton TCE plumes areas for all the RCF Scenarios as compared to plume area under Baseline Run (No Project) conditions. By the end of the predictive run (2032), the overall initial area of the TCE plume (approximately 2,030 acres) is reduced to approximately 260 acres for all of the RCF Scenarios. (2009 Geoscience, Figures 40 through 43)

The modeling results show that the perchlorate plume dissipates slightly faster for RCF Scenarios as compared to the Baseline Run (No Project) as a result of increased extraction from the proposed RCF well field. Under Baseline Run (No Project) conditions, the overall initial area of the perchlorate plume (approximately 7,820 acres) is reduced to approximately 480 acres by the end of the predictive run (2032). By the end of the predictive run (2032), the perchlorate plume area would be 470 acres, 460 acres, and 450 acres for the RCF Scenarios 1 through 3, respectively. (2009 Geoscience, Figures 44 through 47)

The purpose of the MODPATH model was to evaluate potential impacts of the production from the RCF conjunctive use scenarios on remediation (i.e., cleanup) efforts in the Newmark and Muscoy plumes by evaluating directions of groundwater flow paths and travel times.

As discussed in more detail in the 2009 Geoscience report (Appendix F), the MODPATH modeling shows that particle recovery for the Newmark Plume is 91% to 92% for the RCF scenarios as compared to a particle recovery of 93% for the Baseline Run (No Project). The particle recovery for the Muscoy Plume is 97% for the all RCF scenarios and the Baseline Run. (No Project). The Newmark and Muscoy Operable Units Statement of Work specifies a minimum particle recovery of 85% for the Newmark Plume Front extraction well network and the Muscoy Plume Front extraction well network when these extraction wells are set equivalent to or above the design extraction rates. Results of the particle tracking from the Newmark and Muscoy Plumes show that the RCF Conjunctive Use project would not impact the contamination plumes. At the present time, the performance of the remedies in place results in 100% capture of the contaminants from all three contaminated plumes. The Newmark Groundwater Site has an Institutional control in place to require that all new wells or new operating conditions go through a permitting process to prove that the existing EPA remedies would not be affected.[4]

Whereas the 2005 PEIR, applicable to the 2005 Project Alignment Alternative and the Realignment Alternative (Jackson Street or Monroe Street options), found that the transport model results indicate that operation of RCF Project could result in a small lateral movement of the Newmark and Muscoy plumes which is different than for the No Project condition; the results of both the 2009 and 2010 hydrologic modeling, applicable to the Realignment Alternative with Additional Connections, show that the RCF conjunctive scenarios, will not adversely impact the contamination plumes within the Basin Area due to the option to extract from the new well field proposed adjacent to the Central Feeder Connection. Newmark and Muscoy PCE Plume, Norton and Redland-Crafton TCE plumes, and the perchlorate plume are all reduced in size as a result of the RCF Scenarios compared to the Baseline Run (No Project). Therefore, potential basin-wide impacts associated with the exiting contamination plumes are **less than significant**.

Underflow Outflow Analysis

Groundwater underflow flows from the San Bernardino Basin Area to other adjacent groundwater basins. This is a natural occurrence which could result in one basin affecting another. Groundwater underflow flows from the Bunker Hill Management Zone across the San Jacinto Fault near the Santa River to the Colton Management Zone. Similarly, groundwater underflow also flows from the Lytle Management Zone across the Barrier E to the Rialto Management Zone.

Also, as described above, the RBSTM is a useful tool for evaluating water levels and water quality of the aquifer systems however, it is a simplified approximation of a complex

[4] United States Environmental Protection Agency Region IX, comment letter regarding Draft Environmental Impact Statement for the Riverside-Corona Feeder Project, Bunker Hill Groundwater Basin, San Bernardino and Riverside Counties, California (CEQ #20110017), April 5, 2011.

hydrogeologic system. The accuracy of model predictions is dependent on the assumptions used for the model prediction. More conservative mass loading assumptions were used for modeling of the TDS and nitrate-nitrogen were used and the RBSTM was not calibrated to reflect absolute values but rather to show whether the Project substantially adversely changed the water quality situation of the Basin Area thereby worsening the basin-wide groundwater quality. (2010a Geoscience)

The predicted average TDS concentration of underflow outflow across the San Jacinto Fault near the SAR to the Colton Management Zone during the 26 year predictive period would be 319 mg/L to 698 mg/L with an average of 520 mg/L under Baseline Run (No Project) conditions. The total mass of the underflow outflow would be 12,398 tons. The predicted TDS concentrations of the underflow for the RCF Scenarios would be approximately the same with an average ranging from 519 mg/L to 522 mg/L. The total mass of the underflow would be slightly less for the RCF Scenarios ranging from 12,106 tons to 12,317 tons. The RWQCB Objective for TDS levels in the Colton Management Zone is 410 mg/L. The current ambient TDS concentration in the Colton Management Zone is 450 mg/L. Thus, the existing conditions exceed the Objective for the Colton Basin. The modeling shows that with the RCF Scenarios, there is would be approximately the same concentration of TDS as the Baseline Run (No Project) with an overall reduction in the mass of the underflow outflow.

The predicted average TDS concentration of underflow outflow from the Lytle Management Zone across Barrier E to the Rialto Management Zone during the 26 year predictive period would be 186 mg/L to 222 mg/L with an average of 201 mg/L under Baseline Run (No Project) conditions. The total mass of the underflow outflow would be 14,066 tons. The predicted TDS concentrations and total mass of the underflow for RCF Scenarios would be the same as compared to the Baseline Run. (No Project). The RWQCB Objective for TDS levels in the Rialto Management Zone is 230 mg/L. The current ambient TDS concentration in the Rialto Management Zone is 230 mg/L. The project results in no changes to the Rialto Basin related to TDS levels.

The predicted average nitrate-nitrogen concentration of underflow outflow across the San Jacinto Fault near the SAR to the Colton Management Zone during the 26 year predictive period would be 5.0 mg/L to 9.7 mg/L with an average of 7.4 mg/L under Baseline Run (No Project) conditions. The total mass of the underflow outflow would be 177 tons. The predicted nitrate-nitrogen concentrations of the underflow for the RCF Scenarios would be the same. The total mass of the underflow would be slightly less for the RCF Scenarios ranging from 172 tons to 175 tons due to slightly less underflow outflow. The RWQCB Objective for nitrate-nitrogen levels in the Colton Management Zone is 2.7 mg/L. The current ambient nitrate-nitrogen concentration in the Colton Management Zone is 2.9 mg/L. Thus, the existing conditions exceed the Objective for the Colton Basin. The modeling shows that with the RCF Scenarios, there is would be the same concentration of nitrate-nitrogen as the Baseline Run (No Project) with an overall reduction in the mass of the underflow outflow.

The predicted average nitrate-nitrogen concentrations of underflow outflow from the Lytle Management Zone across Barrier E to the Rialto Management Zone during the 26 year predictive period would be 2.6 mg/L to 2.7 mg/L with an average of 2.7 mg/L under Baseline Run (No

Project) conditions. The total mass of the underflow outflow would be 187 tons for nitrate-nitrogen during the 26 year period for the Baseline Run (No Project). The RWQCB Objective for nitrate-nitrogen levels in the Rialto Management Zone is 2.0 mg/L. The current ambient nitrate-nitrogen concentration in the Rialto Management Zone is 2.9 mg/L. Thus, the existing conditions exceed the Objective for the Rialto Management Zone. The predicted nitrate-nitrogen concentrations and total mass of the underflow for RCF Scenarios would be the same as compared to the Baseline Run (No Project).
For all the underflow outflows described above, the total mass of the underflow is substantially less based on the prolonged dry year modeling assumptions. (2010 Geoscience) Thus, potential impacts of underflow are **less than significant**.

Effects to Individual Pumpers

Operational impacts to groundwater quality may be considered significant if the proposed project would cause individual well(s) to violate drinking water standards of 1,000 mg/L MCL for TDS, 10 mg/L MCL for Nitrate reported as Nitrogen, and 45 mg/L MCL for Nitrate measured as NO_3.

The difference between the average TDS concentrations for the Baseline Run (No Project) with respect to the RCF Scenarios was calculated for 26 selected wells (including 25 index wells of the Seven Oaks Accord and the Backyard Well for the Valley District/Western/City of Riverside Agreement). The results of these calculations are shown in **Table 4.7-D**. For RCF Scenario 1, the changes in TDS concentration from the Baseline Run (No Project) range from a decline of 5 mg/L to a rise of 2 mg/L. TDS concentration changes range from a decline of 19 mg/L to a rise of 7 mg/L for RCF Scenario 2 as compared to the Baseline Run (No Project). For RCF Scenario 3, these changes range from a decline of 24 mg/L to a rise of 9 mg/L. In general, the wells with an increase in TDS concentration are located in the vicinity or downgradient of the proposed well field adjacent to the Central Feeder Connection (e.g., SBVMWD Backyard Well and City of Riverside Raub 1 Well). Wells with decreases in TDS concentrations are primarily located in the forebay recharge areas due to artificial recharge from the RCF. Neither the existing or modeled TDS levels (with or without the Project) at any well exceed the drinking water standard of 1,000 mg/L.

The difference between the average nitrate-nitrogen concentrations for the Baseline Run (No Project) with respect to the RCF Scenarios was calculated for the same 26 selected wells. The results of these calculations are shown in **Table 4.7-E**. For RCF Scenario 1, the changes in nitrate-nitrogen concentrations compared to the Baseline Run (No Project) range from a decline of 0.2 mg/L to a rise of 0.1 mg/L. Concentration changes range from a decline of 0.4 mg/L to a rise of 0.2 mg/L for RCF Scenario 2 as compared to the Baseline Run (No Project). For RCF Scenario 3, these changes range from a decline of 0.5 mg/L to a rise of 0.2 mg/L. The well with greatest increase in nitrate-nitrogen concentrations is the City of Riverside Raub 1 Well, which is located down gradient of the proposed RCF wellfield. Wells with decreases in nitrate-nitrogen concentrations are primarily located in the forebay recharge areas due to artificial recharge from the RCF. Neither the existing or modeled levels (with or without the Project) at any well exceed the drinking water standard of 10 mg/L MCL for Nitrate reported as Nitrogen.

Table 4.7-D
TDS Concentration at Wells 2007-2032

Well Name	Existing TDS Conditions in 2007	Average TDS Concentration 2007 to 2032				Difference in Average TDS Concentration between Baseline Run (No Project) and RCF Scenarios		
		Baseline Run (No Project) [mg/L]	RCF Scenario 1 [mg/L]	RCF Scenario 2 [mg/L]	RCF Scenario 3 [mg/L]	RCF Scenario 1 [mg/L]	RCF Scenario 2 [mg/L]	RCF Scenario 3 [mg/L]
SBVMWD San Bernardino Ave. Well	280	342	342	340	341	-1	-2	-1
City of San Bernardino Mt. Vernon Well	330	393	393	394	396	0	0	3
East Valley Water District Well 62	280	441	442	443	445	1	2	4
Fontana Union Well 13	230	190	190	190	190	0	0	0
Fontana Union Well 26	230	221	221	221	221	0	0	0
Fontana Union Well 27	230	203	203	203	203	0	0	0
East Valley Water District Well 120	280	239	239	240	240	0	0	1
City of San Bernardino Vincent Well	330	457	457	457	457	0	0	0
City of San Bernardino Devil Canyon Well No. 1	330	498	493	479	474	-5	-19	-24
City of San Bernardino Newmark 3 Well	330	387	386	382	380	-1	-4	-7
West Valley Water District Lord 7 Well	230	211	211	210	211	0	0	0
City of Riverside Raub 1 Well	280	382	384	388	391	2	7	9
City of Redlands Well 32	280	372	370	368	366	-2	-4	-5
City of Redlands Orange Street Well	280	279	280	280	283	1	1	4
East Valley Water District Well 24A	330	312	311	310	310	-1	-2	-2
City of San Bernardino Cajon Well No. 1	330	717	717	718	718	0	1	2
East Valley Water District Well 40	280	275	275	272	272	0	-3	-3
City of San Bernardino Devil Canyon Well No. 3	330	393	393	392	391	0	0	-1
City of San Bernardino Leroy Street Well	330	239	238	238	238	-1	-1	-1
City of Redlands Agate 2 Well	280	290	290	289	288	0	-1	-2
East Valley Water District Cone Camp Well	280	205	205	206	206	0	2	1
Bear Valley Mutual Water Company Nelson Street Well	280	293	293	293	293	0	-1	-1
Gage Canal Company Lower Kelly Well	280	428	428	429	430	0	0	2
City of Redlands Airport Well No. 2	280	286	287	287	288	0	1	1
East Valley Water District Well 146 A	280	296	295	295	296	0	0	1
SBVMWD Backyard Well	280	593	593	594	597	0	1	4

Source: 2010 Geoscience, Table 3, and 2008 Wildermuth.

Table 4.7-E
Nitrate-Nitrogen Concentration at Wells 2007-2032

Well Name	Existing Nitrate-Nitrogen Conditions 2007	Average Nitrate-Nitrogen Concentration 2007 to 2032				Difference in Average Nitrate-Nitrogen Concentration between Baseline Run (No Project) and RCF Scenarios		
		Baseline Run (No Project) [mg/L]	RCF Scenario 1 [mg/L]	RCF Scenario 2 [mg/L]	RCF Scenario 3 [mg/L]	RCF Scenario 1 [mg/L]	RCF Scenario 2 [mg/L]	RCF Scenario 3 [mg/L]
SBVMWD San Bernardino Ave. Well	5.4	5.7	5.6	5.5	5.4	-0.1	-0.3	-0.3
City of San Bernardino Mt. Vernon Well	4.0	4.4	4.4	4.4	4.4	0.0	0.0	0.0
East Valley Water District Well 62	5.4	6.1	6.1	6.2	6.2	0.0	0.1	0.1
Fontana Union Well 13	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0
Fontana Union Well 26	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0
Fontana Union Well 27	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0
East Valley Water District Well 120	5.4	2.7	2.7	2.7	2.6	0.0	0.0	0.0
City of San Bernardino Vincent Well	4.0	1.6	1.6	1.6	1.6	0.0	0.0	0.0
City of San Bernardino Devil Canyon Well No. 1	4.0	4.7	4.6	4.4	4.3	-0.1	-0.3	-0.4
City of San Bernardino Newmark 3 Well	4.0	2.9	2.9	2.8	2.8	0.0	-0.1	-0.1
West Valley Water District Lord 7 Well	2.7	2.5	2.5	2.5	2.5	0.0	0.0	0.0
City of Riverside Raub 1 Well	5.4	6.8	6.8	6.9	6.9	0.0	0.2	0.2
City of Redlands Well 32	5.4	5.9	5.7	5.5	5.4	-0.2	-0.4	-0.5
City of Redlands Orange Street Well	5.4	3.7	3.7	3.7	3.7	0.0	0.0	0.0
East Valley Water District Well 24A	4.0	1.9	1.9	1.9	1.9	0.0	0.0	0.0
City of San Bernardino Cajon Well No. 1	4.0	7.8	7.8	7.8	7.8	0.0	0.0	0.0
East Valley Water District Well 40	5.4	4.0	4.0	.9	3.9	0.0	-0.1	-0.1
City of San Bernardino Devil Canyon Well No. 3	4.0	3.5	3.5	3.5	3.5	0.0	0.0	0.0
City of San Bernardino Leroy Street Well	4.0	2.2	2.3	2.3	2.3	0.1	0.1	0.1
City of Redlands Agate 2 Well	5.4	4.1	4.0	3.9	3.8	-0.1	-0.2	-0.3
East Valley Water District Cone Camp Well	5.4	1.4	1.4	1.4	1.4	0.0	0.0	0.0
Bear Valley Mutual Water Company Nelson Street Well	5.4	4.4	4.3	4.2	4.2	-0.1	-0.2	-0.3
Gage Canal Company Lower Kelly Well	5.4	7.8	7.8	7.8	7.8	0.0	0.0	0.0
City of Redlands Airport Well No. 2	5.4	4.0	3.9	3.8	3.7	-0.1	-0.2	-0.2
East Valley Water District Well 146 A	5.4	4.0	4.0	4.0	4.0	0.0	0.0	-0.1
SBVMWD Backyard Well	5.4			7.3	7.3	0.0	0.0	0.0

Source: 2010 Geoscience, Table 3 and 2008 Wildermuth.

San Bernardino Basin Area Conclusions and Recommendations

The 2005 PEIR found direct groundwater quality impacts that may result from the proposed importation of State Water Project water for replenishment less than significant due to the equal or better quality of the imported water than existing Basin Area water quality. No additional sources of contaminants such as TCE, PCE, DBCP and nitrates (NO_3) will be added by the project. The imported water to be used for recharge comes from the State Water Project. The quality of imported State Water Project water remains of equal or better quality than the existing Basin Area water quality and therefore, the potential direct groundwater quality impacts remain less than significant.

Both the modeling analysis prepared in 2005 under average to wetter year assumptions and historically higher SWP water availability for recharge, the 2009 modeling for the average rainfall conditions, and the Prolonged Dry-year modeling completed for the Realignment Project in 2010 indicate that project operations in the San Bernardino Basin Area can have less than significant impacts to groundwater quality, and as shown in **Table 4.7-C**, the implementation of the project has the potential to decrease the level of groundwater contaminants (TDS and NO_3-N specifically) over the No-Project baseline scenario.

Coordinated Basin Area management under current and future conditions is critical however, to assuring the water quality of the Basin Area is not adversely affected. IF the RCF were not operated in a coordinated fashion under the requirements of the Western Judgment, THEN impacts could be significant. Therefore, mitigation measures **MM GWQ 1** and **2** from the 2005 PEIR required that operating plans be prepared based on sound modeling and set the frequency with which operating plans must be prepared.

Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in **MM GWQ 1**, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Thus, **MM GWQ 1** was accomplished and is no longer needed for the RCF realigned pipeline.

Additionally, WMWD has been participating in ongoing management efforts with the Basin Area Technical Advisory Committee (BTAC) which will assure that this project is included and managed to avoid adverse impacts to water levels in the Basin Area. The ongoing monitoring and adaptive management recommended by **MM GWQ 2** is still necessary, but the mitigation measure has been revised to include WMWD's involvement with the TAC. The currently revised mitigation measure below, **MM GWQ 2 (Revised)**, will replace **MM GWQ 1** and **2** from the 2005 PEIR. Potential adverse impacts to groundwater levels in the San Bernardino Basin Area will be **less than significant with implementation of mitigation measure MM GWQ 2 (Revised)**. Potential adverse impacts to groundwater quality overall in the Basin Area and at individual existing wells will be **less than significant with implementation of mitigation MM GWQ 2 (Revised)**.

As discussed in the 2005 PEIR, the precise location of individual new wells was not known. At this time, the precise location of individual new wells is still undetermined and therefore the direct potential site-specific impacts of new wells (e.g., biology or cultural impacts at a particular well site) is also not addressed in this SEIR. The potential impacts that new well sites might have on the environment will be addressed through normal well permitting procedures and subsequent CEQA compliance.

Operational Effects – Chino Groundwater Basin

The Chino Groundwater Basin (Chino Basin) Dry-Year Yield Program Expansion (DYYP Expansion) is a proposed conjunctive-use program developed by the Chino Basin Watermaster in association with Inland Empire Utilities Agency (IEUA), MWD, Three Valleys Municipal Water District (TVMWD), and WMWD. (DYYP Expansion, p. ES-1) WMWD's participation in the DYYP Expansion would provide a direct export connection to the Chino Basin. WMWD's primary role would be participation on the extraction, or "take" side, of the DYYP Expansion. WMWD's point of connection (Clay Street Connection) to the Chino Basin would be via the Jurupa Community Services District, a Chino Basin Appropriator and retail agency of WMWD. (DYYP Expansion, p. 3-11)

As part of the DYYP Expansion, groundwater modeling was conducted to evaluate the potential for material physical injury to the Chino Basin including an analysis of groundwater-level changes, increased potential for subsidence, losses from storage, change in direction and speed of known water quality anomalies, and the ability to maintain hydraulic control. The DYYP Expansion groundwater modeling showed the simulated location of the groundwater contaminant plumes in Chino Basin at the end of the planning period (2028) for the both the baseline and dry-year yield scenarios. All plume locations are virtually identical for both scenarios, indicating that the change in direction and speed of movement of these plumes caused by the dry-year yield program is not significant. (DYYP, p. 7-8) It was concluded that there is no material physical injury related to the redirection and transport of known groundwater contaminant plumes from the operation of the dry-year yield program. The model-projected change in direction and speed of movement of these plumes caused by the dry-year yield program is not significant. (DYYP, p. 7-10) The findings in the Peace II SEIR substantiate this finding that no significant impacts would result from the operating assumptions included in the evaluation which include the DYY Program.

> "After detailed evaluation of all hydrology/water quality issues in the DSEIR, it was concluded that all hydrology and water quality impacts can be controlled to a less than significant level. Detailed assumptions regarding future water management activities are included in this finding, for example pumping locations must be optimized, the future location of groundwater recharge must be optimized, additional imported water must be brought into the Basin over the next 20 years to offset cumulative unmet replenishment obligation (CURO), and hydraulic control of the Basin must be accomplished. Regardless, under these assumptions, all hydrology and water quality impacts can be offset or otherwise mitigated, and the hydrology and water quality impacts (including those identified under Utilities and Services Systems [section of the Peace II SEIR]) have

been found to be less than significant, on a project specific and cumulative basis." (SEIR 2010, pp. 1-8)

Pursuant to the DYYP Expansion, WMWD's would have access to a maximum of 5,000 AF/YR from the Chino Basin desalter. This amount would be consistent with the provisions of the Chino Basin Watermaster's Optimum Basin Management Program as evaluated in the Peace II Final SEIR. Pursuant to that analysis of the DYYP Expansion and Peace II SEIR, **no significant impacts related to groundwater quality within the Chino Basin** are anticipated as a result of implementation of the Riverside-Corona Feeder project.

Construction Effects

Construction activities can have an effect on surface and/or groundwater quality. The potential impacts to water quality resulting from Project construction activities are analyzed in Section 4.11, Stormwater/Water Quality. Additionally, dewatering activities which may be required of the Project at stream and river crossings, are analyzed in Section 4.3, Biological Resources and Section 4.11.

Realignment Alternatives Proposed Mitigation Measures/Minimization

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 or reduce the potential significant adverse impacts to groundwater quality to below the level of significance.

*Subsequent to the public review period for the Draft 2005 PEIR, the groundwater models necessary to evaluate potential operating strategies, as required in **MM GWQ 1**, were complete and became available for use. In response to comments received from other agencies regarding the Draft 2005 PEIR, WMWD ran the model prior to preparing and certifying the Final 2005 PEIR. Thus, **MM GWQ 1** was accomplished and is no longer needed for the RCF realigned pipeline.*

*Additionally, WMWD has been participating in ongoing management efforts with the Basin Area Technical Advisory Committee (BTAC) which will assure that this project is included and managed to avoid adverse impacts to water levels in the Basin Area. The ongoing monitoring and adaptive management recommended by **MM GWQ 2** is still necessary, but the mitigation measure has been revised to include WMWD's involvement with the TAC. The currently revised mitigation measure below, **MM GWQ 2 (Revised)**, will replace **MM GWQ 1** and **2** from the 2005 PEIR*

~~**MM GWQ 1:** Prepare operating strategies to be tested using the most current versions of the groundwater flow and groundwater quality model(s) available at the time. An operating plan consistent with any overall management plan adopted for the Basin Area shall be developed prior to commencing replenishment activities for the project that defines parameters of replenishment and extraction based on groundwater model(s) as evaluative tool(s).~~

MM GWQ 2 (Revised): To assure that ongoing management of the RCF is coordinated with management of the Basin Area as a whole, monitoring and adaptive management shall be employed.

a) The RCF operations management plan will be developed and tested using the groundwater modeling employed by the Basin Area TAC (or its successor or assignee) on an annual basis. Existing groundwater flow and groundwater quality model(s) shall be used to predict the effects of project operations on groundwater quality. The results of the modeling shall be presented to the BTAC. If the results indicate that the location of pollution plumes will be shifted by project operations such that additional existing 'clean' wells could become contaminated, WMWD shall modify planned operations to avoid the result or otherwise address the modeled situation to the satisfaction of the BTAC. Examples of operational modifications that could be used, are provided in the following table.

b) When a new well is drilled, indicator wells in the vicinity that could be affected by Project operation will be selected to become part of the annual operations management plan. If water quality testing at any indicator wells (which are already tested regularly) suggests that the replenishment and pumping regime of the proposed project operation is causing drinking water quality in a given well to become newly contaminated or to worsen due to the RCF Project~~, exceed state drinking water standards~~, production and/or spreading in the area(s) contributing to the contamination shall cease until a remedy is identified and implemented. ~~adverse affects associated with the project no longer occur.~~ Such remedies may include but not be limited to the following:

Contamination Remedy Examples and Method Priorities

New Wells Drilled for Project Operations		
Treatment Option	First Priority Methods	Secondary Priority Methods
Avoidance	• Move or Avoid Production in a Contaminated Location	• Wellhead treatment
Wellhead Treatment[1]	• Chlorination or ozonation for disinfecting (required for all wells) • Ion Exchange for nitrates and other contaminants • Activated Carbon	• Reverse osmosis
Blending	• If multiple wells in proximity have varying levels of constituents, blending could occur to dilute contaminants to legal levels prior to distribution	
Existing Wells at Risk of Contamination by Project Operations		
Treatment Option	First Priority Method	Secondary Priority Method
Careful Management	• Participate in ongoing conjunctive use management of the Basin so Project is a	• choose alternative production and/or spreading location(s)

	benefit to Basin health for a safe drinking water supply and for the ecological health of the watershed	• produce or spread at a different time of year • install barrier wells
Blending	• If multiple wells in proximity have varying levels of constituents, blending could occur to dilute contaminants to legal levels prior to distribution	
Alternative use of contaminated water	• Could be effective in areas where non-potable system or other non-potable use exists if affected well operator is provided with drinking water quality replacement water from another source	

[1] Other than disinfecting, all other treatment approaches are dependent on the contaminants that need to be removed.

- ~~Appropriate Use. Contaminated water could be utilized for purposes that would allow or require lower water quality standards.~~
- ~~Blend. Water that has poor quality can be blended and diluted until water quality standards are achieved.~~
- ~~Move (Avoid). Choose another production and/or spreading area.~~
- ~~Careful Management. Operate wells in a manner that will prevent or delay contamination. This may include installation of barrier wells or avoidance of strategies that would result in acceleration of the movement of contaminated water towards existing wells.~~
- ~~Wellhead Treatment. Wellhead treatment can be utilized to bring water to acceptable water quality levels.~~

Realignment Alternatives Determination of Significance under CEQA

As stated in the 2005 PEIR, impacts to groundwater quality would be less than significant after incorporating mitigation measures. In light of the updated groundwater modeling prepared as part of this SEIR/EIS (Appendix F), it can be concluded that the 2005 PEIR remains adequate to address potential impacts related to groundwater levels and the revised mitigation measure contained therein, as described above, will be applicable to the proposed project. With implementation of mitigation measures **MM GWQ 2 (Revised),** impacts to groundwater quality will be **less than significant**.

4.7.4 No Project/Action Alternative

Due to the increased groundwater gradient resulting from 2005 Project Alignment Alternative recharge and extraction, the rate of subsurface flow is increased and the Newmark and Muscoy plumes are cleaned up more quickly under RCF Project conditions than under No Project conditions. The footprint of the Newmark and Muscoy plumes was smaller at the end of the forecast period for the RCF Project operation than for the No Project condition. Seven wells that would be contaminated under No Project Condition would avoid contamination due to Project implementation. As there would be no recharge or extraction associated with the No

Project/Action Alternative, there would be no direct adverse effects that would result to groundwater quality from this alternative however, the potential benefits of cleaning up the overall groundwater quality of the Basin Area faster as a result of the project would not be realized.

4.8 HAZARDS AND HAZARDOUS WASTE/MATERIALS

Potential impacts related to: 1) the routine transport, use, or disposal of hazardous materials; 2) reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; 3) the impairment of implementation of or physical interference with an adopted emergency response or evacuation plan; 4) hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; 5) an inconsistency with an Airport Master Plan; 6) Airport Land Use Commission review process requirements; 7) the project being located within an airport land use plan or in the proximity of a public airport or public-use airport that would result in a safety hazard for people residing or working in the project area; 8) safety hazards for people residing or working in the project area within the vicinity of a private airstrip; or 9) the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, were all found to be less than significant in the NOP prepared for this project (Appendix A).

The focus of the following discussion is related to potential impacts associated with whether the project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result, would create a significant hazard to the public or the environment. In response to the NOP, a comment letter from the Caltrans Division of Aeronautics identified Federal Aviation Regulation, Part 77 (regarding structural hazards on or near airports) as potentially being applicable to the proposed project and a comment letter from the California Department of Toxic Substances Control requested that the project alignment be reviewed for potentially contaminated sites and that applicable databases be investigated. These comments and concerns are incorporated into this section of the SEIR.

In addition to the 2005 Certified Program EIR (2005 PEIR) and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- City of Riverside Community Development Department – Planning Division, *Federal Aviation Regulation Part 77 Review Handout.* (Available at http://www.riversideca.gov/planning/pdf/2008-forms/aluc-part77-handout.pdf, accessed on October 26, 2009.)
- Environmental Data Resources Inc., *EDR DataMap Environmental Atlas, WMWD Riverside/Corona Feeder EIR 2007-0377, Riverside*, July 28, 2008. (Appendix G)
- Environmental Data Resources Inc., *EDR DataMap Corridor Study, Riverside-Corona Re-Alignment Project, Central Feeder Connection*, September 28, 2009. (Appendix G)
- Environmental Data Resources Inc., *EDR DataMap Corridor Study, Riverside-Corona Re-Alignment Project, Clay Street Connection*, September 28, 2009. (Appendix G)
- Environmental Data Resources Inc., *EDR DataMap Corridor Study, Riverside-Corona Re-Alignment Project, Mockingbird Connection*, September 28, 2009. (Appendix G)

- Environmental Data Resources Inc., *EDR DataMap Corridor Study, Riverside-Corona Re-Alignment Project, La Sierra Pipeline*, September 28, 2009. (Appendix G)
- Mead & Hunt and Coffman Associates, Inc., *Riverside County Airport Land Use Compatibility Plan Document*, October 14, 2004. (Available at http://www.rcaluc.org/plan_new.asp, accessed on October 26, 2009.)
- United States Department of Transportation, Federal Aviation Administration, Airports Division, FAA Central Region, *Objects Affecting Navigable Airspace, Federal Aviation Regulation Part 77*. (Available at http://www.faa.gov/airports/engineering/airspace_analysis/, accessed on October 26, 2009.)
- United States Department of Transportation, Federal Aviation Administration. *Advisory Circular AC 70/7460-2K: Proposed Construction or Alteration of Objects that May Affect the Navigable Airspace*, Effective March 1, 2000. (Available at http://www.faa.gov/airports/engineering/airspace_analysis/, accessed on October 26, 2009.)

4.8.1 Setting/Affected Environment

Pursuant to Government Code 65962.5, environmental regulatory database lists were reviewed to identify and locate properties with known hazardous substance contamination within the proposed project area. Four state agencies are required to provide lists of facilities, which have contributed, harbor, or are responsible for environmental contamination within their jurisdiction. The four state agencies that are required to provide these lists to the Secretary for Environmental Protection include: the Department of Toxic Substances Control (DTSC), the State Department for Health Services (DHS), the State Water Resources Control Board (SWRCB), and the California Integrated Waste Management Board (CIWMB). The Secretary for Environmental Protection then takes each of the four respective agency lists and forms one list, referred to as the Hazardous Waste and Substances List (List). The List is made available to every city and/or county in the state of California.

The DTSC maintains lists of: hazardous waste facilities subject to corrective action, land designated as hazardous waste property, sites on the Abandoned Site Assessment Program, and sites listed pursuant to Section 25356 of the Health and Safety Code. DTSC also maintains records of hazardous waste disposals on public land. The DHS maintains lists of all public drinking water wells that contain detectable levels of organic contaminants and wells that are subject to special water analysis. The SWRCB maintains lists of: unauthorized release reports for underground storage tanks, solid waste disposal facilities from which there is a migration of hazardous waste, and all cease and desist orders issued after January 1, 1986 concerning hazardous waste discharges. The CIWB maintains lists of solid waste disposal facilities from which there is a known migration of hazardous waste.

The 2005 PEIR analyzed the List for hazardous sites that might affect or be affected by the proposed 2005 Project Alignment. The discussion of the setting and possible sites is incorporated by reference from Section II-7 of the 2005 PEIR, beginning on page II-7-1. The 2005 Project

Alignment would pass across or be constructed within the vicinity of four hazardous materials sites within the City of San Bernardino, one site within the City of Colton, three sites within the City of Grand Terrace, 14 sites within the City of Riverside, and four within the City of Corona. A full list is provided in Table II-7-A of the PEIR (Appendix B, herein).

The List has been reviewed to identify hazardous sites that may affect the Realignment Alternatives. A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR) for documented hazardous material sites, like those referred to in Government Code Section 65962.5, within the project area and within one mile of the project boundary. The DTSC also tracks school sites, which appear on some of its lists. Sites identified within one mile of the proposed project were evaluated for their potential to be encountered and/or unearthed during future construction activities. Sites were recorded on 45 database lists, but often the same site is listed on multiple lists. There were over 1,200 sites listed within a one-mile radius of the project site in the EDR report. Of the 1,200 sites, the 179 sites that are adjacent to the pipeline realignment are described in **Table 4.8-A, EDR Database Search Results** (p. 4.8-11, below). (For a full report listing of all of the sites, and for definitions of the Database Lists, see Appendix G, EDR Data Map Area Study.)

Riverside Municipal Airport

Owned and operated by the City of Riverside, Riverside Municipal Airport is situated inside the western portion of the city limits. The airport occupies some 441 acres on the flat lands of the Santa Ana River plain. It has two intersecting runways—the primary runway running roughly east/west and a shorter, crosswind runway aligned north/south. A precision instrument approach procedure is established from the west, although most of the aircraft operations are in the opposite direction. An air traffic control tower serves the airport. From a land use compatibility standpoint, the most significant improvement planned for the airport is a 750-foot easterly extension of the runway. Establishment of a non-precision instrument approach procedure from the east also is planned.

Updated airport activity forecasts prepared for the city anticipate some 160,000 annual operations in 2025 compared to just over 110,000 in 2002/03. Beyond this time frame, the already evident trend toward more use of the airport by turboprop aircraft, business jets, and helicopters is expected to be much stronger. A corresponding "ultimate" forecast of 220,000 annual operations reflects this trend. An aircraft operation is defined as a landing or a takeoff. A touch-and-go (a practice landing followed by a takeoff) is counted as two operations.

A portion of the Northern Reach in unincorporated Riverside County and most of the Central Reach and the Clay Street Connection of the proposed Riverside-Corona Feeder (RCF) Realignment Alternatives are located within proximity to Riverside Municipal Airport.

4.8.2 Summary of 2005 Project Alignment Certified Program EIR for Riverside-Corona Feeder Project

Design Considerations/Avoidance

The proposed pipeline project is not expected to generate the use, storage, or handling of hazardous materials.

Potential Significant Impacts/Environmental Consequences

Hazards and Hazardous Materials were addressed in Section II-7 (pp. II-7-1 through II-7-12) of the 2005 PEIR for the Riverside-Corona Feeder Project (2005 Project Alignment), which are hereby incorporated by reference. The following discussion is a summary of the Hazardous Materials section of the 2005 PEIR:

Threshold: *Impacts related to hazardous materials compliance is considered significant if the project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, creates a significant hazard to the public or the environment.*

The 2005 Project Alignment will pass across or would have been within the vicinity of twenty six (26) hazardous materials sites under various regulatory statutes. Current conditions at these sites do not pose a threat to human health or the environment. With the exception of the currently closed Corona Disposal Site, the 2005 Project Alignment will not cross any of the above sites. Rather, it would be constructed in road rights-of-way, avoiding the hazardous materials sites.

Although no significant impacts related to the 26 sites were anticipated, common types of contamination could be encountered during construction of the 2005 Project Alignment resulting from leaking underground storage tanks (LUST), poor chemical handling, and accidental or intentional unauthorized chemical releases. Sites or alignments not evaluated in this document may currently be contaminated with hazardous waste or may be contaminated prior to facility construction.

2005 Project Alignment Mitigation Measures

The following Mitigation Measures were adopted in the 2005 PEIR to reduce potentially significant impacts related to hazards and hazardous materials:

MM Haz 1: Avoid sites and alternative alignments on or near environmentally contaminated property. If avoiding a particular site compromises physical engineering requirements, then the following mitigation measures shall be implemented to reduce environmental effects related to hazards as a result of the project to a level below significance.

MM Haz 2: Check potential sites for listing on the most recent Hazardous Waste and Substances List (List) provided by the San Bernardino County Division of Hazardous Materials and by the Riverside County Department of Environmental Health pursuant to Section 65962.5

of the Government Code. If a selected site is on the List, avoidance of that property will be the first consideration.

MM Haz 3: If the selected future alignment traverses a site listed on the List and avoidance is not feasible, or if there are other indications that a site could be contaminated (i.e., where pipeline alignment crosses railroad rights-of-way) a Phase 1 Environmental Site Assessment (ESA) will be prepared.

MM Haz 4: If the Phase 1 ESA identifies possible contamination on the pipeline alignment, then recommended subsurface investigation measures listed in the Phase I ESA will be implemented. Based on subsurface investigations characterizing subsurface contamination, remediation measures shall be implemented for the applicable site or an alternative alignment will be chosen.

MM Haz 5: All environmental investigation and/or remediation shall be conducted under a work plan approved by jurisdictional regulatory agencies overseeing hazardous waste cleanups. For the cities of Corona and Riverside the local agencies are City of Corona Fire Department and City of Riverside Fire Department. For the cities of San Bernardino, Colton, and Grand Terrace, the enforcement agency is the County of San Bernardino Department of Environmental Health Services. In the unincorporated Riverside County, the Department of Environmental Health administers a program for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated, or recycled, and to regulate by the issuance of permits, the activities of establishments where hazardous waste is generated.

MM Haz 6: Prior to any excavation or soil removal action on known contaminated sites, or if contaminated soil (i.e., soil with a visible sheen or detectable odor) is encountered, complete characterization of the soil will be conducted. Appropriate sampling shall be conducted prior to disposal of the excavated soil. If the soil is contaminated, it shall be properly disposed of according to Land Disposal restrictions. If site remediation involves the removal of contamination, then contaminated material will need to be transported off site to a licensed hazardous waste disposal facility. This may incrementally decrease the volume available at a hazardous waste disposal site or incrementally increase the emissions of a hazardous waste incinerator. These impacts are not considered significant. If the proposed project plans on importing soils to backfill the areas excavated, proper sampling shall be conducted to make sure that the imported soil is free of contamination.

MM Haz 7: If during construction of the project, soil and/or groundwater contamination is suspected, construction in the area shall cease and appropriate Health and Safety measures shall be implemented. The project proponent shall contact the respective jurisdictional enforcement agency (see **MM Haz 6**) to obtain the necessary information on appropriate measures and their implementation.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the 2005 Project Alignment found that with the implementation of local, state, and federal regulations; project design features; and Mitigation Measures **MM Haz 1** through **7**; impacts to hazard and hazardous materials would be less than significant.

4.8.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The impacts and findings discussed in the 2005 PEIR related to hazards and hazardous materials are applicable to both the 2005 Project Alignment and the Project Realignment Alternative and Realignment Alternative with Additional Connections, as appropriate. The Realignment Alternatives will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR and will include an additional four connections to other regional facilities. The analysis of hazards and hazardous materials contained within the 2005 PEIR does not specifically address the proposed realignment. However, the analysis conducted in this section of the SEIR/EIS is provided to make the 2005 PEIR adequate for the entire Riverside-Corona Feeder Project under CEQA and to cover all alignments and facilities for purposes of NEPA. The above mitigation measures are still applicable for the proposed realignment, although mitigation measure **MM Haz 5** will be revised to update the references to specific cities to reflect the proposed realignment.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Western Municipal Water District "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to hazards and hazardous materials may be considered potentially significant if the project would:

- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, the project would result in a safety hazard for people residing or working in the project area.

Related Regulations

A number of federal, state, and local laws have been enacted to regulate the management of hazardous materials. Implementation of these laws and management of hazardous materials are regulated independently of the CEQA process through programs administered by various agencies at the federal, state, and local levels. An overview of the key hazardous materials laws and regulations that apply to the proposed project are provided below.

Federal

Several federal agencies regulate hazardous materials. These include the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR). In particular, Title 49 of the

CFR governs the manufacture of packaging and transport containers, packing and repacking, labeling, and the marking of hazardous material transport. Some of the major federal laws and issue areas include the following statutes:

- Resource Conservation and Recovery Act (RCRA) – hazardous waste management
- Hazardous and Solid Waste Amendments Act (HSWA) – hazardous waste management
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – cleanup of contamination
- Superfund Amendments and Reauthorization Act (SARA) – cleanup of contamination
- Emergency Planning and Community Right-to-Know (SARA Title III) – business inventories and emergency response planning

The EPA is the primary federal agency responsible for the implementation and enforcement of hazardous materials regulations. In most cases, enforcement of environmental laws and regulations established at the federal level is delegated to state and local environmental regulatory agencies.

Federal Aviation Administration

Land use safety guidance from the Federal Aviation Administration (FAA) is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace. The FAA criteria apply only to property controlled by the airport proprietor. It has no authority over off-airport land uses.

The emphasis in FAA safety criteria is upon the runway surface and the areas immediately adjoining it. Standards are established which specify ground surface gradients for areas adjacent to runways and acceptable location and height of aeronautical equipment placed nearby.

Runway protection zones (RPZs) are trapezoidal-shaped areas located at ground level beyond each end of a runway. The dimensions of RPZs vary depending upon the type of landing approach available at the airport (visual, non-precision, or precision) and characteristics of the critical aircraft operating at the airport (weight and approach speed). Ideally, each runway protection zone should be clear of all objects. The FAA's *Airport Design* advisory circular strongly recommends that airports own this property outright or obtain easements sufficient to control the land. Even on portions of the RPZs not under airport control, the FAA recommends that churches, schools, hospitals, office buildings, shopping centers, and other places of public assembly, as well as fuel storage facilities be prohibited. Beyond the runway protection zones, the FAA has no specific safety-related land use guidance other than airspace protection.

Airspace Protection

Part 77 of the Federal Aviation Regulations (FAR), *Objects Affecting Navigable Airspace*, establishes standards for determining obstructions to navigable airspace and the effects of such obstructions on the safe and efficient use of that airspace. The regulations require that the FAA

be notified of proposed construction or alteration of objects (whether permanent, temporary, or of natural growth) if those objects would be of a height which exceeds FAR Part 77 criteria.

Part 77 regulations define a variety of imaginary surfaces at certain altitudes around airports. Part 77 surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface. Collectively, Part 77 surfaces around an airport define a bowl-shaped area with ramps sloping up from each runway end. Part 77 standards are not absolute height restrictions, but instead identify elevations at which structures may present a potential safety problem. Penetrations of Part 77's surfaces generally are reviewed on a case-by-case basis. If a hazard to air navigation is identified, then the FAA will issue a determination of hazard to air navigation. However, the FAA does not have the authority to prevent encroachment; it is up to the local land use authority to enforce the recommendation.

The FAA has additional guidelines regarding protection of airport airspace, which are set forth in other FAA documents. In general, these criteria specify that no use of land or water anywhere within the boundaries encompassed by FAR Part 77 should be allowed if it could endanger or interfere with the landing, take off, or maneuvering of an aircraft at an airport (FAA-1987). Specific characteristics to be avoided include: creation of electrical interference with navigational signals or radio communication between the airport and aircraft; lighting which is difficult to distinguish from airport lighting; glare in the eyes of pilots using the airport; smoke or other impairments to visibility in the airport vicinity; and uses which attract birds and create bird-strike hazards.

State

Primary state agencies with jurisdiction over hazardous chemical materials management are the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB). Other state agencies involved in hazardous materials management are the Department of Industrial Relations (State OSHA implementation), Office of Emergency Services (OES-California Accidental Release Prevention implementation), Department of Fish and Game (DFG), Air Resources Board (ARB), Caltrans, State Office of Environmental Health Hazard Assessment (OEHHA-Proposition 65 implementation), and the California Integrated Waste Management Board (CIWMB). The enforcement agencies for hazardous materials transportation regulations are the CHP and Caltrans. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulation. Southern California Air Quality Management District (SCAQMD) Rules and Regulations pertaining to asbestos abatement (including rule 1403), Construction Safety Orders 1529 (pertaining to asbestos) and 1532.1 (pertaining to lead) from Title 8 of the California Code of Regulations.

Hazardous chemical and biohazardous materials management laws in California include the following statutes:

- Hazardous Materials Management Act – business plan reporting
- Hazardous Waste Control Act – hazardous waste management

- Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65) – releases of and exposure to carcinogenic chemicals
- Hazardous Substances Act – cleanup of contamination
- Hazardous Waste Management Planning and Facility Siting (Tanner Act)
- Hazardous Materials Storage and Emergency Response
- California Medical Waste Management Act – medical and biohazardous wastes

State regulations and agencies pertaining to hazardous materials management and worker safety which are applicable to the city and proposed General Plan Update are described below:

California Environmental Protection Agency

The California EPA (Cal/EPA) has broad jurisdiction over hazardous materials management in the state. Within the Cal/EPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law.

Along with the DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the California Code of Regulations (CCR). Additional state regulations applicable to hazardous materials are contained in Title 22 of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Investigation and Cleanup of Contaminated Sites

The oversight of hazardous materials release sites often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and RWQCB are the two primary state agencies responsible for issues pertaining to hazardous materials release sites. Air quality issues related to remediation and construction at contaminated sites are also subject to federal and state laws and regulations that are administered at the local level.

Investigation and remediation activities that would involve potential disturbance or release of hazardous materials must comply with applicable federal, state, and local hazardous materials laws and regulations. DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. The standards identify approaches to determine if a release of hazardous wastes/substances exists at a site and delineates the general extent of contamination; estimates the potential threat to public health and/or the environment from the release and provides an indicator of relative risk; determines if an expedited response action is required to reduce an existing or potential threat; completes preliminary project scoping activities to determine data gaps; and identifies possible remedial action strategies to form the basis for development of a site strategy.

Design Considerations/Avoidance

The proposed pipeline realignment is not expected to generate the use, storage, or handling of hazardous materials.

Potential Significant Impacts/Environmental Consequences

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

Environmental Data Resources (EDR) reports were reviewed in order to identify any known or suspected contamination sites or incidents of hazardous waste storage or disposal which might have resulted in soil or groundwater contamination within a one-mile radius of the property. Among the databases searched included in the EDR reports were National Priority List (NPL) (federal, tribal, and state equivalent), proposed and delisted NPL, CORRACTS (RCRA facilities subject to corrective actions), hazardous waste sites identified for investigation or remediation Compensation and Liability Information System (CERCLIS), State CERCLIS, Voluntary Cleanup Priority List (VCP), Brownfields Calsites, Leaking Underground Storage Tank incident reports (LUST), sites with engineering controls, former CERCLIS (NFRAP), Resource Conservation and Recovery Act (RCRA) and state hazardous waste generators, Solid Waste Landfill Facilities (SWLF), Underground Storage Tanks (USTs), Toxic Pits, Hazardous waste manifests (HAZNET), Facility Index System (FINDS), Small Quantity Generators (SQGs), Large Quantity Generators (LQGs), USTs, Historical UST Registered Database (HIST UST), RCRA violations, and Toxic Chemical Release Inventory (TRIS).

Sites that are hazardous waste generators listed on the following databases including: Hazardous waste manifests (HAZNET), FINDS, SQGs, LQGs, USTs, HIST UST, RCRA violations, and TRIS facilities with toxic chemical releases, use, or storage of hazardous materials; and thus, may pose a potential problem in the event of a spill or leak. However, unless these sites also appear in an agency list of contaminated sites, there is no evidence of any problems at this time. Therefore, sites on these lists do not pose a significant hazard to the public or environment.

Table 4.8-A, Database Search Results, lists the sites identified in the EDR reports adjacent to the proposed realignment. There were over 1,200 sites listed in the EDR reports within one mile of the project realignment and because of the large amount of listed sites, only sites adjacent to the alignment are listed in **Table 4.8-A**.

Table 4.8-A, EDR Database Search Results

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
NORTHERN REACH				
84	MOSS BROS INC DBA MOSS BROS	1100 S E STREET	RCRA-SQG,RCRA-NonGen, CA FID UST,HIST UST,HAZNET,EMI	The site generates, transports, stores or treats hazardous waste. The site had an underground storage tank, and the site has pollutant emissions data collected by ARB.
	TRI-CITY TIRES	1121 S E STREET	SLIC	The facility is closed.
	FIRESTONE STORE #2262	1144 S E STREET	FINDS,SWEEPS UST,HAZNET,HIST UST	There is a fuel underground storage tank with no previous leaks, and the site handles hazardous materials.
95	BLOOD BANK OF SAN BERNARDINO	384 ORANGE SHOW ROAD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
101	SHELL SERVICE STATION	505 ORANGE SHOW ROAD	Cortese,CA FID UST,UST,HIST UST	The site contains underground fuel tanks with no records of previous leaks.
	ORANGE SHOW SERVICE CENTER	520 W ORANGE SHOW ROAD	UST,SWEEPS UST	The site contains underground fuel tanks with no records of previous leaks.
104	CHEVRON STATION NO 99125	1198 S E STREET	RCRA-SQG,FINDS,LUST - case closed, CA FID UST,HIST UST,SWEEPS UST,HAZNET	The site generates, transports, stores or treats hazardous waste. There was a case regarding an underground storage tank leak, but has a case closed status.
	TESORO GASOLINE FED MART	499 ORANGE SHOW ROAD	RCRA-SQG,FINDS,Cortese,LUST - case closed,CA FID UST,HIST UST,SWEEPS UST,HAZNET	The site generates, transports, stores or treats hazardous waste. There was a case regarding an underground storage tank leak, but has a case closed status.
	HOME LUMBER COMPANY INC	595 ORANGE SHOW ROAD	HAZNET	There was oil waste generated at the site which was disposed of.
105	MOBIL #18	520 ORANGE SHOW ROAD	Cortese,LUST - pollution characterization,CA FID UST,HIST UST,SWEEPS UST,HAZNET	There is a leaking underground storage tank with ground water and soil contamination. The site is also listed on a local database for oil waste which was disposed of at a local recycler.
113	GAS PLUS	1266 E STREET	CA FID UST,LUST - leak being confirmed,HIST UST,SWEEPS UST,HAZNET	The site had an underground leaking storage tank which is now closed.
	CI-WATER DEPT/EST LIFT	1302 S E STREET	UST,CHMIRS	The site was listed because of an existing underground storage tank, and that the site also reported a hazardous material incident. There was no further information reported on a potential release or spill of hazardous materials.
	HOUSE	1280 SOUTH E STREET	CDL	The site was listed because of a previous drug lab located on-site.
157	PLANET MISSAN AND SB HYUNDAI	735 SHOWCASE DRIVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
204	HUD INTOWN PROPERTIES	563 AWARD DRIVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
221	HOUSE	1600 FAIRWAY AVE	CDL	The site was listed because of a

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
				previous drug lab located on-site.
224	FAIRWAY DR	300 BLOCK FAIRWAY DR	US BROWNFIELDS	The site was listed because it contains hazardous materials and was given money to clean-up.
231	COLTON CITY YARDS	300 BLOCK EAST H STREET	HIST UST,SWEEPS UST	There was a historical underground storage tank.
232	CAL WAL GYSPSIM SUPPLY	125 N 9TH STREET	HIST UST,CHMIRS (2-23-88)	The site had an underground storage tank with a reported hazardous material incident, which was taken care of and closed Feb. 22, 1988.
	VANIR CONSTRUCTION CO INC	225 E VALLEY BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	UNION PACIFIC RAILROAD	113 N 9TH STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	CARROWS RESTAURANT	201 E VALLEY BLVD	EMI	The site is listed because they report pollutant emissions to ARB.
237	BUDGET TRUCK RENTAL	363 E VALLEY BLVD	RCRA-SQG,SWEEPS UST,FINDS,US BROWNFIELDS	The site is a small quantity generator of hazardous materials that has been funded to have the site cleaned up, and is on an old underground storage tank database.
	DOG SHOW SPECIALTIES	360 E VALLEY BLVD	FINDS,FTTS,HIST FTTS	The site is listed because of pesticide enforcement actions and compliance activities.
	WRIGHTS AIR CONDITIONING	395 E VALLEY BLVD	HIST UST,EMI	The site is listed because they report pollutant emissions to ARB and there was an underground storage tank on site.
	COLTON RADIATOR & AIR COND	455 E VALLEY BLVD	RCRA-SQG,HAZNET	The site is a small quantity generator of hazardous materials that was listed by DTSC for hazardous waste manifests.
	GENUINE AUTO PARTS	311 E VALLEY	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	LESLIES DRIVELINE SERVICE	416 E VALLEY BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	JIM-N-I TIRE & SERVICE	444 E VALLEY BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
239	4 WEST 4X4	643 E VALLEY	RCRA-SQG,HAZNET,FINDS,	The site is a small quantity generator of hazardous materials that was listed by DTSC for hazardous waste manifests.
	HERTZ EQUIPMENT RENTAL CORP	500 E VALLEY BLVD	HIST UST,SWEEPS UST,HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests and there was an underground storage tank on-site.
	WRIGHTS AIR CONDITIONING	620 E VALLEY BLVD	HIST UST	The site has a historical registered underground storage tank.
	RAYS AUTO SERVICE	523 EAST VALLEY BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
	GARALD GARLAND	580 E VALLEY BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
249	COLTON TRUCK TERMINAL GARAGE	863 E VALLEY BLVD	RCRA-SQG,UST,FINDS,HIST UST	The site is a small quantity generator of hazardous materials, contains an underground storage tank, and has a historical registered underground storage tank.
	VALLEY MOTORSPORT	847 E VALLEY BLVD	DRYCLEANERS	The site was listed because it is a dry-cleaning business.
	DIXXIE DIESEL TRUCK STOP	791 E VALLEY BLVD	HIST UST,SWEEPS UST	The site is listed because of a previous underground storage tank on-site.
251	HOUSE	1087 WEST VALLEY BLVD	CDL	The site was listed because of a previous drug lab located on-site.
252	RP PUBLICATIONS	991 EAST VALLEY BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
266	COLTON CITY OF ELECTRIC DEPT	150 S 10TH	RCRA-SQG,FINDS,ERNS,UST, SWEEPS UST,HAZNET,ICIS	The site is a small quantity generator of hazardous materials, with an underground storage tank, that reports to DTSC for hazardous waste manifests.
	COLTON CORP YARD	160 S 10TH STREET	HAZNET, EMI	The site is listed because it was reported by DTSC for hazardous waste manifests.
270	EDISON/COLTON 2 (10TH STREET)	EAST OF 10TH STREET	DEED, VCP, ENVIROSTOR (Certified/Operation & Maintenance Facility)	The site contained a voluntary cleanup, and DTSC approved a Soil Remediation Report dated 8/7/02. Approximately 2000 tons of PAH-impacted soil was removed, and a deed restriction was filed. The previous use of the site was a manufacturing gas plant.
272	SANDTANA INDUSTRIES, INC	395 SOUTH RANCHO AVE	HIST UST, FINDS, ERNS	The site is listed because of a historic registered underground storage tank.
	TMP SERVICES INC	425 S RANCHO AVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
273	EDISON/COLTON 2 (10TH STREET)	EAST OF 10TH STREET	Manufactured Gas Plants	Same site as #270.
275	CIRCLE K STORE #555	371 S LA CADENA AVE	HIST UST, RCRA-NonGen, FINDS	The site is listed because it was historically a gas station. No violations have been recorded.
277	OMEGA HWT	500 S RANCHO SUITE F	RCRA-SQG, HAZNET, FINDS	The site is a small quantity generator of hazardous materials that reports to DTSC for hazardous waste manifests.
282	OMEGA HWT	585 BIRCH CT UNIT A	RCRA-NonGen, FINDS	The site does not presently generate hazardous waste, but was previously reporting household hazardous waste disposals.
	ELIZABETH B TAYLER SHUTTERS	525 S RANCHO AVE	EMI	The site is listed because they report pollutant emissions to ARB.
	J.D.'S METAL FABRICATION	555 BIRCH CT #D	EMI	The site is listed because they report pollutant emissions to ARB.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
283	HOGAR PUBLISHING CO INC	510 BIRCH COURT	HAZNET, EMI, FINDS	The site is listed because it was reported by DTSC for hazardous waste manifests.
286	BLACK DIAMOND MACHINE AND REPAIR	234 E O	RCRA-SQG, Cortese, FINDS, LUST - case closed, HIST UST, SWEEPS UST, HAZNET	The site is listed because of a hazardous material incident, a previous leaking underground storage tank, which has a case closed status, and the site was reported by DTSC for hazardous waste manifests.
288	BIRTHINEE ELECTRIC	620 S RANCHO	RCRA-SQG,HIST UST,FINDS,HAZNET,EMI	The site has a historical registered underground storage tank, and is a small quantity generator of hazardous materials with no violations found.
290	HOUSE	655 S 7TH STREET	CDL	The site was listed because of a previous drug lab located on site.
296	AMAZON ENVIRONMENTAL, INC	695 SOUTH RANCHO AVENUE	RCRA-SQG,CA WDS,FINDS,UST,TRIS,FTTS,HIST UST,AST,HAZNET,EMI	The site is a small quantity generator of hazardous materials with no violations found, with underground storage tanks. The site also produces hazardous materials that get recycled.
328	WOODLAND FARMS INC	1600 W AGUA MANSA RD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
333	CLANDESTINE DRUG LAB OPERATOR	1650 AGUA MANSA	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
358	COLTON/SAN BERNARDINO STP,RIX	1990 AGUA MANSA ROAD	FINDS,CA WDS,CHMIRS,HAZNET	The site discharges into the Santa Ana River, and produces hazardous waste on-site.
365	EL COLTON,LLC	2040 AQUA MANSA RD	FINDS,HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	AGUINAGA COMPANY, INC	2046 AGUA MANSA ROAD	SWF/LF	The site contains a composting green waste operation on-site.
375	A Z BUS SALES	1900 RIVERSIDE AVE	RCRA-SQG, FINDS, HAZNET	The site is a small quantity generator of hazardous materials.
	VAN DYK OIL INC	1800 S RIVERSIDE AVE	CA WDS, HAZNET	The site discharges into the Santa Ana River.
377	SAL SALVADOR PRESCHOOL	471 AGUA MANSA ROAD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
380	HOLD COLTON YARD	520 AGUA MANSA ROAD	HIST UST, SWEEPS UST	The site had an underground storage tank, which was listed on a historic database.
391	AGUA MANSA LLC	CORNER OF AGUA MANSA RD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
398	CAN FIBRE	1755 BROWN AVE	RCRA-SQG, FINDS, HAZNET	The site is a small quantity generator of hazardous materials.
	VARNER CONSTRUCTION INC	1893 BROWN AVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	ONDO CONSTRUCTION, GEORGE ONDO	1880 BROWN AVE	EMI	The site is listed because they report pollutant emissions to ARB.
403	B'S POOL SUPPLIES	1691 CONTAINER CIRCLE	SSTS	The site contains hazardous materials that it sells for pools.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
408	FERRELL GAS LP DBA BLUE RHINO	1750 AGUA MANSA RD	FINDS, HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
410	BURRTEC WASTE INDUSTRIES INC	1850 ASUA MANSA RD	RCRA-SQG, FINDS, CHMIRS, UST, HAZNET	The site is a small quantity generator of hazardous materials with an underground storage tank, and the site also produces hazardous materials that need to be disposed of off-site.
	ROBERT A NELSON TRANSFER STATION	1830 AGUA MANSA RD	SWF-LF, SWRCY, CHMIRS, HAZNET	The site is a transfer station and reported finding drums of oil which needed to be disposed of properly.
	TRICO DISPOSAL	1995 AGUA MANSA RD	CA WDS, HAZNET, EMI	The site discharges into the Santa Ana River, and reports to DTSC.
	E L YEAGER CONSTRUCTION	1995 AQUA MANSA RD	CA WDS,FINDS,CA FID UST,UST,SWEEPS UST,FTTS,HIST FTTS	The site discharges into the Santa Ana River, reports emissions to AQMD, and has had underground storage tanks listed on historic databases.
413	FLEETWOOD TRAVEL TRAILERS	6001 20TH STREET	RCRA-SQG, FINDS, HIST UST, HAZNET, EMI	The site is a small quantity generator of hazardous materials with underground storage tanks.
417	RYDER TRUCK RENTAL	5880 20TH STREET	RCRA-SQG, FINDS, ERNS, CA FID UST, SLIC, UST, HIST UST, SWEEPS UST	The site is a small quantity generator of hazardous materials with underground storage tanks.
	CERTAIN-TEED CORPORATION	2100 AVALON STREET	RCRA-SQG, FINDS, HIST Cal-Sites, CA WDS, Cortese, FTTS, HIST FTTS, LUST – case closed, RESPONSE, HAZNET, EMI, ENVIROSTOR (Certified Facility)	The site had an underground storage tank with a potential effect on the soil, and a state response to the leak with remediation with oversight from DTSC.
420	OGLEBAY NORTON INDUSTRIAL SAND	2157 AVALON ST	CA WDS, HAZNET	The site produces hazardous wastes that get disposed of at a transfer station; the site discharges water into the Santa Ana River; and has the potential to affect the water.
428	SIERRA PACIFIC ELECTRIC INC	2542 AVALON STREET	RCRA-SQG, FINDS, Cortese, LUST– case closed, CHMIRS, CDL, HAZNET, EMI	The site is listed because of a hazardous material incident, a previous leaking underground storage tank, which has a case closed status; and the site was reported by DTSC for hazardous waste manifests.
442	HOUSE	5791 28TH STREET	CHMIRS, CDL	The site had an illegal drug lab.
449	HUD INTOWN PROPERTIES	5788 KENWOOD PLACE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
481	INTOWN PROPERTIES	3392 JENNIE STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
485	HUD INTOWN PROPERTIES	3471 RIVERVIEW DRIVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
493	MULTI FAMILY BUILDERS	5875 MISSION BLVD	RCRA-SQG, FINDS, HAZNET	The site is a small quantity generator of hazardous waste.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
494	CIRCLE K	3720 RIVERVIEW DRIVE	Cortese, LUST – case closed	The site had an underground storage tank leak that affected the soil only, with a case closed status.
497	RUSTYS BUGS	5840 MISSION BLVD	RCRA-SQG, FINDS	The site is a small quantity generator of hazardous waste.
	A-1 LOU'S RENTALAND	5828 MISSION BLVD	Cortese, LUST – case closed, Notify 65, HAZNET	The site had a leaking underground storage tank which affected soil only; and had asbestos containing waste that was disposed of at a landfill.
502	STOP-N-GO	5804 MISSION BLVD	Cortese, LUST - post remedial action monitoring, CA FID UST, UST, SWEEPS UST, CHMIRS, HAZNET	The site is listed because of a hazardous material incident, a previous leaking underground storage tank which is in post remediation monitoring; and the site was reported by DTSC for hazardous waste manifests.
	EVELYN BOYER	5793 MISSION BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	AUTOZONE #5580	3782 RIVERVIEW DR	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
506	INTOWN PROPERTIES	5885 JANET STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
511	HUD	6019 42ND ST	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
518	HUD	5845 42ND STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
546	VETERANS MEMORIAL PARK	4393 RIVERVIEW DRIVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
553	PACIFIC AVENUE ELEMENTARY	6110 45TH STREET	FINDS,HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
556	HUD	5938 LIMONITE AVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
562		5980 LIMONITE #7	CHMIRS	The site is listed because a suspicious envelope was found on-site.
565	HUD	6090 ALLWOOD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
570	RON LANTING	6690 LIMONITE FRONTAGE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
571	HOUSE	7015 SKYVIEW	CHMIRS,CDL,HAZNET	The site had an illegal drug lab.
579	STPINDIAN HILLS WRP	5979 EL PALOMINO	CHMIRS,HAZNET	The site produces hazardous materials that get disposed.
580	HUD	7531 SKYVIEW RD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
582	7-ELEVEN STORE	6060 CAMINO REAL	HIST UST,HAZNET	The site has an underground storage tank listed on a historic database.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
583	DESMOND'S CHARBROILER, DESCOND	7700 LIMONITE AVENUE	EMI	The site is listed because they report pollutant emissions to ARB.
584	MOBIL STATION	7850 LIMONITE AVE	Cortese, LUST – remedial action (cleanup) underway, CA FID UST,UST,HIST UST,SWEEPS UST,HAZNET	The site is listed because of a hazardous material incident, a previous leaking underground storage tank which is being remediated; and the site was reported by DTSC for hazardous waste manifests.
	DE ANZA CLEANERS	7726 LIMONITE AVE	DRYCLEANERS,HAZNET,EMI	The site is a dry cleaner and is listed because they report pollutant emissions to ARB; and was reported by DTSC for hazardous waste manifests.
585	777 CLEANERS	7920 LIMONITE AVE STE D	DRYCLEANERS,HAZNET	The site is a dry cleaner and is listed because they were reported by DTSC for hazardous waste manifests.
CENTRAL REACH				
588	SHELL SERVICE STATION	6100 CLAY	RCRA-SQG,FINDS,Cortese,LUST - remedial action (cleanup) underway, CA FID UST,UST,SWEEPS UST,CHMIRS	The site is listed because of a hazardous material incident, a previous leaking underground storage tank, which has a case closed status, and the site was reported by DTSC for hazardous waste manifests.
	TOSCO	7890 LIMONITE AVENUE	CHMIRS,LUST - case closed, ERNS, CA FID UST,HIST UST,SWEEPS UST,HAZNET	The site is listed because of a hazardous material incident, a previous leaking underground storage tank which has a case closed status; and the site was reported by DTSC for hazardous waste manifests.
	ONE HOUR PHOTOLAND	7900 LIMONITE AVENUE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	RITE AID	8015 LIMONITE AVENUE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
595	ROBERT E PETERS	6180 CLAY STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
605	RIVERSIDE MEDICAL CLINIC	6250 CLAY STREET	RCRA-SQG,FINDS,HAZNET	The site is a small quantity generator of hazardous waste, with no violations found; the site also produces hazardous waste that gets recycled.
627		6300 CLAY STREET	CHMIRS	Sewage waste was released into the street.
638	WESTERN METAL LATH	6510 GENERAL DR	RCRA-SQG,CHMIRS,HAZNET, EMI	The site is a small quantity generator of hazardous waste with no violations found.
639		6634 CLAY STREET	CHMIRS	Sewage waste was released into the street.
640	PEDLEY ROAD YARD	6851 VAN BUREN BLVD	Cortese,LUST - case closed,CA FID UST,HIST UST,AST,SWEEPS UST,HAZNET	The site had an underground storage tank leak that affected the drinking water that is now a case closed status.
641	RIVERSIDE SAND CO		MINES	The site is listed because of the mining activities on-site.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
644	VAN BUREN & CLAY HOUSEHOLD	CLAY STREET AT VAN BUREN	CA WDS,ERNS	Illegally abandoned wastes were found on-site.
667	CUSTOM CAMP VANS & SERVICE	7575 JURUPA AVE	HAZNET,EMI	The site generates hazardous waste that it recycles and has to report to AQMD emissions.
682	ROBERTSON READY MIX INC	6830 VAN BUREN BLVD	CA WDS,CA FID UST,HIST UST,SWEEPS UST	The site has a historical registered underground storage tank.
697	DANIELS CREATION	6690 VAN BUREN BLVD	RCRA-SQG,FINDS	The site is a small quantity generator of hazardous materials.
698	A& A AUTO BODY	7400 MORRIS STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	COLOR BY WOZ	6680 VIEW PARK COURT	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	SKYSPARES PARTS	6660 VIEW PARK COURT	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	ANDREW ENGINEERINGS INC	6640 VIEW PARK COURT	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
712	HOUSE	6506 DOOLITTLE AVE #805	CDL	The site was listed because of a previous drug lab located on-site.
713	THOMAS JEFFRAY ROBERTS	6505 DOOLITTLE AVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
727	ECONO FIRESTONE AND TIRE CENTER	7445 ARLINGTON AVE	RCRA-LQG, FINDS, Cortese, LUST - case closed, HAZNET	The site is a large quantity generator of hazardous materials; and had a previous underground storage tank that leaked and affected drinking water which now has a case closed status.
	GREASE MONKEY	7437 ARLINGTON AVE	UST,HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests and there is an underground storage tank, with no previous leaks identified.
		7501 ARLINGTON AVE	CHMIRS	On 9-16-91 there was a hazardous waste incident which is closed.
735	MOBIL	7290 ARLINGTON AVE	RCRA-LQG,LUST - case closed,ERNS,CA FID UST,UST,HIST UST,SWEEPS UST,CHMIRS,HAZNET	The site had a leaking underground storage tank which affected drinking water but is now at a case closed status with the site still containing underground storage tanks; and the site generates hazardous waste that gets disposed.
	CHOICE CAPITOL	6390 VAN BUREN BLVD	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
739	INLAND EMPIRE DRY CLEANERS	6266 VAN BUREN BLVD	FINDS,SLIC,DRYCLEANERS,EMI	The site is listed because it handles hazardous materials and has to report to DTSC and AQMD emissions. No violations were found on-site.
752	HUD	8964 PEMBROKE AVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
767	HUD	8947 HOLLY LANE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
780	COUNTY RIVERSIDE HOUSING AUTHORITY	4675 JACKSON AVENUE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
785	JACKSON ELEMENTARY	4585 JACKSON STREET	FINDS	The site is listed because it was reported by DTSC for hazardous waste manifests.
801	JOHN L GINGER	4462 JACKSON	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
807	ARLINGTON 1,3,4	4375 JACKSON STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
811	ADVOCATE SCHOOL	4317 JACKSON STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
819	HOUSING AND URBAN DEVELOPMENT	4115 WHEELER DRIVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
826	EMPIRE PATHOLOGY, GERALD MIDDLETON	8990 GARFIELD AVE #13	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
829	PARKVIEW COMMUNITY HOSPITAL	3960 SHERMAN	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
	CITY OF RIVERSIDE PARK AND REC	4015 JACKSON	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
841	PACIFIC BELL	3850 JACKSON STREET	FINDS,HAZNET,EMI	The site is listed because it had asbestos hazardous waste found on site.
	PARKVIEW COMMUNITY HOSPITAL	3865 JACKSON STREET	CA FID UST,UST,SWEEPS UST,HAZNET	The site handles hazardous materials and has an underground storage tank.
843	SHERMAN INDIAN HIGH SCHOOL	9010 MAGNOLIA AVE	FINDS, Cortese, LUST - case closed,CA FID UST,HIST UST,FTTS,HIST FTTS,SWEEPS UST,HAZNET	There was a chlorine gas tank leak; there was asbestos waste at the site; there was a leaking underground storage tank which is now a case closed status; but soil was impacted.
	RIVERSIDE MEDICAL CLINIC	9041 MAGNOLIA AVE	FINDS,HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
850	PACIFIC BELL	2600 CAMINO RAMON ROOM	RCRA-LQG,RCRA-NonGen,FINDS,CA FID UST,UST,HIST UST,SWEEPS UST,CHMIRS	The site used to be a large quantity generator of hazardous waste which it no longer does; but, there are reported historic underground storage tanks and currently there is an underground storage tank on-site.
879	BUREAU OF INDIAN AFFAIRS	3471 JACKSON STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
884	KEITH & CASSANDRA SEARS	9108 INDIANA AVE	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
894	HUD INTOWN PROPERTIES	3178 JACKSON STREET	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
907	W-H TANKLINES (CORONA)	3010 JOSHUA TREE ROAD	FINDS,ICIS	The site was listed because a hazardous waste action was preformed; but, no further details were addressed in the report.
909	ROBERT PAULOS	9130 BAMBOO	HAZNET	The site is listed because it was reported by DTSC for hazardous waste manifests.
910	ARLINGTON HIGH SCHOOL	2951 JACKSON STREET	RCRA-LQG,FINDS,CHMIRS (4-29-90),HAZNET,EMI	The site is a large quantity generator of hazardous materials and is listed on database sites because it is an education facility; and a hazardous waste incident was reported and taken care of on 4-29-90.
CENTRAL FEEDER CONNECTION				
4	ARTH 80	NW COR NEVADA AND SAN BERNARDINO, REDLANDS	ERNS, CA FID UST, SWEEPS UST	The site is listed on ERNS because in 1987, oil leaked from some drums and was dumped into the street. Oil was cleaned up. The site has three underground storage tanks.
5	ARTH 80, WIND MACHINE	NW COR NEVADA AND SAN BERNARDINO, REDLANDS	HIST UST	The site has three underground storage tanks. No leaks have been reported.
6	M BLOCK AND SONS/REDLANDS INDUSTRIAL CENTER	26763 SAN BERNARDINO AVE, REDLANDS	SAN BERNARDINO CO. PERMIT	Site is the location of a HAZ MAT handling Company.
7	PRIME-LINE PRODUCTS/CALIFORNIA PALMS BUSINESS CENTER	26950 SAN BERNARDINO AV, REDLANDS	HAZNET, SAN BERNARDINO CO. PERMIT	Site listed to handle aqueous solutions with less than 10% organic residues and hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
8	GENCO HERSHEY INC.	2300 W. SAN BERNARDINO AVE, REDLANDS	HAZNET	The site is listed on HAZNET because of soils contaminated with organics (oxygenated solvents) from site clean-up. Soils were disposed of in a landfill.
9	REDLANDS HEIGHTS/ REDLANDS FARMING COMPANY/BLUE GOOSE GROWERS	780 W. SAN BERNARDINO AVE, REDLANDS	HAZNET, SAN BERNARDINO CO. PERMIT, ENVIROSTAR	Site is listed due to handling and disposal of off-specification, aged or surplus inorganics and is a permitted handler of aqueous solutions with less than 10% organic residue, waste oil and mixed oil.
CLAY STREET CONNECTION				
1	NOT REPORTED	5719 PEDLEY RD	CHMIRS	Debris was placed in main sewer line causing blockage. Cleaned up by responsible party.
7	SHELL SERVICE STATION/ MOSTAMAND INC.	6100 CLAY ST	RCRA-SQG, FINDS, HIST CORTESE, LUST, CA FID LUST, UST,SWEEPS LUST,CHMIRS,HAZNET	3 underground storage tanks. Small quantity hazardous waste generator; benzene, aqueous solutions with less than 10% organic residues, and other organic solids. Disposed of via treatment tank, recycling, and transfer

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
				station. MTBE detected from LUST, soil and aquifer involved. Case still active.
	FRESH & EASY NEIGHBORHOOD MARKET	LIMONITE AVE/ CLAY ST	NDPES	Storm water construction.
	RITE AID #5718	8015 LIMONITE AVE	HAZNET	Use of photochemicals/ photoprocessing waste, alkaline solutions pH greater than 12.5
	TOSCO/ CIRCLE K #5245	6105 CLAY ST	LUST, CHIMRS	MTBE detected, aquifer involved and motor oil found in dumpster. Cleaned up by Riv. Co. Health. Site closed.
	STOP N GO #2083	6105 CLAY ST	CA FID UST, SWEEPS UST	3 underground storage tanks. I for waste, 2 for gasoline
8	PLAZA CLEANERS	8304 LIMONITE AVE	HAZNET, DRYCLEANERS	Use of liquids with halogenated organic compounds and aqueous solutions with less than 10% total organic residues and halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
9	FIRESTONE COMPLETE AUTO CARE	8360 LIMONITE	FINDS	Location of used oil recycling collections.
	MARSHMAN'S SERVICE/ BRAKES PLUS	8665 LIMONITE AVE	HAZNET, LUST, HIST UST, SWEEPS UST, CA FID UST, HIST CORTESE	Site of waste oil and mixed oil. Disposed of through recyclers. LUST. Gasoline leak. Case open. 5 Total UST.
11	HIGH DESERT OIL CO. INC, #596/ ARCO AM/PM #596	8677 LIMONITE AVE	HAZNET, UST	Waste oil, mixed oil, other organic solids, and aqueous solutions with less than 10% total organic residues disposed of via recycler or transfer station. 5 underground storage tanks containing gasoline/diesel.
	KRAGEN AUTO PARTS #769	8702 LIMONITE	HAZNET	Site of unspecified oil-containing waste, liquids with halogenated organic compounds, and oil/water separation sludge.
13	ABD IRRIGATION EQUIPMENT CO.	8444 LIMONITE AVE	HIST LUST	2 underground storage tanks on-site, regular, and unleaded.
14	KEN BROWN/ULTIMATE PERFORMANCE	8584 LIMONITE AVE	HAZNET	Site of waste oil and mixed oil, and latex waste. Disposed of through a recycler.
14	PEARL E ACOSTA	8603 LIMONITE	HAZNET, NDPES	Asbestos-containing waste. Disposed of at landfill. HANET listing due to waste oil and mixed oil. NDPES listing due to storm water construction.
LA SIERRA PIPELINE				
1	ERWIN FAMILY LLC	2292 LA SIERRA AVENUE	HAZNET, LUST	Site of treatment tank and un-specified oil-containing waste. Also site of leaky underground gasoline storage tank which potentially affected a drinking water aquifer. Case is currently open and in remediation.
2	NOT REPORTED	2202 LA SIERRA AVE	CDL	Site where an illegal drug lab was operated or drug lab equipment and/or materials were stored. Unknown status.

SITE NO.	SITE	ADDRESS	FEDERAL, STATE, AND LOCAL DATABASES	STATUS OF SITE
MOCKINGBIRD CONNECTION				
1	NOT REPORTED	14791 MOCKINGBIRD CYN	CDL	Site where an illegal drug lab was operated or drug lab equipment and/or materials were stored. Unknown status.

Based on the results of the EDR Reports, the Central Reach of the proposed project will pass within the close vicinity of forty-eight hazardous materials sites under various regulatory statuses. However, the Central Reach is not expected to cross any of these sites. Rather, it will be generally constructed within road rights-of-way, with the exception of the Santa Ana River crossing, thereby avoiding the hazardous materials sites. Similarly, the Northern Reach will be primarily constructed within road rights-of-way and will avoid the currently identified hazardous materials sites. The Central Feeder Connection, Clay Street Connection, Mockingbird Connection, and La Sierra Pipeline will also be generally constructed within the road rights-of-way and should avoid the currently identified hazardous materials sites. It should be noted that additional hazardous materials sites may be added to the lists of documented sites before construction of the Northern Reach begins in approximately 10 years.

Although no significant impacts related to these sites (**Table 4.8-A**) are anticipated, common types of contamination could be encountered during construction of the proposed project resulting from LUST, poor chemical handling, and accidental or intentional unauthorized chemical releases. However, through implementation of the below-listed mitigation measures, potential impacts will be reduced to **less than significant levels.**

Threshold: *The project would result in a safety hazard for people residing or working in the project area.*

Airport Vicinity Height Guidelines

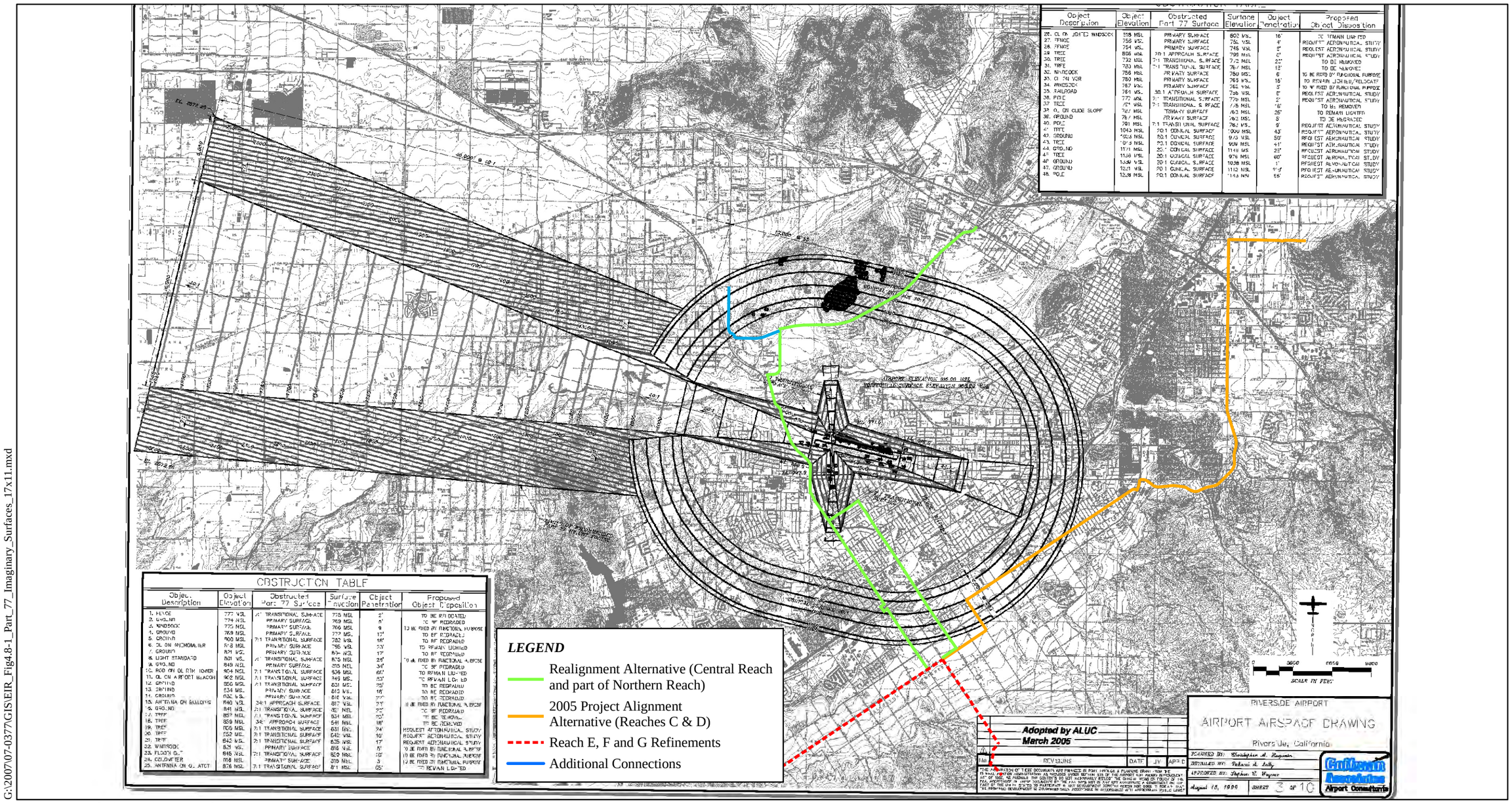
The Federal Government has developed standards for determining obstructions in navigable airspace. Federal Aviation Regulations Part 77 defines a variety of imaginary surfaces at certain altitudes around airports. Part 77 surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface. Collectively, Part 77 surfaces around an airport define a bowl-shaped area with ramps sloping up from each runway end. Part 77 standards are not absolute height restrictions, but instead, identify elevations at which structures may present a potential safety problem. Penetrations of Part 77 surfaces generally are reviewed on a case-by-case basis.

Part 77, Section 77.13.2.i requires that any construction or alteration of a greater height than an imaginary surface extending upward and outward at a 100-to-1 slope from the nearest point of the runway will require the preparation of Federal Aviation Administration (FAA) Notice of Proposed Construction or Alteration (FAA Form 7460-1). This notice must be submitted to the FAA at least 30 days before the date that the proposed construction or alteration is to begin or the date that the application for a construction permit will be filed, whichever is earlier. Notwithstanding, the established airfield elevation of 816.0 mean sea level (msl) set forth for the Riverside Municipal Airport, the elevation of Runway 9-27 at its nearest point to the RCF

Realignment Project (Van Buren Blvd. and Doolittle Avenue) is 758.0 msl; and the elevation of Runway 16-34 is 771.8 at its north end and 747.9 at its south end (**Figure 4.8-1, F.A.R. Part 77 Imaginary Surfaces**).

Surface elevations along the proposed RCF realignment range from approximately 670 msl to approximately 1,020 msl. Near the Riverside Municipal Airport, the surface elevations along Van Buren Boulevard and Doolittle Avenue range from approximately 725 to 742 mean sea level (msl); and along Jackson Street range from approximately 742 msl near Van Buren Boulevard to approximately 895 msl near Cleveland Avenue.

Therefore, depending on the elevation at individual construction sites, the distance from Riverside Municipal Airport runways, and the height of construction equipment; future development of portions of the RCF Realignment Project may encroach into this 100-to-1 slope imaginary surface and will require the filing of Form 7460-1 with the FAA. However, potential impacts upon airport operations will be mitigated to **less than significant levels through implementation of mitigation measure MM Haz 8**.



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Source: Riverside County Airport Land Use Commission

Figure 4.8-1
F.A.R. Part 77 Imaginary Surfaces

Realignment Alternatives Proposed Mitigation Measures/Minimization

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 or reduce the potential significant adverse impacts to hazards to below the level of significance.

*As described above, the following mitigation measures **MM Haz 1** through **MM Haz 7**, below, set forth in the 2005 PEIR are still applicable to the proposed RCF Pipeline Realignment and relate to encountering previously contamination in the soils. **MM Haz 5** identifies local jurisdictional agencies approved to oversee hazardous waste cleanups; **MM Haz 5a** is added to address additional agencies through which the Realignment Alternatives pass. Mitigation measures HAZ-1 through HAZ-4 are mitigation measures established in the Reaches E, F, and G 2008 Refinement EIR. The measures below mitigate for all the project alternatives. The MMs below indicate which measures from the Reaches E, F, and G 2008 Refinement EIR are incorporated into a particular MM. Three of the Reaches E, F, and G 2008 Refinement EIR series mitigation measures (HAZ-1, 2 and 3) are applicable to the entire project and are listed last as MM Haz 9 which addresses the potential for accidental spills during the construction process. MM Haz 8 incorporates HAZ-4. Mitigation measure **MM Haz 10** has been added by this SEIR/EIS to address potential impacts related to the construction of the realigned pipeline within proximity to the Riverside Municipal Airport.*

MM Haz 1: Avoid sites and alternative alignments on or near environmentally contaminated property. If avoiding a particular site compromises physical engineering requirements, then the following mitigation measures shall be implemented to reduce environmental effects related to hazards as a result of the project to a level below significance.

MM Haz 2: Check potential sites for listing on the most recent Hazardous Waste and Substances List (List) provided by the San Bernardino County Division of Hazardous Materials and by the Riverside County Department of Environmental Health pursuant to Section 65962.5 of the Government Code. If a selected site is on the List, avoidance of that property will be the first consideration.

MM Haz 3 (HAZ-4): If the selected future alignment traverses a site listed on the List and avoidance is not feasible or if there are other indications that a site could be contaminated (i.e., where pipeline alignment crosses railroad rights-of-way), a Phase 1 Environmental Site Assessment (ESA) will be prepared.

MM Haz 4: If the Phase 1 ESA identifies possible contamination on the pipeline alignment, then recommended subsurface investigation measures listed in the Phase I ESA will be implemented. Based on subsurface investigations characterizing subsurface contamination, remediation measures shall be implemented for the applicable site or an alternative alignment will be chosen.

MM Haz 5: All environmental investigation and/or remediation shall be conducted under a Work plan approved by jurisdictional regulatory agencies overseeing hazardous waste cleanups. For the cities of Corona and Riverside, the local agencies are City of Corona Fire Department and City of Riverside Fire Department. For the Cities of San Bernardino, Colton and Grand

Terrace, the enforcement agency is the County of San Bernardino Fire Department, Hazardous Materials Division. In the unincorporated Riverside County, the Department of Environmental Health administers a program for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated, or recycled, and to regulate by the issuance of permits, the activities of establishments where hazardous waste is generated. For any jurisdiction that may not be or have access to a responsible party for this purpose, the California Department of Toxic Substances Control shall be used to provide oversight.

MM Haz 5a: All environmental investigation and/or remediation shall be conducted under a Work plan approved by jurisdictional regulatory agencies overseeing hazardous waste cleanups. For the City of Redlands, the local agency is City of Redlands Fire Department. For the City of Rialto and County of San Bernardino, the enforcement agency is the County of San Bernardino fire Department, Hazardous Materials Division. For any jurisdiction that may not be or have access to a responsible party for this purpose, the California Department of Toxic Substances Control shall be used to provide oversight.

MM Haz 6: Prior to any excavation or soil removal action on known contaminated sites, or if contaminated soil (i.e., soil with a visible sheen or detectable odor) is encountered, complete characterization of the soil will be conducted. Appropriate sampling shall be conducted prior to disposal of the excavated soil. If the soil is contaminated, it shall be properly disposed of it according to Land Disposal restrictions. If site remediation involves the removal of contamination, then contaminated material will need to be transported off-site to a licensed hazardous waste disposal facility. This may incrementally decrease the volume available at a hazardous waste disposal site or incrementally increase the emissions of a hazardous waste incinerator. These impacts are not considered significant. If the proposed project plans on importing soils to backfill the areas excavated, proper sampling shall be conducted to make sure that the imported soil is free of contamination.

MM Haz 7: If during construction of the project, soil and/or groundwater contamination is suspected, construction in the area shall cease and appropriate Health and Safety measures shall be implemented. The project proponent shall contact the respective jurisdictional enforcement agency (see **MM Haz 5**) to obtain the necessary information on appropriate measures and their implementation.

MM Haz 8: If the selected future alignment traverses a site listed on the List and avoidance is not feasible or if there are other indications that a site could be contaminated (i.e., where pipeline alignment crosses railroad rights-of-way), an electronic "sniffer" capable of detecting actionable levels of hydrocarbons shall be employed during excavation activities in proximity to the previously referenced sites in lieu of preparing a Phase 1 Environmental Site Assessment (ESA) as required in MM Haz 3. Should actionable levels of contaminants be encountered, these materials shall be removed and disposed of in accordance with applicable regulations or pursuant to **MM Haz 4** through **MM Haz 7.**

MM Haz 9: (HAZ-1, 2 and 3): To reduce potentially hazardous conditions and minimize the impacts from the handling of potentially hazardous materials, the following shall be included in WMWD construction specifications for all construction projects covered by this SEIR/EIS:

- The contractor(s) shall enforce strict on-site handling rules to keep construction and maintenance materials out of receiving waters and storm drains. In addition, the

contractor(s) shall store all reserve fuel supplies only within the confines of a designated construction staging area, and regularly inspect all construction equipment for leaks.

- The contractor(s) shall prepare a *Health and Safety Plan.* The plan shall include measures to be taken in the event of an accidental spill.
- The construction staging area(s) shall be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain towards receiving waters or storm drain inlets.

MM Haz 10: A minimum of 45 days prior to commencement of the Central Reach construction projects and a minimum of 45 days prior to commencement of the Clay Street Connection construction projects, the manager of the Riverside Municipal Airport shall be consulted in order to determine whether construction activities and construction equipment will encroach into the 100-to-1 imaginary surface surrounding the Riverside Municipal Airport. If it is determined that there will be an encroachment into the 100-to-1 imaginary surface, a minimum of 30 days before the date of the proposed construction, Western Municipal Water District shall file a FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, for the construction activity. If FAA determines that the project would potentially be an obstruction unless reduced to a specified height, WMWD will work with FAA to resolve any adverse effects on aeronautical operations. These could include things as, but not limited to:

- The use of construction equipment that is short enough to avoid encroachment into the imaginary surface;
- Alternative contruction methods to avoid the use of cranes or other tall equipment; or
- Construction at night when the airport is closed.

MM Haz 11: To avoid potential impacts resulting from temporary flight hazards within the Flabob Airport Influence Area, no construction equipment shall exceed 70 feet in height within the Northern Reach where it is located in Avalon Street south of the 60 Freeway, Mission Boulevard and Limonite Street.

Realignment Alternatives Determination of Significance under CEQA

With implementation of local, state, and federal regulations and the mitigation measures listed above, potential significant environmental effects related to hazards and hazardous materials will be reduced to less than significant levels.

4.8.4 No Project/Action Alternative

The No Project/Action Alternative will have no affect on or receive any impact from hazardous materials because nothing will be built.

4.9 LAND USE AND PLANNING

Potential impacts related to the potential to physically divide an established community; to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and to conflict with any applicable habitat conservation plan or natural community conservation plan were all found to be less than significant in the Initial Study/NOP prepared for this project (Appendix A). In response to the Initial Study/NOP, a comment letter from the City of Riverside Planning Department requested that the SEIR discuss the City of Riverside General Plan 2025 and a comment letter from the City of Colton Planning Department requested that the SEIR contain a discussion of the City of Colton General Plan were received. These comments and concerns are incorporated into this section of the SEIR.

The focus of the following discussion is related to the potential impacts related to whether the proposed project will conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance). Consistency with any applicable habitat conservation plan or natural community conservation plan is addressed in Section 4.3 (Biological Resources) of this SEIR.

In addition to the 2005 Certified Program EIR (2005 PEIR) and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- City of Colton Planning Department, *General Plan Map*, Updated April 21, 2008. (Available at the City of Colton Community Development Department – Planning Division.)
- City of Colton, *Final Preliminary General Plan for the City of Colton*, May 5, 1987. (Available at http://www.ci.colton.ca.us/CD_Plan.html, accessed on July 31, 2009.)
- City of Corona Community Development Department, *City of Corona General Plan*, March 17, 2004. (Available at http://www.discovercorona.org/index.cfm?section=City%20Departments&page=Community%20Development&cat=Planning%20Division&viewpost=2&ContentId=315, accessed on July 31, 2009.)
- City of Redlands Community Development Department, *1995 General Plan*, August 1995, As Amended on December 12, 1997. (Available at http://www.ci.redlands.ca.us/community/general_plan.htm, accessed on November 18, 2009)
- City of Rialto Development Services Department, *City of Rialto General Plan*, March 31, 1992. (Available at the City of Rialto Development Services Department – Planning Division.)

- City of Riverside Planning Department, *General Plan 2025*, November, 2007. (Available at http://www.riversideca.gov/planning/cityplans.asp, accessed on November 18, 2009.)
- City of San Bernardino Development Services Department, Division of Planning, *San Bernardino General Plan*, November 1, 2005. (Available at www.ci.san-bernardino.ca.us/depts/devserv/planning/default.asp, accessed on December 28, 2008.)
- County of Riverside, *Riverside County Integrated Project General Plan, County of Riverside*, Adopted October 7, 2003. (Available on November 18, 2009 at http://www.rctlma.org/genplan/content/gp.aspx, accessed on November 18, 2009.)
- County of Riverside, *Jurupa Area Land Use Plan*, October 2003. (Available at http://www.rctlma.org/genplan/content/gp.aspx, accessed on November 18, 2009.)
- County of Riverside, *Temescal Canyon Area Land Use Plan*, October 2003. (Available at http://www.rctlma.org/genplan/content/gp.aspx, accessed on November 18, 2009.)
- County of Riverside, *Lake Mathews/Woodcrest Land Use Plan*, October 2003. (Available at http://www.rctlma.org/genplan/content/gp.aspx, accessed on November 18, 2009.)
- County of San Bernardino Land Use Services Department, *San Bernardino 2007 General Plan*, March 13, 2007. (Available at http://www.co.san-bernardino.ca.us/landuseservices/general_plan/Default.asp, accessed on November 18, 2009.)

4.9.1 Setting/Affected Environment

As shown in **Figure 3.0-1, Regional Location**, the Riverside-Corona Feeder (RCF) Realignment Alternatives will extend across multiple jurisdictions, including unincorporated areas of San Bernardino and Riverside counties and the cities of San Bernardino, Colton, Corona, Redlands, Rialto, and Riverside. The 2005 Project Alignment also traverses the City of Grand Terrace. The Realignment Alternative with Additional Connections also includes connections to other regional facilities. These connections are located in unincorporated Riverside County (Clay Street Connection and a portion of La Sierra Pipeline Connection), unincorporated San Bernardino County and the City of Redlands (Central Feeder Connection), and the City of Riverside (Mockingbird Connection and a portion of La Sierra Pipeline Connection).

The proposed project will be constructed primarily in the rights-of-way of existing roads, under I-10, I-215, State Route 60, and State Route 91; and under the Santa Ana River and other lesser creeks and drainages. The proposed project will affect properties in the jurisdictions listed above, with a variety of land use and zoning designations. Land use designations of potentially affected properties are presented below.

4.9.2 Summary of 2005 Project Alignment Certified Program EIR for Riverside-Corona Feeder Project

The Initial Study/NOP for the 2005 Project Alignment of the Riverside-Corona Feeder Project (Appendix A of the 2005 Certified EIR) identified the land use designations of potentially affected properties located within the cities of San Bernardino, Colton, Grand Terrace, Riverside, and Corona; and unincorporated portions of Riverside County. The 2005 Project Alignment Initial Study/NOP concluded that the proposed 2005 Project Alignment would be consistent with the existing general plans and that the issue would not be discussed in the 2005 PEIR. Therefore, the 2005 PEIR did not include a discussion of the general plan land use designations. However, due to comments received during the 2008 NOP review period, land use designations will be analyzed, herein.

The Initial Study/NOP for the 2005 Project Alignment also cited Section 53091(c) and (d) of the California Government Code which exempts public agency projects such as the Riverside-Corona Feeder Project, from city and county zoning regulations. Therefore, the 2005 PEIR did not include a discussion of zoning ordinances. However, due to comments received during the 2008 NOP review period, zoning designations will be analyzed, herein.

4.9.3 Analysis of the Riverside-Corona Feeder Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The Realignment Alternatives will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR. The 2005 PEIR did not include a discussion of the land use designations of potentially affected properties. The following discussion will therefore include a description of the land use designations of properties potentially affected by all reaches of the 2005 Project Alignment. The only jurisdiction through which the 2005 Project Alignment passes that is not the same as the Realignment Alternatives is the City of Grand Terrace. Land use designations in Grand Terrace will also be discussed to address all aspects of the three action alternatives.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Western Municipal Water District's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to land use and planning may be considered potentially significant if the project would:

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

Related Regulations

California Government Code
Paragraphs (d) and (e) of Section 53091 of the California Government Code sets forth the following provisions applicable to the construction of facilities for the production and transmission of water:

(d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.

(e) Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.

Design Considerations/Avoidance

The proposed project is a utility project with primarily underground facilities located in streets, therefore, no specific design measures would be implemented that affect the general plan land use designations of property adjacent to the proposed pipeline alignment.

Potential Significant Impacts/Environmental Consequences

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

Local Zoning Ordinances/Codes

As described above, Paragraphs (d) and (e) of Section 53091 of the California Government Code exempts the location or construction of facilities for the production, generation, storage, treatment, or transmission of water from county and city building and zoning ordinances. Pursuant to these Government Code provisions, the proposed project is exempt from the building and zoning ordinances of the jurisdictions through which the project will be constructed. Therefore, the following discussion will be limited to the land use designations of potentially affected properties located within the cities of Corona, Colton, Redlands, Rialto, Riverside, and San Bernardino; and the unincorporated areas of Riverside and San Bernardino Counties.

General Plan Land Use Designations

The discussions below related to General Plan Land Use Designations are presented in alphabetical order by jurisdiction.

City of Colton

2005 Project Alignment Alternative

Portions of Reaches A and B of the 2005 Project Alignment traverse the City of Colton as shown on **Figure 4.9-1, City of Colton General Plan – Land Use Map**. South of the Santa Ana River, Reach A will run west on Steel Road (City of Colton) to a point approximately 600 feet east of Interstate 215, south through an industrial park to Cooley Drive, south on Cooley Drive, southwesterly on Washington Street then east on Barton Road for approximately 1,100 feet where the pipeline will connect to the 100 CFS mainline meter facility on Barton Road located just east of Reche Canyon Road. The land use designations along these roadways are listed in **Table 4.9-A, City of Colton Land Use Designations**.

Reach B would continue southwesterly in Barton Road for approximately 2,900 feet with up to 60-inch diameter pipeline into the City of Grand Terrace.

Realignment Alternatives

A portion of the Northern Reach of the proposed Realignment Alternatives traverses through the City of Colton. As shown in **Figure 4.9-1,** the proposed project will enter the City of Colton from the City of San Bernardino and continue west in Fairway Drive to Sperry Drive, south in Sperry Drive to Valley Boulevard. From the intersection of Valley Boulevard and Sperry Drive, the Northern Reach will continue west in Valley Boulevard to La Cadena Drive under I-10, and south in La Cadena Drive. The proposed alignment continues south along La Cadena Drive to "N" Street, then west in "N" Street to South Rancho Avenue, south in South Rancho Avenue to Agua Mansa Road, then southwest in Agua Mansa Road to the City of Rialto. See **Table 4.9-A** for land use designations adjacent to these roadways.

Table 4.9-A
City of Colton Land Use Designations

Roadway Segment	Land Use Designation(s)
Steel Road	Specific Plan
Cooley Drive	Commercial, Low Density Residential, Public Facility
Washington Street	Commercial, Low Density Residential, High Density Residential
Barton Road	Commercial, Low Density Residential, High Density Residential
Fairway Drive	Industrial Park, Open Space, General Commercial, High Density Residential
Sperry Drive	General Commercial, High Density Residential
Valley Boulevard	General Commercial
La Cadena Drive	General Commercial, Heavy Industrial, Medium Density Residential
"N" Street	General Commercial, Medium Density Residential, Low Density Residential
South Ranch Avenue	Low Density Residential, Specific Plan, Industrial Park, High Density Residential
Agua Mansa Road	Specific Plan

The proposed project will be constructed primarily within road rights-of-way within the City of Colton. The Colton General Plan contains no policies regarding the construction of regional infrastructure within the city. The proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. It can be concluded that the proposed project will not conflict with the land use designations and policies of the Colton General Plan.

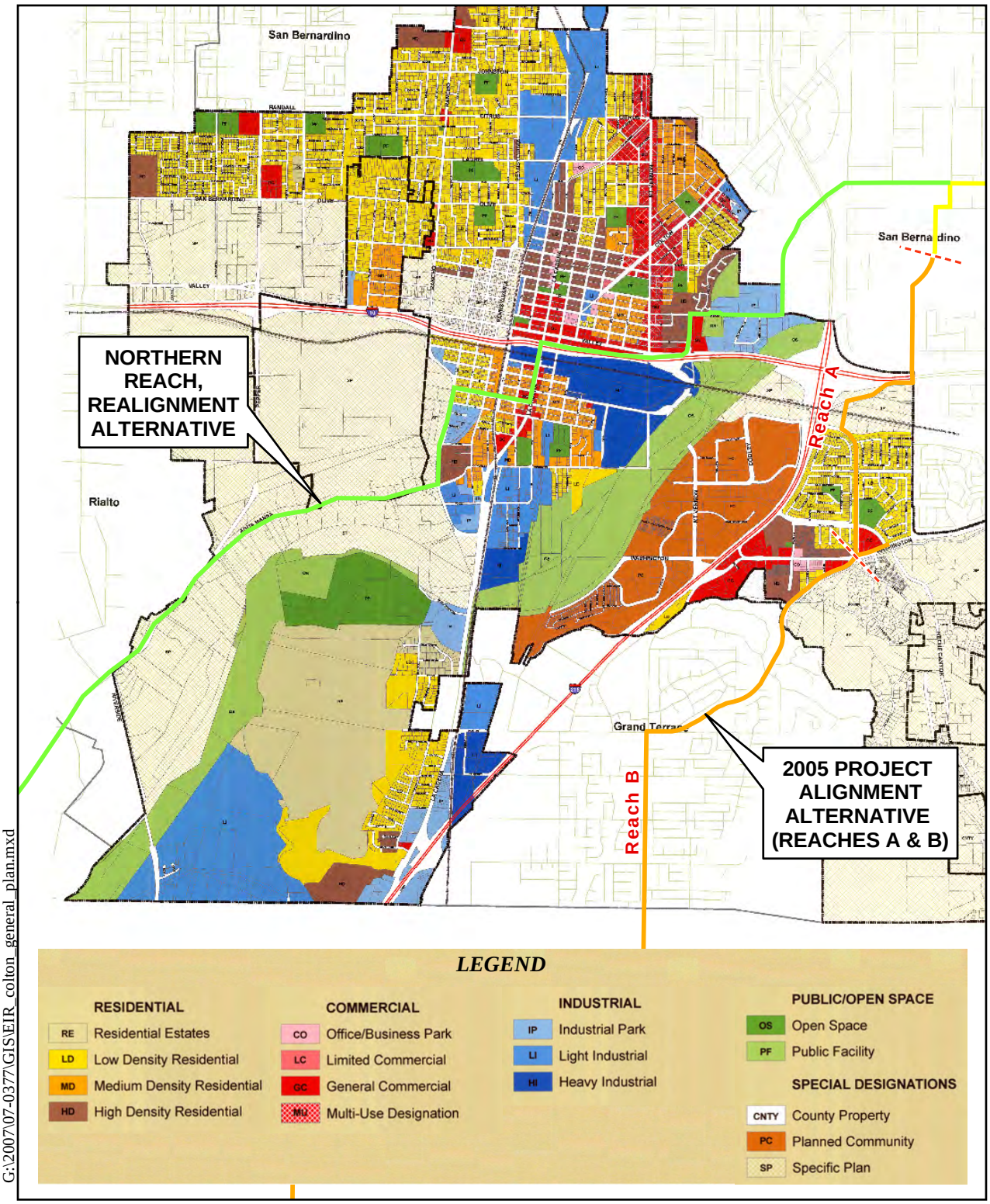
City of Corona

All Alternatives

A portion of Reach H of the 2005 Project Alignment traverses through the City of Corona, terminating at the intersection of Compton Avenue and Ontario Avenue. This alignment applies to all alternatives. As shown in **Figure 4.9-2, City of Corona General Plan – Land Use Map**, the proposed project will be adjacent to the City of Corona on Indiana Avenue and on Neece Street, and will continue southwest into the City of Corona on Magnolia Avenue (including on Leeson Lane) from unincorporated Riverside County, south through an industrial park parking lot, southeast through the Corona Landfill, entering the north end of Belair Street, continuing south on Belair Street, west in Old Temescal Road, under Interstate 15, and south on Compton Avenue to the intersection of Compton Avenue and Ontario Avenue. The land use designations along this alignment are listed in **Table 4.9-B, City of Corona Land Use Designations**.

Table 4.9-B
City of Corona Land Use Designations

Roadway Segment	Land Use Designation(s)
Indiana Avenue	General Industrial, General Commercial, High Density Residential
Neece Street	High Residential, General Commercial
Magnolia Avenue (including Leeson Lane)	General Commercial; General Industrial; Open Space- General; Mixed Use II -Industrial and Commercial
Industrial Park Parking Lot, Corona Landfill	Mixed Use II - Industrial and Commercial
Bel Air Street	Low Residential
Old Temescal Road	Low Residential, Light Industrial
Compton Avenue	Light Industrial, General Commercial



Source: City of Colton General Plan Map, Updated April 21, 2008

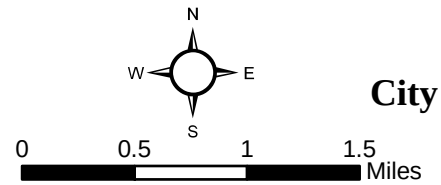
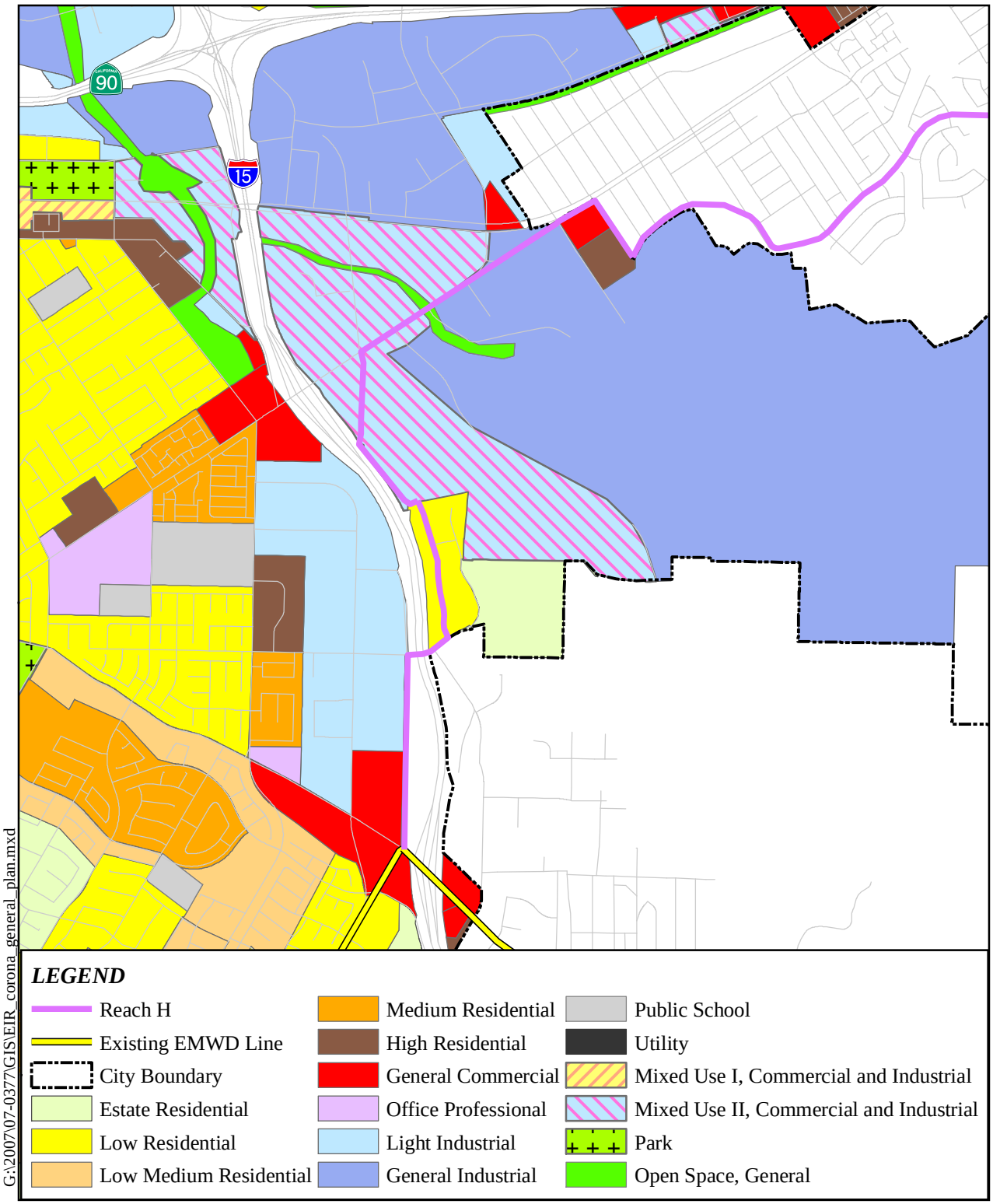


Figure 4.9-1
City of Colton General Plan - Land Use Map



Source: City of Corona General Plan, Figure 3: Land Use Plan

Figure 4.9-2
City of Corona General Plan - Land Use Map

Corona General Plan Policy 1.15.2 allows for the development of new schools, parks, government, fire and police facilities, utility, and institutional uses in any location of the city, regardless of the Land Use Plan's designation, provided that the use is environmentally suitable and compatible with adjoining land uses, and adequate infrastructure can be provided.

The proposed project will be constructed primarily within road rights-of-way, a parking lot, and landfill property within the City of Corona. Although the Corona General Plan contains no specific policies regarding the construction of regional infrastructure within the city, the general plan indicates that utility uses are allowed within any general plan land use designation. Additionally, the proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. Therefore, it can be concluded that the proposed project will not conflict with the land use designations and policies of the Corona General Plan.

City of Grand Terrace

2005 Project Alignment Alternative

A portion of Reach B of the 2005 Project Alignment traverses the City of Grand Terrance. Reach B would continue southwesterly for approximately 29,000 feet with up to 60-inch diameter pipeline into the City of Grand Terrace along Barton Road (as shown in **Figure 4.9-10, Riverside County General Plan – High Grove Area Plan and City of Grand Terrace General Plan**) until it reaches the intersection of Mount Vernon Avenue where it runs south along Mount Vernon Avenue to Spring Street which is located in Riverside County. **Table 4.9-C** shows the land use designations along this route.

Table 4.9-C
City of Grand Terrace Land Use Designations

Roadway Segment	Land Use Designation(s)
Barton Road	Office Commercial, General Commercial, and Low Density Residential
Mount Vernon Avenue	General Commercial, Medium Density Residential, Office Commercial, Low Density Residential, Public

The proposed project will be constructed within road rights-of-way within the City of Grand Terrace. The City of Grand Terrace General Plan contains no policies regarding the construction of regional infrastructure within the city. The proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. It can be concluded that the proposed project will not conflict with the land use designations and policies of the City of Grand Terrace General Plan.

City of Redlands

Realignment Alternative with Additional Connections

A portion of the Central Feeder Connection of the proposed project will be constructed within the San Bernardino Avenue right-of-way within the City of Redlands. As shown in **Figure 4.9-3, City of Redlands General Plan and San Bernardino County General Plan – Land Use Map**, the proposed Central Feeder Connection will enter the City of Redlands from unincorporated San Bernardino County at the State Route 30/San Bernardino Avenue interchange and continue east within the San Bernardino Avenue right-of-way to the intersection of San Bernardino Avenue and Webster Street. The land use designations along this alignment are listed in **Table 4.9-D, City of Redlands Land Use Designations**.

Table 4.9-D
City of Redlands Land Use Designations

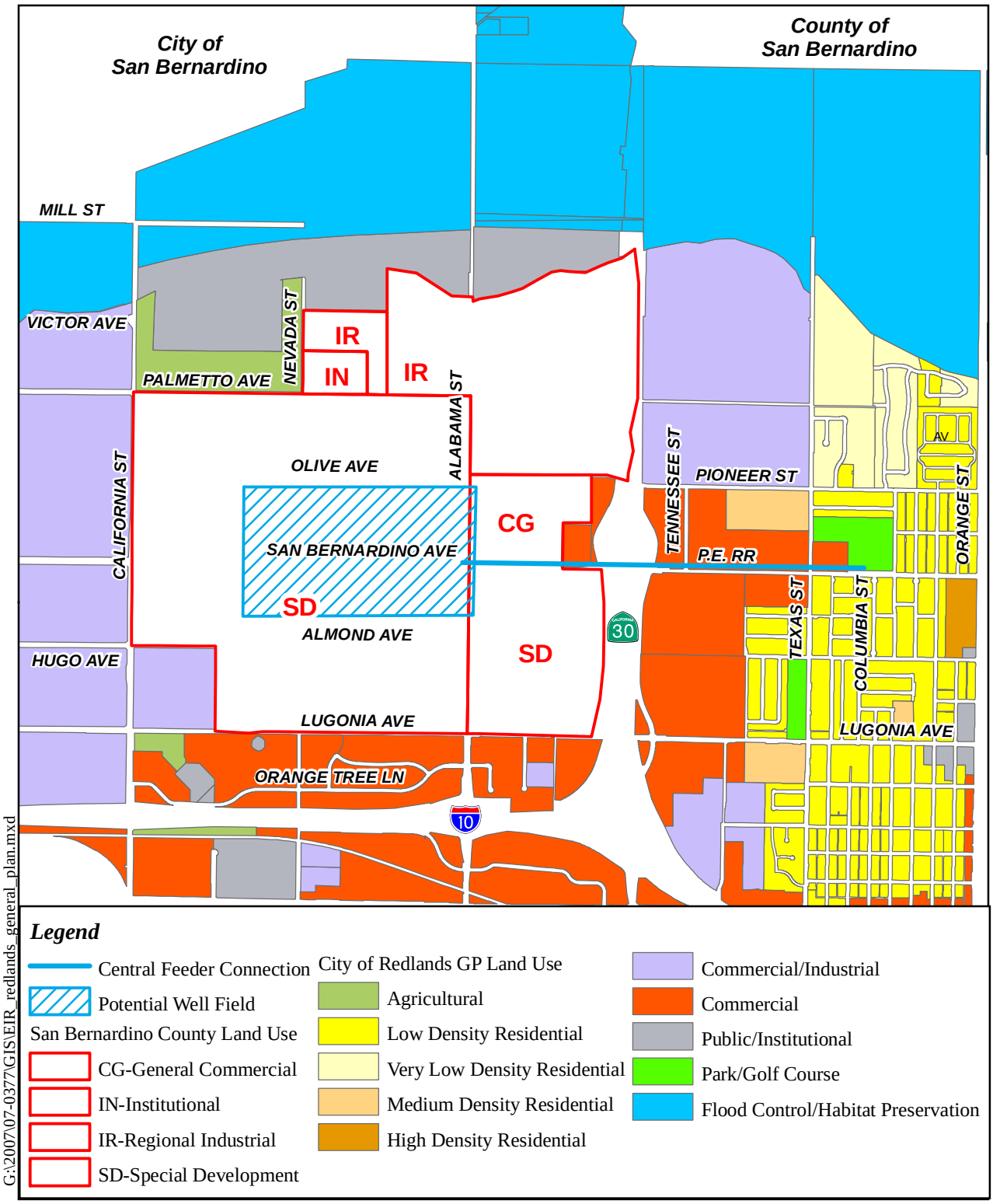
Roadway Segment	Land Use Designation(s)
San Bernardino Avenue	Commercial, Low Density Residential (0 to 6.0 units per gross acre), Agriculture (City Grove)

The proposed project will be constructed within road rights-of-way within the City of Redlands. The Redlands General Plan contains no policies regarding the construction of regional infrastructure within the city. The proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. It can be concluded that the proposed project will not conflict with the land use designations and policies of the Redlands General Plan.

City of Rialto

Realignment Alternatives

A portion of the Northern Reach of the proposed project traverses through the City of Rialto. As shown in **Figure 4.9-8, County of San Bernardino General Plan and City of Rialto General Plan – Land Use Map**, the proposed project will enter the City of Rialto from the City of Colton on Agua Mansa Road and continue southwest in Agua Mansa Road into unincorporated San Bernardino County. The land use designations along this alignment are listed in **Table 4.9-E, City of Rialto Land Use Designations**.



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Sources: City of Redlands General Plan, Adopted 1995, as modified through April 2009; County of San Bernardino, 2009.

Figure 4.9-3
City of Redlands General Plan and San Bernardino County General Plan - Land Use Map

Table 4.9-E
City of Rialto Land Use Designations

Roadway Segment	Land Use Designation(s)
Agua Mansa Road	General Commercial, Light Industrial, Community Commercial

The proposed project will be constructed within road rights-of-way within the City of Rialto. The Rialto General Plan contains no policies regarding the construction of regional infrastructure within the city. The proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. It can be concluded that the proposed project will not conflict with the land use designations and policies of the Rialto General Plan.

City of Riverside

2005 Project Alignment Alternative

A portion of Reach B, Reaches C through G, and a portion of Reach H of the 2005 Project Alignment traverse the City of Riverside as shown on **Figure 4.9-4, City of Riverside General Plan – Land Use Map**. Reach B would continue south from the unincorporated portion of Riverside County south of the City of Grand Terrace in and/or adjacent to the Gage Canal right-of-way, and ending near the intersection of Rustin Avenue and Marlborough Avenue in the City of Riverside. Boring techniques will be utilized where the RCF is proposed to cross under a riparian area located within and/or adjacent to the Gage Canal right-of-way, and under the Union Pacific rail lines just east of the intersection of Rustin Avenue and Marlborough Avenue.

Reach C would be constructed from the end of Reach B for an additional approximately 29,000 feet of up to 60-inch diameter pipeline, west in Marlborough Avenue, then south in Chicago Avenue, west in Arlington Avenue, to Turnout No. 2 which would be located near the intersection of Arlington Avenue and Fairview Avenue in the City of Riverside. The RCF will be placed underground utilizing boring techniques where it will travel under Iowa Avenue, a Union Pacific rail line located just east of Chicago Avenue, Spruce Street, Interstate 215/State Route 60, Third Street, University Avenue, Martin Luther King Boulevard, and Central Avenue.

Reach D would continue west in Arlington Avenue, then south in Victoria Avenue, southwest in Lincoln Avenue, southeast in Adams Street, southwest in Cleveland Avenue to the intersection of Cleveland Avenue and Irving Street for a total of approximately 24,000 feet of up to 54-inch diameter pipeline to near the intersection of Cleveland Avenue and Irving Street in the City of Riverside. Boring techniques will be utilized to construct the RCF under Mary Street, Madison Avenue and a rail line northeast of St. Lawrence Street.

Reach E is a branch pipeline that would extend from Turnout No. 3 southeast in Irving Street to a point approximately 200-feet northwest of Firethorn Avenue. Boring techniques will be utilized to install a 36-inch pipeline that will cross under the open Gage Canal, then the pipeline will traverse downhill just southwest of the intersection of Irving Street and Firethorn Avenue

southwest to Firethorn Avenue and across Van Buren Boulevard to the Mockingbird Pump Station.

Reach F would extend southwest in Cleveland Avenue from the intersection of Cleveland Avenue and Irving Street, southeast on La Sierra Avenue, west in Dufferin Avenue, northwest on Lyon Avenue, southwest in Victoria Avenue, northwest in Fillmore Street to Indiana Avenue to Turnout No. 4 which would be located at the intersection of Fillmore and Indiana Avenues in the City of Riverside. Boring techniques will be utilized to bore under Van Buren Boulevard, a riparian drainage located within the right-of-way, but un-constructed portion of Cleveland Avenue, and a drainage facility (under construction) located at the intersection of Dufferin Avenue and Lyon Avenue. Turnout No. 4 will have a capacity of 20 cfs (9,000 GPM) and will be located near the intersection of Indiana Avenue and Fillmore Street in the City of Riverside.

Reach G is a branch pipeline that would extend from Turnout No. 4, then northwest in Fillmore Street from the intersection of Fillmore Street and Indiana Avenue under rail lines and across the Arlington Flood Control Channel to the Arlington Pump Station (Turnout No. 4). Boring techniques will be utilized to bore under rail lines and the Arlington Flood Control Channel.

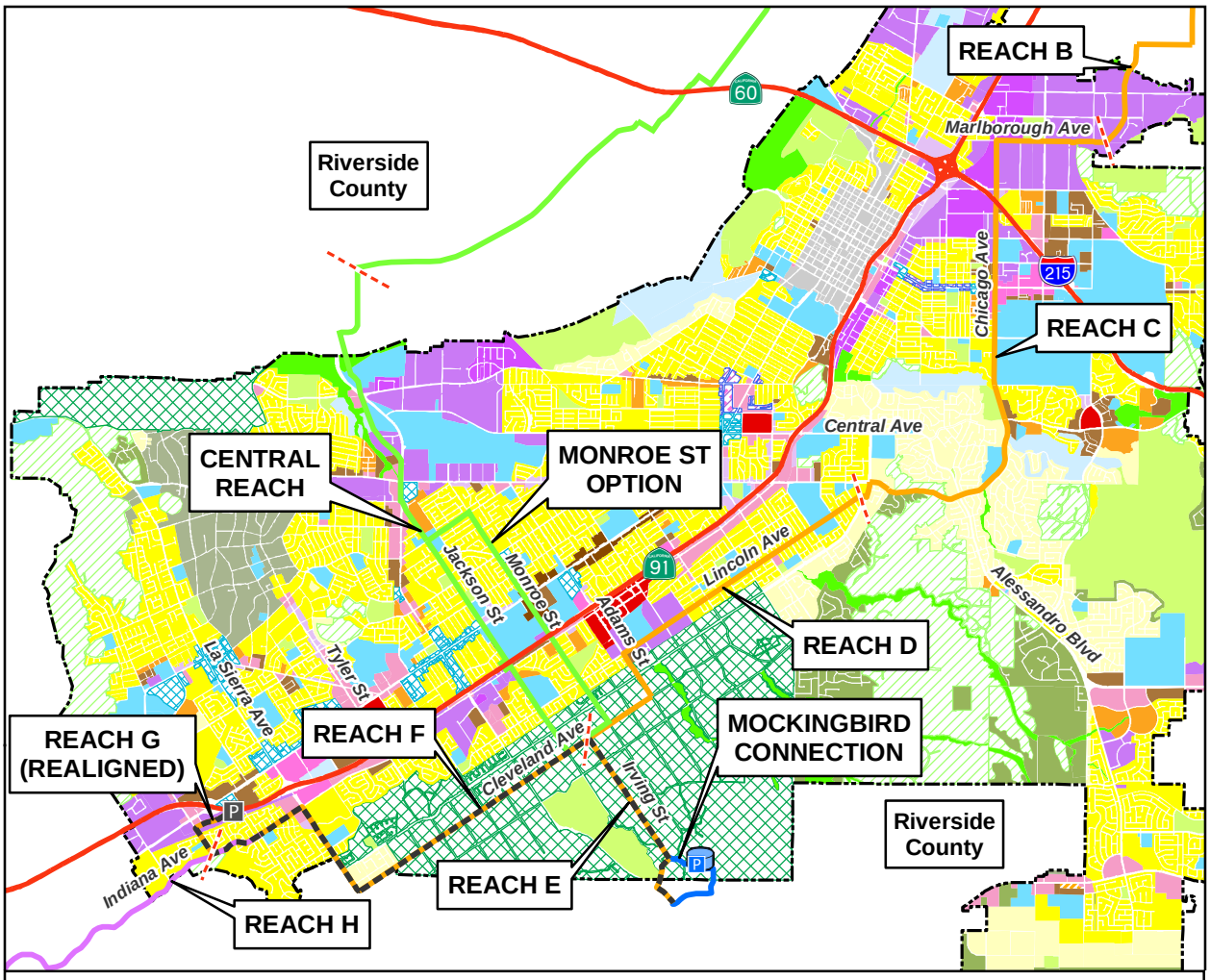
Reach H continues westerly in Indiana Avenue from Fillmore Street to the city limit.

Land use designations for the above Reaches are shown in **Table 4.9-F, City of Riverside Land Use Designations**.

Realignment Alternatives

A portion of the Central Reach of the Realignment Alternative traverses through the City of Riverside. As shown in **Figure 4.9-4, City of Riverside General Plan – Land Use Map**, the pipeline enters the City of Riverside south of the Santa Ana River from unincorporated Riverside County and crosses under Van Buren Boulevard to Doolittle Avenue, continues southerly in Doolittle Avenue to Van Buren Boulevard, and then proceeds south in Van Buren Boulevard. The alignment then traverses southeast in Jackson Street, west in Diana Avenue to Wilbur Street, then south under State Route 91. South of State Route 91, the alignment continues northeast in Indiana Avenue, then southeast in Jackson Street, and connects to the original 2005 Project Alignment near the intersection of Jackson Street and Cleveland Avenue.

As an option to the Jackson Street portion of the realignment, the placement of a portion of the pipeline within Monroe Street is also being considered at the request of the City of Riverside. The Monroe Street option would follow the above-described alignment from Van Buren Boulevard southeast in Jackson Street only to Colorado Avenue. At that point, the alignment will continue northeast in Colorado Avenue to Monroe Street, then southeast in Monroe Street, under the State Route 91, and continue to the intersection of Monroe Street and Cleveland Avenue. At that point, the alignment would continue southwest in Cleveland Avenue to connect with the approved 2005 Riverside-Corona Feeder alignment at the intersection of Cleveland Avenue and Irving Street.



Realignment Alternative
2005 Project Alignment Alternative (Reaches A - G)
Reach E, F and G Refinements
Reach H
Mockingbird Connection
Proposed Pump Stations
Proposed Reservoir/Tank
Riverside City Boundary

City of Riverside GP Land Use

Agricultural/Rural Residentail
Hillside Residential
Semi Rural Residential
Very Low Density Residential
Low Density Residential
Medium Density Residential
Medium High Density Residential
High Density Residential
Very High Density Residential
Commercial
Commercial Regional Center
Downtown Specific Plan
Orangecrest Specific Plan
Office
Business/Office Park
Industrial
Mixed Use - Neighborhood
Mixed Use - Village
Mixed Use - Urban
Public Facilities/Institutional
Private Recreation
Public Park
Open Space/Natural Resources

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Source: City of Riverside General Plan 2025, Adopted Nov. 2007.

N W E S

0 1 2 3 Miles

Figure 4.9-4
City of Riverside General Plan - Land Use Map

Additionally, the Reach E, F and G Refinement, and a portion of Reach H of the 2005 Project Alignment are a part of the Realignment Alternative and traverse through the City of Riverside. Reach E is a branch pipeline that would extend from Turnout No. 3 southeast in Irving Street to a point approximately 200 feet northwest of Firethorn Avenue, traverse downhill just southwest of the intersection of Irving Street and Firethorn Avenue southwest to Firethorn Avenue, and southerly in Firethorne Avenue to unincorporated Riverside County. Reach F would extend approximately 24,000 feet of up to 42-inch diameter pipeline southwest in Cleveland Avenue from the intersection of Cleveland Avenue and Irving Street to La Sierra Avenue, southeast on La Sierra Avenue to its intersection with Indiana Avenue then westerly in Indian to Pierce Street. Reach G is a branch line that extends northerly in Pierce Street to Sterling Avenue where it turns easterly to its connection with the proposed Sterling pump station. Boring techniques will be utilized to bore under Van Buren Boulevard, and a riparian drainage located within the right-of-way of an un-constructed portion of Cleveland Avenue. Reach H would begin at the intersection of Pierce Street and Indiana Avenue in the City of Riverside and will extend southwest on Indiana Avenue into unincorporated Riverside County.

The land use designations along these alignments are listed in **Table 4.9-F**.

Table 4.9-F
City of Riverside Land Use Designations

Roadway Segment	Land Use Designation(s)
Central Reach	
Van Buren Boulevard (north of Doolittle Avenue)	Open Space/Natural Resources, Public Facilities/Institutional
Doolittle Avenue	Commercial, Public Facilities/Institutional, Business/Office Park, High Density Residential
Van Buren Boulevard (south of Doolittle Avenue)	Commercial, Business/Office Park, Open Space/Natural Resources, Mixed Use-Village
Jackson Street (north of Diana Avenue)	Commercial, Mixed Use-Village, Medium High Density Residential, Medium Density Residential, Public Park, Public Facilities/Institutional, Office, High Density Residential
Diana Avenue	Medium Density Residential
Wilbur Street	Business/Office Park
Indiana Avenue	Business/Office Park
Jackson Street (south of Indiana Avenue)	Business/Office Park, Medium High Density Residential, Medium Density Residential, Public Facilities/Institutional, Agricultural/Rural Residential
Monroe Street Option	
Colorado Avenue	Public Facilities/Institutional, Medium Density Residential
Monroe Street	Medium Density Residential, Mixed Use-Village, Medium High Density Residential, Very High Density Residential, Public Facilities/Institutional, Business/Office Park, Commercial, Public Park,

Roadway Segment	Land Use Designation(s)
	Agricultural/Rural Residential
Cleveland Avenue	Agricultural/Rural Residential
Mockingbird Connection	
Irving Street and off-street areas	Agricultural/Rural Residential
2005 Project Alignment – Reach B	
Rustin Avenue	Business/Office Park
Marlborough Avenue	Business/Office Park, Industrial, Public Park
2005 Project Alignment – Reach C	
Marlborough Avenue	Business/Office Park, Industrial, Public Park
Chicago Avenue	Industrial, Business/Office Park, Office, Medium Density Residential, High Density Residential, Public Facilities/Institutional, Mixed Use-Urban, Public Park, and Low Density Residential
Arlington Avenue	Low Density Residential, Hillside Residential, Very Low Density Residential
2005 Project Alignment – Reach D	
Arlington Avenue	Low Density Residential, Hillside Residential, Very Low Density Residential
Victoria Avenue	Medium Density Residential, Low Density Residential, Open Space/Natural Resources, Agricultural/Rural Residential
Lincoln Avenue	Medium Density Residential, Business/Office Park, Public Facilities/Institutional, and High Density Residential
Adams Street	High Density Residential, Medium Density Residential, Agricultural/Rural Residential
Cleveland Avenue	Agricultural/Rural Residential
Irving Street	Agricultural/Rural Residential
2005 Project Alignment and Realignment Alternatives – Reach E	
Irving Street	Agricultural/Rural Residential
Firethorn Avenue	Agricultural/Rural Residential, Public Park, Agricultural
2005 Project Alignment – Reach F	
Cleveland Avenue	Agricultural/Rural Residential, Low Density Residential
La Sierra Avenue	Low Density Residential, Medium Density Residential, Hillside Residential
Dufferin Avenue	Medium Density Residential
Lyon Street	Medium Density Residential
Victoria Avenue	Low Density Residential, Agricultural/Rural Residential, and Public Park
Fillmore Street	Medium Density Residential, Public Facilities/Institutional
Indiana Avenue	Medium Density Residential

Roadway Segment	Land Use Designation(s)
2005 Project Alignment – Reach G	
Fillmore Street	Medium Density Residential, Business/Office Park
All Alternatives – Reach H	
Indiana Avenue	Medium Density Residential, Public Facilities/Institutional, Hillside Residential
Realignment Alternatives – Reach F	
Cleveland Avenue	Agricultural/Rural Residential, Low Density Residential
La Sierra Avenue	Low Density Residential, Medium Density Residential, Agricultural Rural Residential, Public Facilities/Institutional, Office, Commercial
Indiana Avenue	Commercial, Medium Density Residential, Public Facilities/Institutional, Hillside Residential
Realignment Alternatives – Reach G	
Pierce Street	Medium Density Residential, Business/Office Park
Sterling Avenue	Business/Office Park

Page PF 9 of the City of Riverside General Plan 2025 acknowledges the RCF project and states that "The Riverside/Corona Feeder project will capture and store new water in wet years in order to increase water supplies, reduce water costs, and improve water quality."

Policies within the City of Riverside General Plan state that the city will "support the efforts of the Riverside Public Utilities Department, Eastern Municipal Water District and Western Municipal Water District to work together for coordination of water services" (Policy PF-1.2) and will ensure the provision of water services consistent with the growth planned for the General Plan area, including the Sphere of Influence by working with other providers (Policy PF-1.4).

The proposed project will be constructed primarily within road rights-of-way within the City of Riverside. Although the Riverside General Plan contains no specific policies regarding the construction of regional infrastructure within the city, the general plan acknowledges the RCF project and establishes policies for coordination between the city and water providers, such as Western Municipal Water District. The RCF project provides for coordination with the City of Riverside and provides opportunities for the interconnection of the City of Riverside's water system and the proposed pipelines. Additionally, the proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. Therefore, it can be concluded that the proposed project will not conflict with the land use designations and policies of the City of Riverside 2025 General Plan.

Realignment Alternative with Additional Connections

A portion of the Mockingbird Connection, also shown on **Figure 4.9-4, City of Riverside General Plan – Land Use Map**, is located in the City of Riverside. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements on private property to connect to the proposed pump station and reservoir which will be located on a parcel acquired by WMWD. The pipeline will then extend east within a pipeline easement and then south to unincorporated Riverside County. Land use designations for this location are listed in **Table 4.9-F** and shown on **Figure 4.9-4**. Although the Riverside General Plan contains no specific policies regarding the construction of regional infrastructure within the city, the general plan acknowledges the RCF project and establishes policies for coordination between the city and water providers, such as Western Municipal Water District. The RCF project provides for coordination with the City of Riverside and provides opportunities for the interconnection of the City of Riverside's water system and the proposed pipelines. Additionally, the proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. Therefore, it can be concluded that the proposed project will not conflict with the land use designations and policies of the City of Riverside 2025 General Plan.

City of San Bernardino

2005 Project Alignment Alternative – Reach A

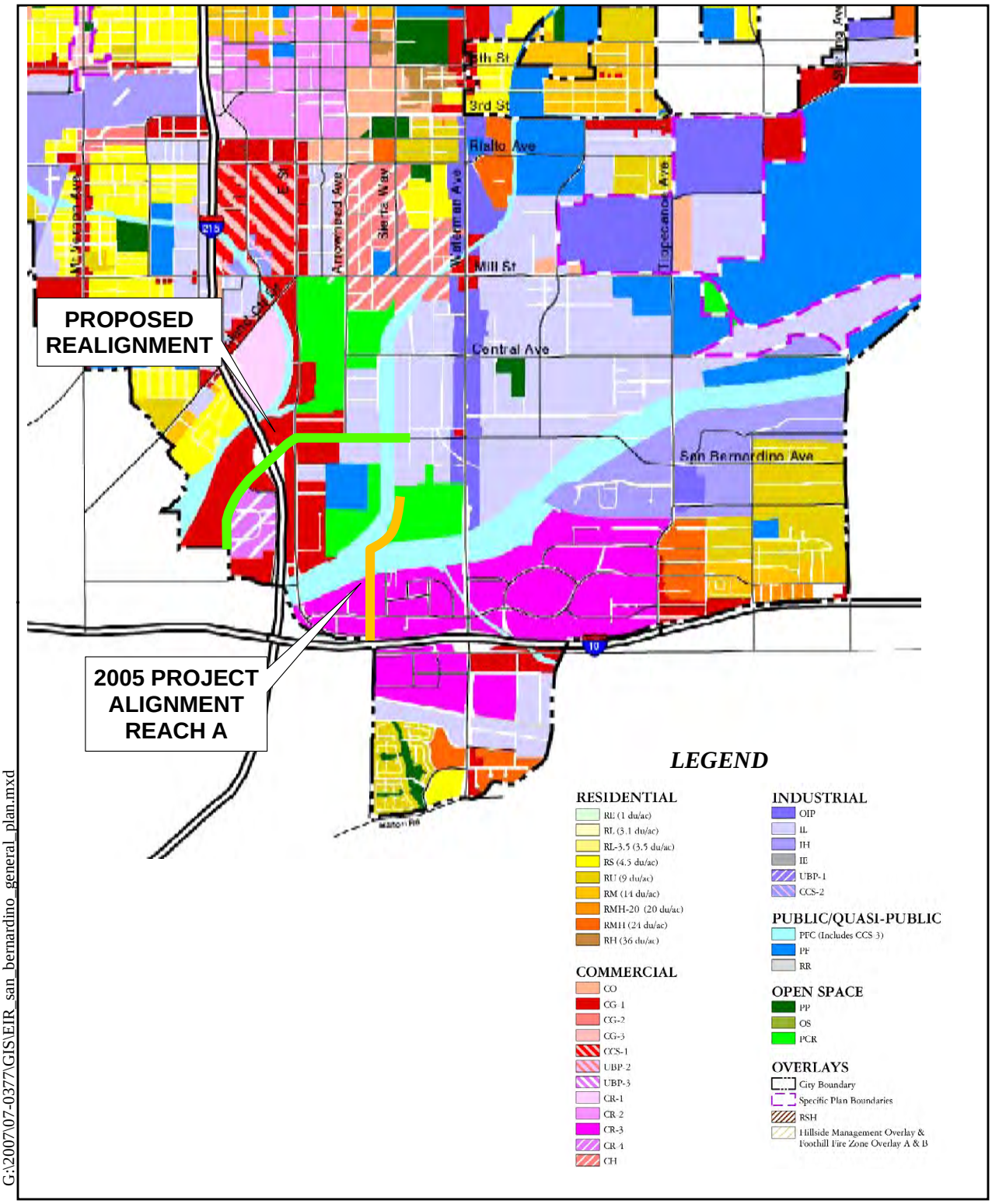
A portion of Reach A traverses through the City of San Bernardino, as shown on **Figure 4.9-5, City of San Bernardino General Plan – Land Use Map**. Reach A traverses the southeast side of Twin Creek then crosses the Santa Ana River. After crossing the Santa Ana River, the project will be located within the right-of-way of Hunts Lane. **Table 4.9-G, City of San Bernardino Land Use Designations** lists the designated land uses adjacent to the alignments.

Realignment Alternatives

A portion of the Northern Reach of the proposed project traverses through the City of San Bernardino. As shown in **Figure 4.9-5**, the proposed project will extend approximately 12,000 linear feet from near the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino, traversing west in Orange Show Road/Auto Plaza Drive under the I-215 freeway, then south to Fairway Drive in the City of Colton. The land use designations along this alignment are listed in **Table 4.9-G, City of San Bernardino Land Use Designations**.

Table 4.9-G
City of San Bernardino Land Use Designations

Realignment Projects	
Roadway Segment	**Land Use Designation(s)**
Orange Show Road	Industrial Light, Publicly-owned Flood Control, Commercial General-1
Auto Plaza Drive	Commercial General-1, Commercial Regional-4 Auto Plaza
2005 Project Alignment – Reach A	
East of Twin Creek	Public/Commercial Recreation (PCR)
South Hunts Lane	Commercial – Regional (CR)



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Source: City of San Bernardino General Plan, 2005, Figure LU-2, General Plan Land Use Map

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Figure 4.9-5
City of San Bernardino General Plan - Land Use Map

Page 9-10 of the City of San Bernardino's General Plan states that the "City has no jurisdiction over water supply, transmission, distribution, and storage facilities administered by other entities." The proposed project will be constructed primarily within road rights-of-way within the City of San Bernardino. The San Bernardino General Plan contains no policies regarding the construction of regional infrastructure within the city. The proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. It can be concluded that the proposed project will not conflict with the land use designations and policies of the San Bernardino General Plan.

County of Riverside

2005 Project Alignment Alternative – Reach B

A portion of Reach B traverses through the County of Riverside, as shown on **Figure 4.9-9, Riverside County General Plan – Highgrove Area Plan and City of Grand Terrace General Plan**. In total, Reach B is approximately 29,000 feet of up to 60-inch diameter pipeline. Within the County of Riverside, the pipeline traverses southward within the Mount Vernon Avenue right-of-way from the County line to the West Spring Street right-of-way and traverses west. Reach B then traverses southward in and/or adjacent to the Gage Canal right-of-way, to the border between the county of Riverside and the City of Riverside.

Realignment Alternatives

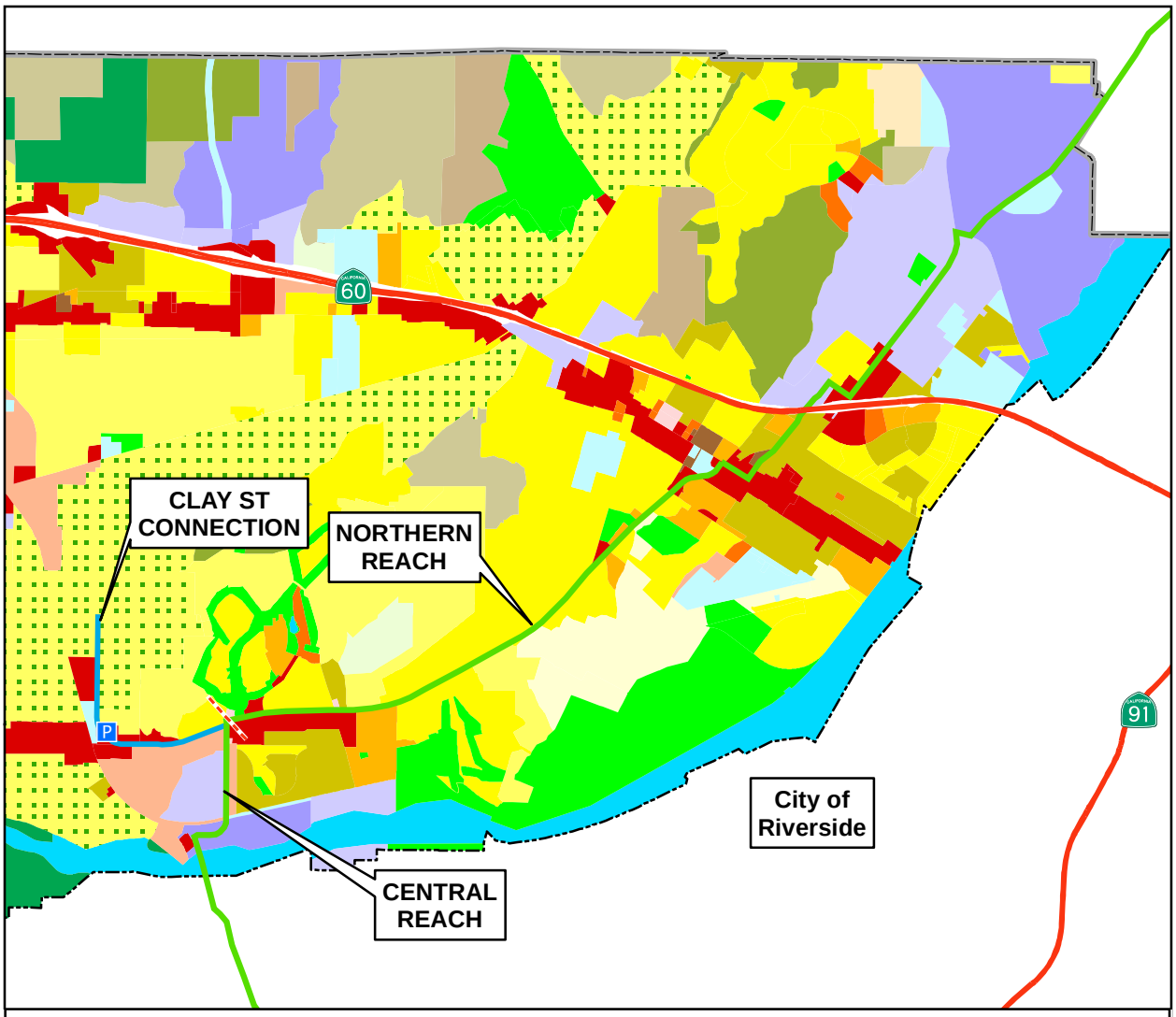
A portion of the Northern Reach and a portion of the Central Reach of the proposed project traverse through unincorporated Riverside County. As shown in **Figure 4.9-6, County of Riverside General Plan – Jurupa Area Plan**, the Northern Reach leaves unincorporated San Bernardino County in Agua Mansa Road and continues to Market Street, west in Market Street to Rubidoux Boulevard, southwest in Rubidoux Boulevard to 30th Street, then northwest in 30th Street to Avalon Street. The alignment continues southwest along Avalon Street, under State Route 60, to Mission Boulevard. The alignment then traverses west in Mission Boulevard from the intersection of Avalon Street to Riverview Drive/Limonite Avenue. It then traverses south in Riverside Drive/Limonite Avenue to 42nd Street and continues southwest along Limonite Avenue to Clay Street. The Central Reach then begins at this point and continues south in Clay Street and crosses under the Santa Ana River near Van Buren Boulevard where it enters the City of Riverside. The land use designations along this alignment are listed in **Table 4.9-H, County of Riverside Land Use Designations**.

Additionally, portions of Reach E, Reach F, and Reach H of the 2005 Project Alignment traverse unincorporated Riverside County, as shown in **Figure 4.9-7, County of Riverside General Plan – Temescal Canyon & Lake Mathews/Woodcrest Area Plans.** Reach E enters unincorporated Riverside County from the City of Riverside in Firethorne Avenue and continues southwest to Firethorn Avenue and across Van Buren Boulevard to the Mockingbird Pump Station. Reach F would extend from Cleveland Avenue in the City of Riverside southeast on La Sierra Avenue, west in Dufferin Avenue, northwest on Lyon Avenue, southwest in Victoria Avenue back into the City of Riverside at Fillmore Street. Reach H would begin at the intersection of Fillmore Street and Indiana Avenue in the City of Riverside and will extend southwest on Indiana Avenue

leaving the City of Riverside and continuing in Indiana Avenue in unincorporated Riverside County, northwest on Neece Street, and southwest into the City of Corona on Magnolia Avenue.
Realignment Alternative with Additional Connections

The Clay Street Connection also traverses through unincorporated Riverside County. As shown in **Figure 4.9-6, County of Riverside General Plan – Jurupa Area Plan**, the Clay Street Connection extends west within Limonite Avenue from its intersection with Clay Street and then north in Pedley Road to 56th Street. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction. The land use designations for this connection are listed in **Table 4.9-H, County of Riverside Land Use Designations**.

A portion of the Mockingbird Connection and the La Sierra Pipeline, also shown on **Figure 4.9-7, County of Riverside General Plan – Temescal Canyon & Lake Mathews/Woodcrest Area Plans**, are located in unincorporated Riverside County. The portion of the Mockingbird Connection within the County extends south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to a WMWD's existing Mockingbird Booster Station. The La Sierra Pipeline extends south from the intersection of La Sierra Avenue and Cleveland Avenue to connect to the existing Mills Gravity Pipeline, located at the intersection of La Sierra Avenue and El Sobrante Road. The land use designations for these connections are listed in **Table 4.9-H, County of Riverside Land Use Designations**.



LEGEND

- P Proposed Pump Station
- Realignment Alternative
- Clay Street Connection
- County Boundary
- Riverside City Boundary

Riverside County GP Land Use

- Estate Density Residential
- Very Low Density Residential
- Low Density Residential
- Low Density Residential-RC
- Medium Density Residential
- Medium High Density Residential
- High Density Residential
- Highest Density Residential
- Very High Density Residential
- Commercial Retail
- Commercial Office
- Light Industrial
- High Industrial
- Business Park
- Public Facilities
- Rural Residential
- Open Space Rural
- Conservation
- Conservation Habitat
- Mineral Resources
- Open Space Recreation
- Water

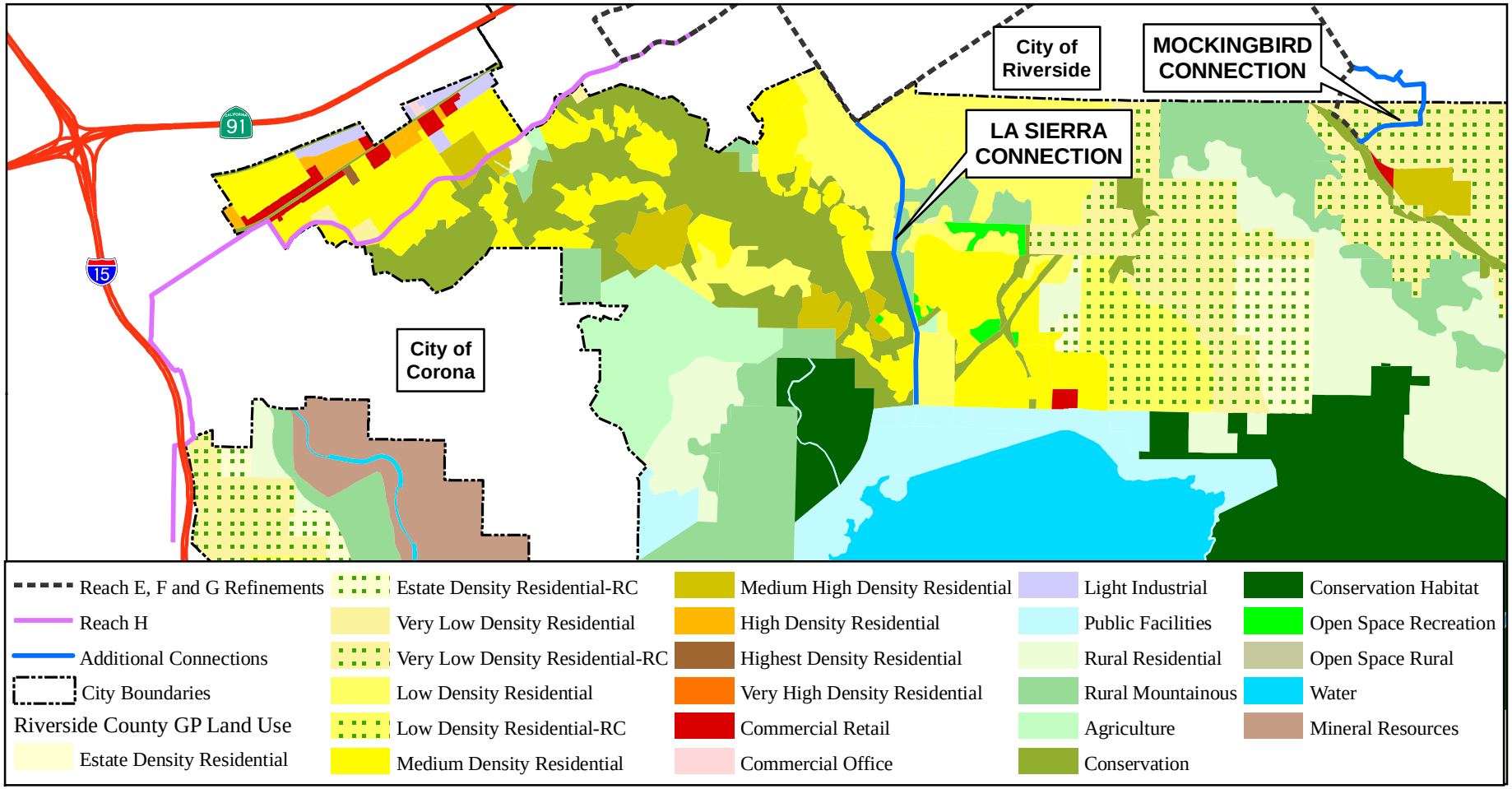
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Source: County of Riverside, Jurupa Area Land Use Plan, October 2003

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Figure 4.9-6
Riverside County General Plan
- Jurupa Area Plan



Sources: County of RiversideTemescal Canyon Area Land Use Plan, October 2003; County of Riveside Lake Mathews/Woodcrest Land Use Plan, October 2003

Figure 4.9-7
Riverside County General Plan - Temescal & Lake Mathews-Woodcrest Area Plans

Table 4.9-H
County of Riverside Land Use Designations

Roadway Segment	Land Use Designation(s)
Northern Reach	
Agua Mansa Road	Heavy Industrial, Public Facilities
Market Street	Light Industrial, Heavy Industrial
Rubidoux Boulevard	Light Industrial, Commercial Retail, Medium Density Residential
30th Street	Light Industrial, Commercial Retail, Medium Density Residential
Avalon Street	Light Industrial, Medium High Density Residential, Very High Density Residential, Commercial Retail within Community Center Overlay
Mission Boulevard	Commercial Retail within Community Center Overlay
Riverview Drive/Limonite Avenue	Commercial Retail within Community Center Overlay, Public Facilities, High Density Residential, Commercial Retail, Medium Density Residential, Medium High Density Residential, Open Space-Recreation, Commercial Office
Central Reach	
Clay Street	Business Park, Light Industrial, Commercial Retail
Santa Ana River	Open Space - Water
Clay Street Connection	
Limonite Street	Business Park, Medium Density Residential, Commercial Retail, Low Density Residential, Public Facilities
Pedley Road	Low Density Residential, Public Facilities, Commercial Retail
Mockingbird Connection	
Constable Road	Very Low Density Residential
Mills Gravity Pipeline	Very Low Density Residential
Van Buren Boulevard	Very Low Density Residential, Open Space - Conservation
La Sierra Pipeline	
La Sierra Avenue	Low Density Residential, Rural Mountainous, Open Space-Conservation, Open Space - Recreation, Agriculture, Medium Density Residential, Rural Residential
2005 Project Alignment – Reach B	
Mount Vernon Avenue	Low Density Residential, Medium Density Residential
West Spring Street	Low Density Residential, Medium Density Residential
Gage Canal	Rural Residential, Low Density Residential,

Roadway Segment	Land Use Designation(s)
	Medium Density Residential
2005 Project Alignment – Reach E	
Firethorne Avenue	Very Low Density Residential
Van Buren Boulevard	Conservation
2005 Project Alignment – Reach F	
La Sierra Avenue	Very Low Density Residential
Dufferin Avenue	Very Low Density Residential
Lyon Avenue	Very Low Density Residential
Victoria Avenue	Medium Density Residential
2005 Project Alignment – Reach H	
Indiana Avenue	Medium Density Residential, Medium High Density Residential, Estate Density Residential
Neece Street	Medium Density Residential
Magnolia Avenue	Commercial Retail

Policies within Riverside County's General Plan state that the County will "promote and encourage efficient provisions of utilities such as water, wastewater, and electricity that support the County's Land Use Element at buildout" (Policy C 25.1) and that new and relocated utilities shall be located underground when possible (Policy C 25.2).

That portion of the proposed project located within the unincorporated portions of Riverside County will be constructed primarily within road rights-of-way, although a portion of the Central Reach will be constructed outside road rights-of-way under the Santa Ana River. Although the Riverside County General Plan contains no specific policies regarding the construction of regional infrastructure within the city, the general plan encourages the provision of water facilities to support the County's Land Use Element at buildout (2037). The purpose of the RCF is to improve the reliability of WMWD's water supply; to reduce possible water shortages during dry years; to reduce dependence upon the direct delivery of imported water during dry year conditions; to improve groundwater quality; to deliver available imported water to its customers; and to contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient. Thus the RCF will facilitate the provision of water to support development in unincorporated Riverside County pursuant to the County's Land Use Element.

Additionally, the proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. Therefore, it can be concluded that the proposed project will not conflict with the land use designations and policies of the Riverside County General Plan.

County of San Bernardino

Realignment Alternatives

A portion of the Northern Reach of the proposed project traverses through a small area of the unincorporated portion of San Bernardino County near the City of Rialto. Additionally, a portion of the Central Feeder Connection and a related potential well field are located within a portion of unincorporated San Bernardino County near the City of Redlands. As shown in **Figure 4.9-8, County of San Bernardino General Plan and City of Rialto General Plan – Land Use Map**, the proposed project will enter unincorporated San Bernardino County from the City of Rialto on Agua Mansa Road and continue southwest in Agua Mansa Road into unincorporated Riverside County. **Figure 4.9-3,** shows that the Central Feeder Connection will extend east within the San Bernardino Avenue right-of-way from a potential well field within unincorporated San Bernardino County to the City of Redlands at the State Route 30/San Bernardino Avenue interchange. The land use designations along these alignments are listed in **Table 4.9-I, County of San Bernardino Land Use Designations**.

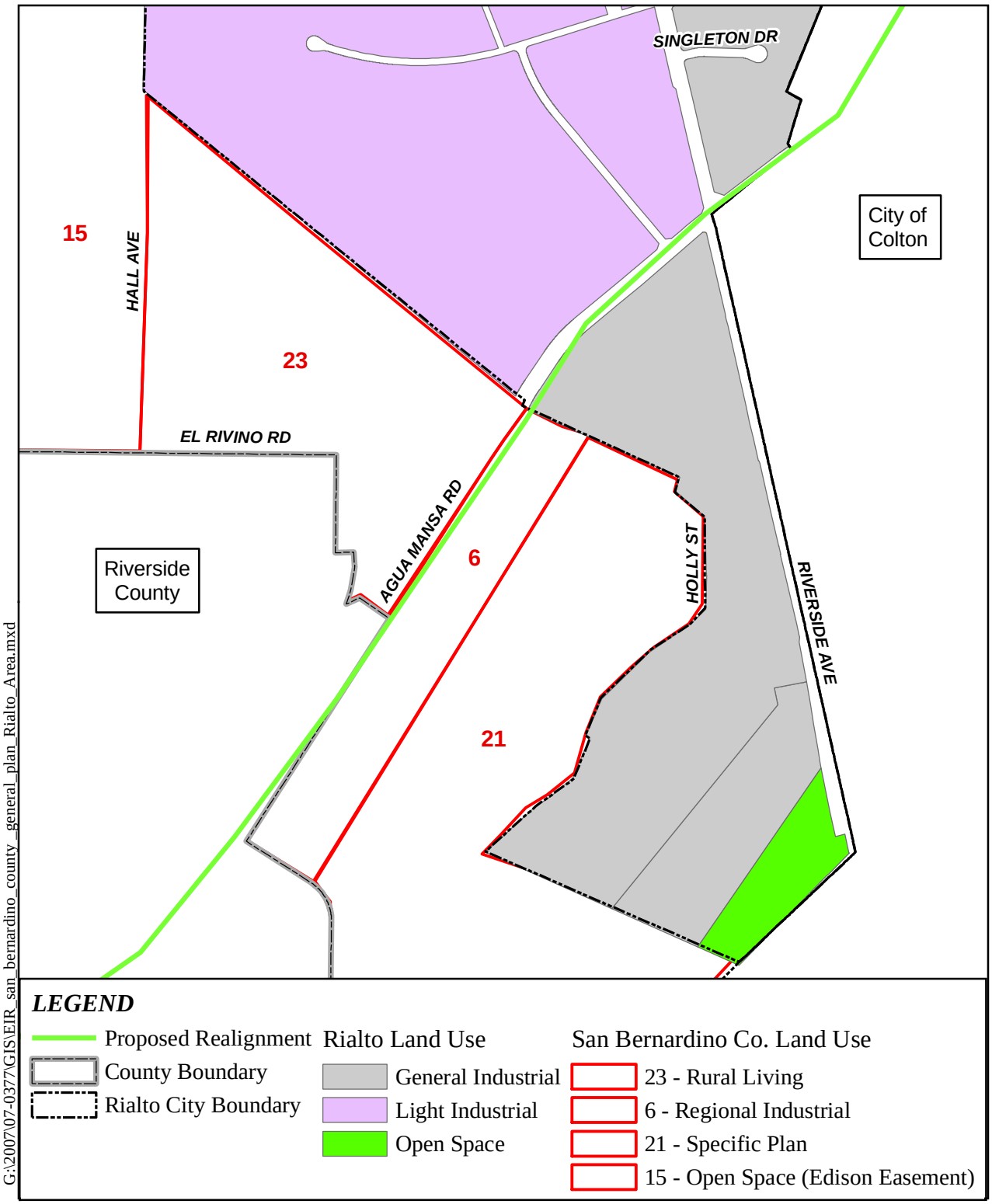
Table 4.9-I
County of San Bernardino Land Use Designations

Roadway Segment	Land Use Designation(s)
Northern Reach	
Agua Mansa Road	AM/SP (Agua Mansa Specific Plan)
Central Feeder Connection	
San Bernardino Avenue	EV/SD (East Valley Area Plan/Special Development), EV/CG (East Valley Area Plan/General Commercial)
Potential Well Field	EV/SD

Policies within the San Bernardino County General Plan state that the County will "assist in the development of additional conveyance facilities and use of groundwater basins to store surplus surface or imported water" (Policy CI 11.7) and that the County encourages local distribution systems to interconnect with regional and local systems, where feasible, to assist in maximizing use of local ground and surface water during droughts and emergencies (Policy CI 11.8).

That portion of the Northern Reach of the proposed project located within unincorporated portions of San Bernardino County will be constructed within the Agua Mansa Road right-of-way, and a portion of the Central Feeder Connection will be constructed within the San Bernardino Avenue right-of-way. As stated above, the purpose of the RCF is to reduce possible water shortages during dry years; to reduce dependence upon the direct delivery of imported water during dry year conditions; to improve groundwater quality; to deliver available imported water to its customers; and to contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient. Thus the RCF will facilitate implementation of San Bernardino County General Plan policies CI 11.7 and CI 11.8.

Additionally, the proposed project will not affect the ability of adjacent properties to be developed in accordance with the general plan land use designations applicable to those properties. Therefore, it can be concluded that the proposed project will not conflict with the land use designations and policies of the San Bernardino County General Plan.



Sources: County of San Bernardino General Plan Land Use Zoning District FH-30A; City of Rialto General PLan Figure II-2

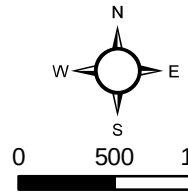
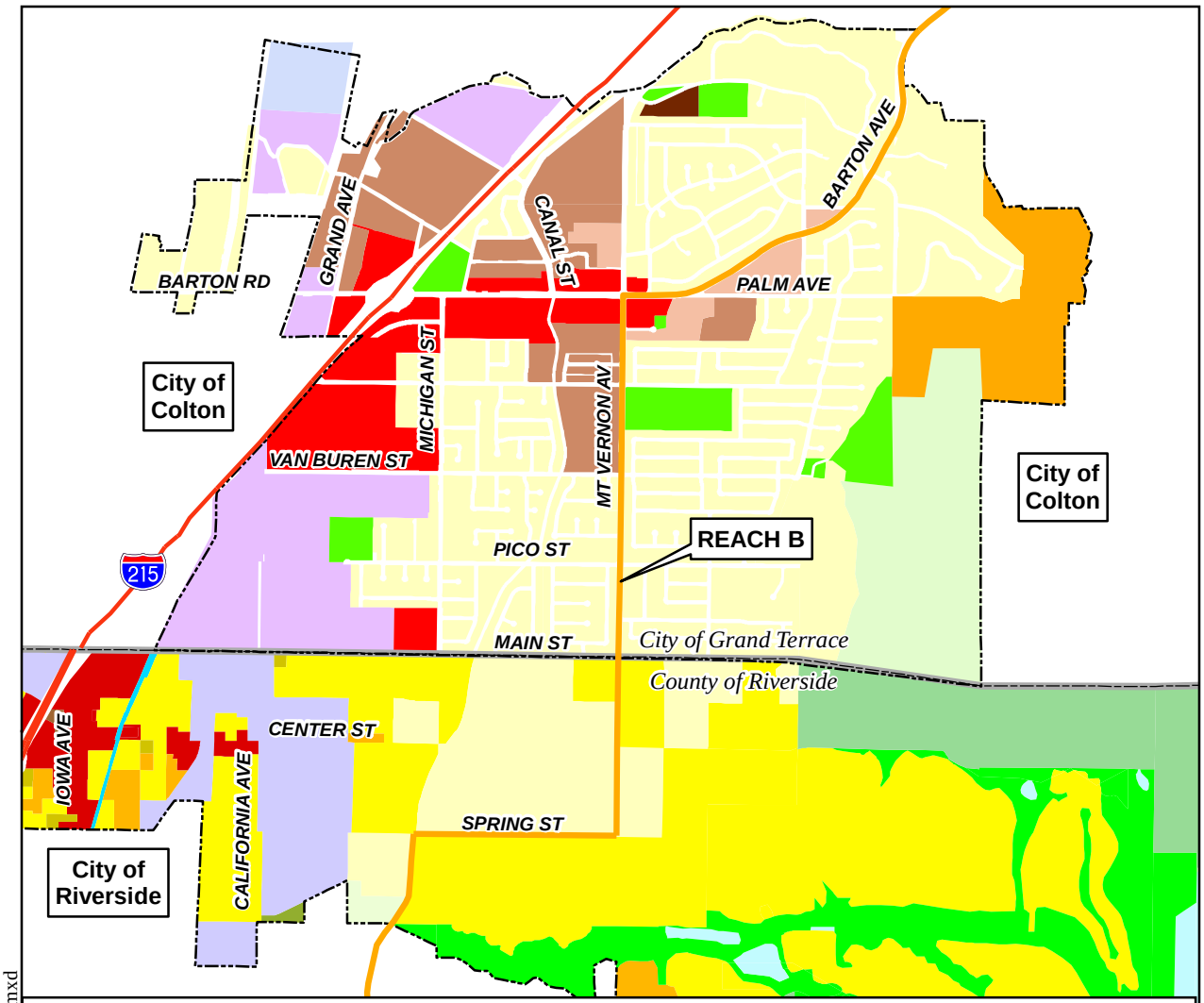


Figure 4.9-8
County of San Bernardino General Plan and City of Rialto General Plan - Land Use Map



2005 Project Alignment Alternative (Reach B)
City Boundaries
County Boundary

Riverside County GP Land Use
- Low Density Residential
- Medium Density Residential
- Medium High Density Residential
- High Density Residential
- Highest Density Residential
- Very High Density Residential
- Commercial Retail
- Light Industrial
- Public Facilities
- Rural Residential
- Rural Mountainous
- Conservation
- Open Space Recreation
- Water

City of Grand Terrace GP Land Use
- Low Density Residential
- Medium Density Residential
- Medium High Density Residential
- Hillside-Low Density Residential
- Hillside-Open Space
- Office Commercial
- General Commercial
- Industrial
- Floodplain-Industrial
- Public

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Sources: County of Riverside, Highgrove Area Land Use Plan, October 2003; City of Grand Terrace General Plan, 2007

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Figure 4.9-9
Riverside County General Plan - Highgrove Area Plan and City of Grand Terrace General Plan

Potential Significant Impacts/Environmental Consequences

The proposed RCF pipelines will be constructed primarily within existing road rights-of-way. Therefore, pursuant to paragraphs (d) and (e) of Section 53091 of the California Government Code, the proposed project is exempt from county and city building and zoning ordinances. The proposed RCF facilities will not be inconsistent with existing General Plan land use designations, goals, or policies. Therefore, the proposed project will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; **no impact/effect** will result from the action.

Proposed Mitigation Measures/Minimization

An Environmental Impact Report is required to describe feasible mitigation measures which could minimize significant adverse impacts (CEQA Guidelines, Section 15126.4). With respect to Land Use and Planning issues related to the proposed project, the above analysis determined that there is no impact resulting from the proposed action. Therefore, no Land Use and Planning mitigation is necessary.

Determination of Significance under CEQA

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

4.9.4 No Project/Action Alternative

No land use impacts would result from the No Project/Action Alternative, as nothing would be built.

4.10 NOISE

Potential impacts related to the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, the creation of a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, and airport noise were found to be less than significant in the Initial Study/NOP prepared for this project (Appendix A). The following discussion addresses potential impacts due to the exceedance of standards contained in general plans or noise ordinances and substantial temporary or periodic increases in ambient noise levels sourced from project construction and operation.

In addition to the 2005 Certified Program EIR (2005 PEIR) and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Albert A. Webb Associates, *Acoustical Impact Analysis, Riverside-Corona Feeder Project*, September 23, 2009. (Appendix H)
- City of Colton, *Municipal Code*, LexisNexis, 2003. (Available at http://www.bpc.iserver.net/codes/colton/index.htm)
- City of Colton, *Final Preliminary General Plan for the City of Colton*, May 5, 1987. (Available at http://www.ci.colton.ca.us/CD_Plan.html, accessed on December 30, 2008.)
- City of Rialto, *Municipal Code*, LexisNexis, 2008. (Available at www.municipalcodes.lexisnexis.com/codes/rialto/)
- City of Rialto Development Services Department, *City of Rialto General Plan*, March 31, 1992. (Available at the City of Rialto Development Services Department, Planning Division.)
- City of Riverside, *Municipal Code* (Available on December 30, 2008 at http://www.riversideca.gov/municode/)
- City of Riverside Planning Department, *General Plan 2025*, November, 2007. (Available at http://www.riversideca.gov/planning/cityplans.asp, accessed on December 28, 2008.)
- City of San Bernardino, *Municipal Code* (Available at http://www.ci.san-bernardino.ca.us/residents/municipal_code.asp, accessed on December 30, 2008.)
- City of San Bernardino Development Services Department, Division of Planning, *San Bernardino General Plan*, November 1, 2005. (Available at http://www.ci.san-bernardino.ca.us/depts/devserv/planning/default.asp, accessed on December 28, 2008.)
- Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, International Congress and Exposition on Noise Control Engineering, May 2006. (Available at http://www.akrf.com/knowledge/white_papers/Construction%20Noise%202008%20INCE.pdf, accessed on December 30, 2008.)

- Riverside County Ordinance No. 457, Building Code and Fees Ordinance. (Available at www.clerkoftheboard.co.riverside.ca.us/ords/400/457.pdf, accessed on December 30, 2008.)
- Riverside County Ordinance No. 847. (Available at www.clerkoftheboard.co.riverside.ca.us/ords/800/847.pdf, accessed on December 30, 2008.)
- San Bernardino County, *Development Code* (Available at http://www.sbcounty.gov/landuseservices/DevCode/Default.asp, accessed on December 30, 2008.)
- County of San Bernardino Land Use Services Department, *San Bernardino 2007 General Plan*, March 13, 2007. (Available at http://www.sbcounty.gov/landuseservices/general_plan/Default.asp, accessed on December 29, 2008.)

4.10.1 Setting/Affected Environment

The proposed Riverside-Corona Feeder Pipeline Realignment (proposed project) is located within the boundaries of the cities of Colton, Redlands, Rialto, Riverside, and San Bernardino; and unincorporated areas of the counties of Riverside and San Bernardino. As indicated on **Figure 4.10-1, Proposed Project with Previous Alignment/Location**, the 2005 Project Alignment included over 30 miles of pipeline. The realigned portion of the alignment includes over 20 miles of the pipeline.

No existing ambient noise level readings were taken because minimal permanent increases in ambient noise levels will not result from the project. Project-generated noise will result from construction so temporary impacts to sensitive receptors adjacent to project construction would be potentially affected. The Preferred Alternative would traverse through several types of existing and planned land uses. **Table 4.10-A, Existing Land Uses of Potentially Affected Properties**, provides a summary of existing land uses that have a potential to be impacted by noise from the project.

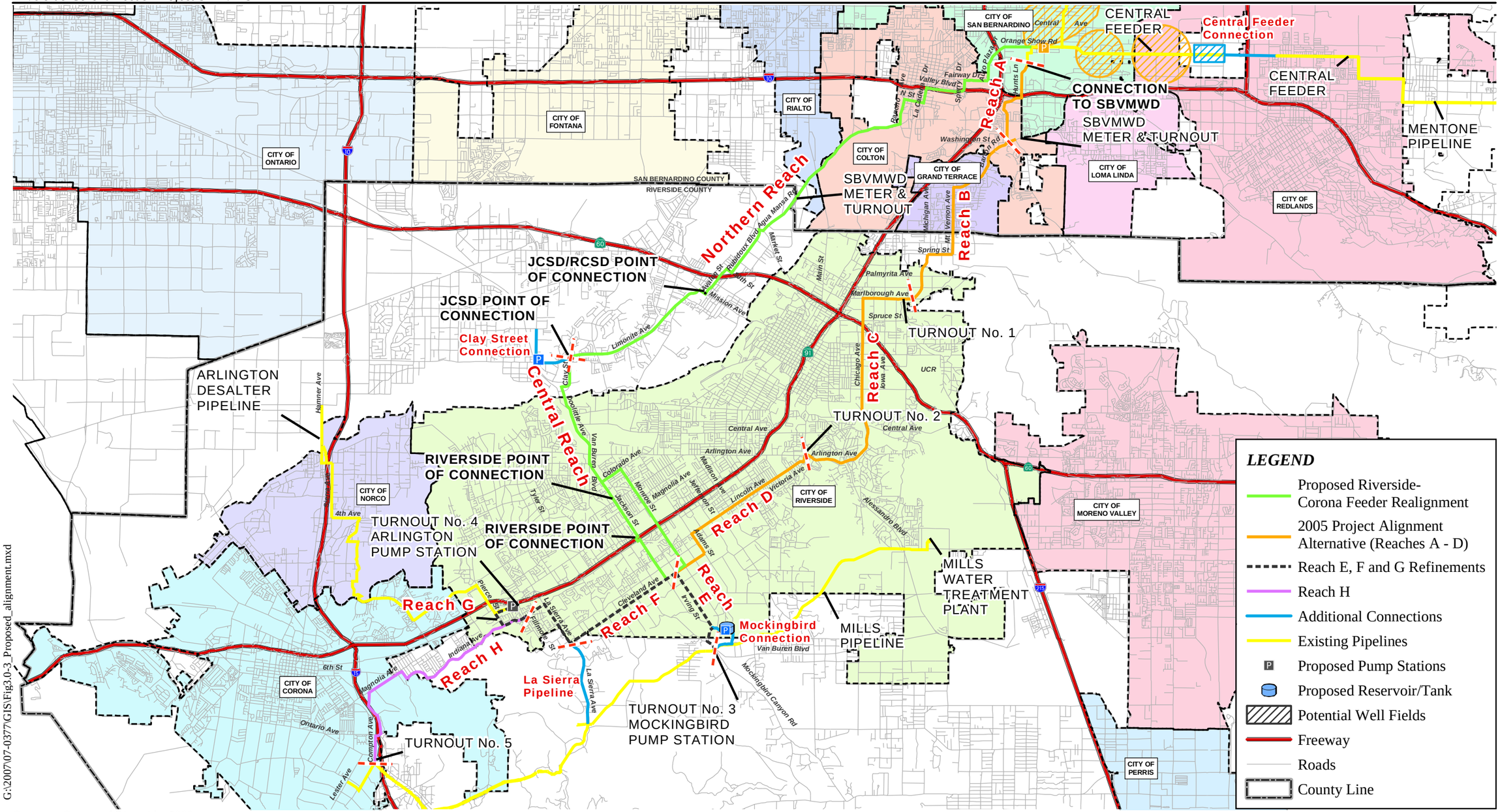
Table 4.10-A
Existing Land Uses of Potentially Affected Properties

Project Component[1]	Jurisdiction	Existing Land Use(s)
2005 Alignment Reach A	City of San Bernardino	Open Space, Business Park
2005 Alignment Reach A	City of Colton	Commercial, Residential, Retail, Elementary School
2005 Alignment Reach B	City of Colton	Residential, Retail
2005 Alignment Reach B	City of Grand Terrace	Residential, Commercial, Retail, Office, Elementary School, Middle School, Civic Center, Library, church
2005 Alignment Reach B	Riverside County	Residential
2005 Alignment Reaches C through D	City of Riverside	Industrial, Office, Residential, High Schools, Retail, University, Parks, Nursing Home, Agriculture
2005 Alignment - Reach E, Refinement - Reach E	City of Riverside	Agriculture, Residential, Park
2005 Alignment - Reach E, Refinement - Reach E	Riverside County	Agriculture, Residential, Park
2005 Alignment Reach F, Refinement – Reach F	City of Riverside	Residential, Schools, Retail, Office
2005 Alignment Reach F	County of Riverside	Residential
2005 Alignment Reach G	City of Riverside	Residential
Refinement – Reach G	City of Riverside	Residential, Commercial, Business Park, School
2005 Alignment Reach H	City of Corona	Industrial, Commercial, Residential, Landfill, Retail
Northern Reach	City of San Bernardino	Commercial
Northern Reach	City of Colton	Commercial, Residential, Retail
Northern Reach	City of Rialto	Industrial
Northern Reach	San Bernardino County	Industrial
Northern/Central Reach	Riverside County	Residential, Commercial
Central Reach	City of Riverside	Commercial, Residential, Retail, Institutional, Medical, School and Park
Central Feeder Connection	San Bernardino County, City of Redlands	Agricultural, Residential, Industrial
Clay Street Connection	Riverside County	Residential, Commercial, Industrial
Mockingbird Connection	Riverside County, City of Riverside	Agricultural, Residential
La Sierra Pipeline	Riverside County	Residential

[1] As identified on Figure 3.0-3.

For listings of the General Plan land use designations for all the alternatives, see **Tables 4.9-A** through **4.9-I**, in the previous section of this SEIR/EIS. As shown in each agency's respective general plan, once built, various areas, in addition to the existing uses on the ground today, have the potential to be temporarily impacted by noise from the project's construction.

A list of institutional sensitive receptors is provided in **Table 4.10-F, Identified Institutional-Type Noise Sensitive Receptors Adjacent to Project Alignment**.



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Sources: County of Riverside, 2009; County of San Bernardino, 2009.

Figure 4.10-1
Proposed Project with Previous Alignment/Location

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. A doubling of the energy of a noise source, such as the doubling of a traffic volume, would increase the noise level by 3 dBA; halving of the energy would result in a 3 dBA decrease. It is widely accepted that the average healthy ear can barely perceive a noise level change of 3 dBA as this increase can usually only be detected in a quiet or laboratory setting. An increase in 5 dBA is more readily discernable and considered easier to perceive in an exterior environment that includes some background noise. **Figure 4.10-2**, below, shows the relationship of various noise levels to common noise events.

As a rule of thumb, noise from point sources, such as construction equipment, will decrease by 6 dBA for every doubling of distance from the receptor. The level of impact will depend upon several typical factors which include the distance between the construction activity and sensitive receptor, the types of equipment used, the duration of construction operations, and the time of day during which the construction activities occur, among others.

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 often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. Other receptors include office and industrial buildings which are not considered to be as sensitive as residences, but are still protected under the affected jurisdictions' land use compatibility standards.

The completed project will be located primarily underground; as discussed later in this section, aboveground project facilities, such as a reservoir and fully enclosed pump stations, will not be sources of adverse noise. Once completed, the project will be unmanned (apart from periodic maintenance and possible repair work); and, there will be no operational noise associated with its ongoing use. Therefore, the only noise standards that apply to this project, with regards to regulatory compliance, are those pertaining to temporary construction-related activities. However, to determine the potential for significant noise impacts, in support of CEQA apart from regulatory compliance, the noise standards for potentially impacted land uses in each of the affected jurisdictions are relevant.

Noise exposure standards have been developed by the State of California and recommended for inclusion into the Noise Element of local general plans. As stated above, the project is located within the jurisdictions of five cities and two counties. Each of the jurisdictions' noise standards for the affected land uses are shown in **Figure 4.10-3, Land Use Compatibility for Community Noise Exposure**.

Figure 4.10-2
Typical Decibel Level of Common Sounds

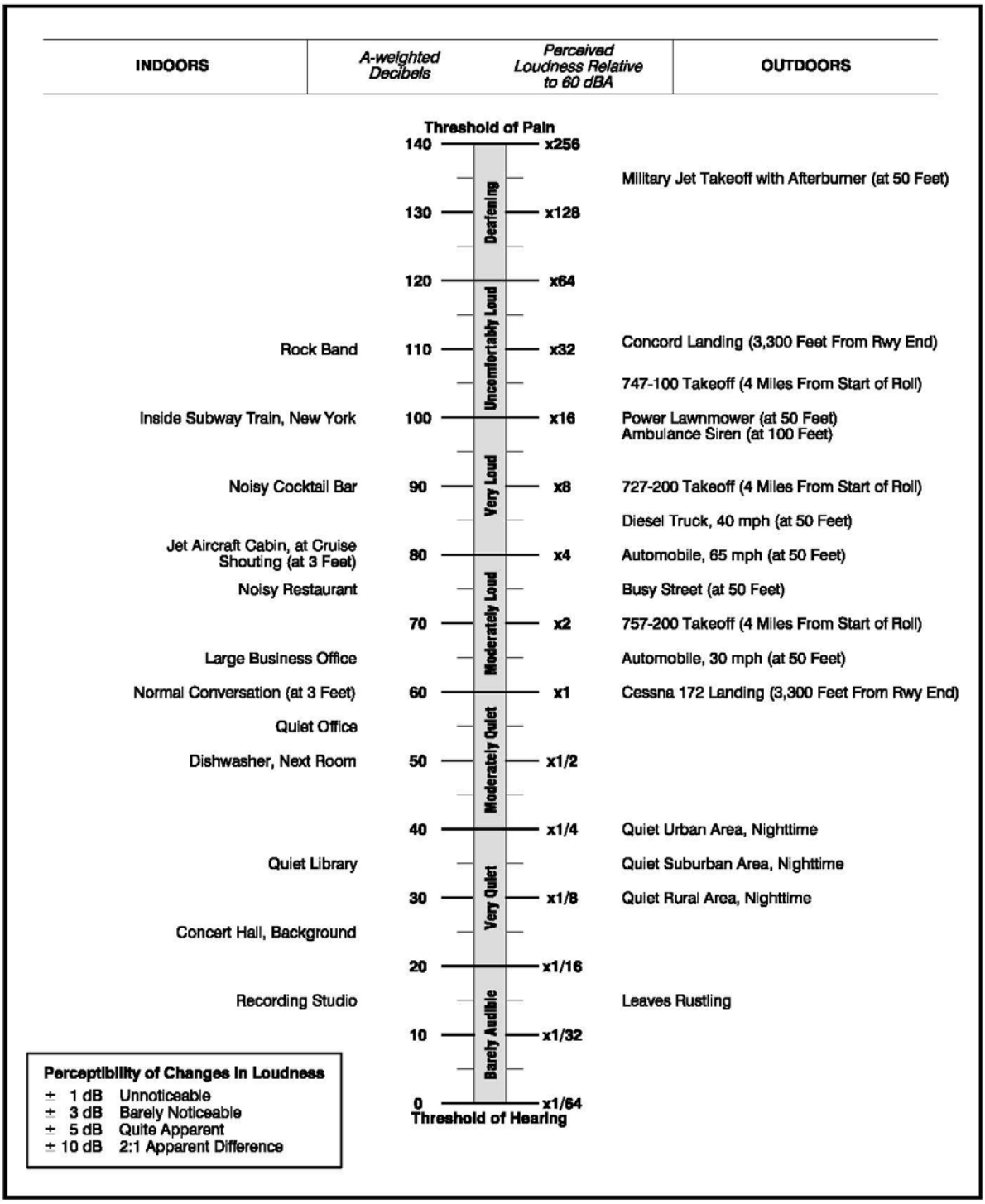


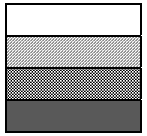
Figure 4.10-3
Land Use Compatibility for Community Noise Exposure

Land Use Category	Agency	Community Noise Exposure Level Ldn, or CNEL, dBA						
		55	60	65	70	75	80	85
Residential-Single Family	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							
Residential-Multi Family	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							
Motels, Hotels	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							
Schools, Libraries, Churches, Nursing Homes	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							
Auditoriums, Concert Halls	City of San Bernardino							
	City of Colton	N/A						
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino	N/A						

Land Use Category	Agency	Community Noise Exposure Level Ldn, or CNEL, dBA						
		55	60	65	70	75	80	85
Sports Arena	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands	N/A						
	County of Riverside							
	County of San Bernardino	N/A						
Playgrounds, Neighborhood Park	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							
Golf Courses, Cemeteries, Water Recreation	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino	N/A						
Office Buildings, Businesses, Commercial & Professional	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							
Industrial, Manufacturing, Utilities & Agriculture	City of San Bernardino							
	City of Colton							
	City of Riverside							
	City of Redlands							
	County of Riverside							
	County of San Bernardino							

Source: Noise Element for each agency, except for the City of Rialto which does not have noise standards available.

Legend:



= Normally Acceptable/Clearly Compatible
= Conditionally Acceptable/Normally Compatible
= Normally Unacceptable/Normally Incompatible
= Clearly Unacceptable/Clearly Incompatible

4.10.2 Summary of 2005 Certified Program EIR for Riverside-Corona Feeder Project

Noise, other than as it related to biological resources, was not addressed in the original 2005 Certified Program EIR (2005 PEIR).

4.10.3 Analysis of Riverside-Corona Feeder All Alternatives

Thresholds of Significance

Western Municipal Water District (WMWD) has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, WMWD's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to and from noise may be considered potentially significant if the project would:

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

Related Regulations

California Government Code

Paragraphs (d) and (e) of Section 53091 of the California Government Code sets forth the following provisions applicable to the construction of facilities for the production and transmission of water:

> (d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.
>
> (e) Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.

Local Regulations

As discussed previously in this section, the completed project will be primarily located underground; aboveground project facilities, such as reservoirs and fully enclosed pump stations, will not be sources of adverse noise. Once completed, the project will be unmanned (apart from periodic maintenance and possible repair work) and there will be no operational noise associated with its use. Therefore, the noise standards contained in **Table 4.10-B, Local Noise Regulations** are the local regulations that apply to construction within those jurisdictions.

Table 4.10-B
Local Noise Regulations

Project Component[1]	Jurisdiction	Applicable Noise Regulation
Northern Reach, Reach A	City of San Bernardino	Municipal Code Chapter 8.54 – Noise Control Section 8.54.060 – Exemptions H. Construction, operation, maintenance, and repairs of equipment, apparatus, or facilities of park and recreation departments, public work projects, or essential public services and facilities, including, but not limited to, trash collection and those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.
Northern Reach/Reach A and B	City of Colton	Not applicable.[2]
Reach B	City of Grand Terrace	Municipal Code Title 8 – Health and Safety 8.108.040 Special activities. In addition to the exemptions provided for in Section 8.108.030, the following activities shall be exempted from the provisions of this chapter: D. Noise sources associated with or vibration created by construction, repair or remodeling or grading of any real property or during authorized seismic surveys, provided said activities do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a national holiday.
Northern Reach	City of Rialto	Municipal Code Chapter 9.50 – Noise Control Section 9.50.060 – Exemptions K. Construction, operation, maintenance, and repairs of equipment, apparatus, or facilities of park and recreation departments, public work projects, or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.

Project Component[1]	Jurisdiction	Applicable Noise Regulation
Northern Reach/Central Feeder Connection	San Bernardino County	San Bernardino County Development Code Chapter 83.01 – General Performance Standards Section 83.01.080 – Noise (g) Exempt noise. The following sources of noise shall be exempt from the regulations of this Section: (3) Temporary construction, maintenance, repair, or demolition activities between the hours of 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays.
Northern Reach/Central Reach/Reach B/Clay Street Connection/Mockingbird Connection/La Sierra Pipeline Connection	Riverside County	Ordinance No. 847 Section 2 – Exemptions B. Capital improvement projects of a governmental agency.
Reaches A – H/Central Reach/Mockingbird Connection	City of Riverside	Municipal Code Chapter 7.35 – General Noise Regulations Section 7.35.020 – Exemptions The following activities shall be exempt from the provisions of this title: F. Public Health, Welfare, and Safety Activities. The provisions of this Title shall not apply to construction maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare, and safety; including but not limited to, trash collection, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, vacuuming catch basins, repairing of damaged poles, removal of abandoned vehicles, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc. (Ord. 6917 § 1, 1996; Ord. 6328 § 2, 1996; Ord. 6273 § 1 (part), 1996).
Central Feeder Connection	City of Redlands	Municipal Code Title 8 – Health and Safety Chapter 8.06 – Community Noise Control Section 8.06.120 – Exemptions G. Construction Activity : This chapter shall not apply to noise sources associated with new construction, remodeling, rehabilitation or grading of any property provided such activities take place between the hours of seven o'clock (7 :00) A.M. and six o'clock (6 :00) P.M. on weekdays, including Saturdays, with no activities taking place at any time on Sundays or federal holidays. All motorized equipment shall be equipped with functioning mufflers.

Project Component[1]	Jurisdiction	Applicable Noise Regulation
Reach H	City of Corona	Title 17 of Corona Municipal Code 17.84.040 Noise. (A) Purpose and intent. (1) The purpose of this section is to regulate noise and vibration in the interest of the public health, safety and general welfare. The city finds that certain noise levels and vibrations are detrimental to the public health, safety and general welfare and that the primary sources of noise in the city are freeways, highways, manufacturing uses, railroads, the airport and construction noise. The noise element of the General Plan . . . (D) Construction Noise. (2) Construction noise. Construction noise is prohibited between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction noise is defined as noise which is disturbing, excessive or offensive and constitutes a nuisance involving discomfort or annoyance to persons of normal sensitivity residing in the area, which is generated by the use of any tools, machinery or equipment used in connection with construction operations. General Plan Public Health & Safety Element, Noise Section on page 232 establishes that mitigation is required for new uses where roadway noise exceeds 65 dBA.

[1] As identified on Figure 4.10-1, presented earlier in this section.

[2] The City of Colton has not established performance standards with regards to construction-related noise. There is currently no ordinance, municipal code, or general plan standard established to regulate such noise. Based on a telephone conversation with the city's Planning Manager (Andrés Soto) on September 8, 2008, construction-related noise is considered exempt.

As shown in **Table 4.10-B**, the cities of San Bernardino, Rialto, and Riverside specifically consider the construction of public works projects exempt from noise regulations; there are no restrictions or requirements placed on said exemptions within these jurisdictions. The City of Colton has not established noise standards that apply to construction-related noise. Therefore, based on a telephone conversation with the city's Planning Manager (Andrés Soto, September 8, 2008), construction-related noise should be considered exempt since this type of noise is currently not regulated by the city.

The Cities of Grand Terrace, Corona and Redlands, and the Counties of Riverside and San Bernardino do not regulate the level of noise generated by the construction of a project. However, these jurisdictions do regulate the conditions under which construction activities can take place, such as the proximity of construction activity to sensitive receivers, hours of the day that construction activity cannot take place, and/or days on which construction activity cannot take place (e.g., Sundays and/or federal holidays).

Apart from the regulations found in the City of Redlands Municipal Code, listed in **Table 4.10-B** above, the City of Redlands has no other regulation (e.g., ordinance, General Plan guideline) that applies to construction-related noise. Therefore, to meet applicable noise regulations within the

jurisdiction of the City of Redlands, project construction shall not take place during the hours of 6:00 p.m. and 7:00 a.m., nor during any time on Sundays or federal holidays.

Apart from the regulations found in the City of Grand Terrace Municipal Code, listed in **Table 4.10-B** above, the City of Grand Terrace has no other regulation (e.g., ordinance, General Plan guideline) that applies to construction-related noise. Therefore, to meet applicable noise regulations within the jurisdiction of the City of Grand Terrace, project construction shall not take place during the hours of eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a national holiday.

Apart from the regulations found in the City of Corona Municipal Code, listed in **Table 4.10-B** above, the City of Corona has General Plan guideline that applies to noise, but no other addressing construction-related noise. Therefore, to meet applicable noise regulations within the jurisdiction of the City of Corona, project construction shall not take place during the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.

Apart from the regulations found in the San Bernardino County Municipal Code, listed in **Table 4.10-B**, San Bernardino County has no other regulation (e.g., ordinance, General Plan guideline) that applies to construction-related noise. Therefore, to meet applicable noise regulations within the jurisdiction of unincorporated San Bernardino County, project construction shall not take place during the hours of 7:00 p.m. and 7:00 a.m., nor during any time on Sundays or federal holidays.

As shown in **Table 4.10-B**, Riverside County Ordinance No. 847 specifies that construction-related noise is exempt in unincorporated Riverside County, provided that it is located one-quarter of a mile or more from an inhabited dwelling. However, if construction is planned to occur within one-quarter mile of an inhabited dwelling, construction activities shall not take place between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September or between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May. Additionally, Ordinance No. 847 allows for exceptions to these restraints with written consent from the Director of Building and Safety.

Design Considerations/Avoidance

The project's pump stations will be fully contained within masonry-block enclosures, eliminating the potential for this to be a source of adverse noise impacts. The remaining portion of the project, which consist of a water reservoir (i.e., tank) and underground pipeline infrastructure, are not sources of adverse noise impacts, once operational, and therefore do not require any design considerations with regards to noise.

Potential Significant Impacts/Environmental Consequences

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

The project's pipeline component will be placed entirely underground and inherently does not generate noise. Additionally, the reservoir component, once operational, also inherently does not generate noise. The two pump stations (at the Clay Street and Mockingbird Connections, as shown on **Figure 4.10-1**) will be fully contained within masonry block enclosures. To assure that this occurs, **MM Noise 4** shall be implemented. Therefore, operation of the completed project will not result in or cause noise levels that exceed established standards; consequently, only temporary construction-related noise resulting from the project will be the focus of this threshold question.

The duration of the project's construction will take approximately four to ten years. Construction will be performed in discrete steps, each of which has its own mix of equipment and consequently its own noise characteristics. Thus noise levels will fluctuate depending upon construction phase, equipment type, duration of equipment use, distance between the noise source and receptor, and the presence or absence of noise attenuating structures.

Table 4.10-C, Anticipated Pipeline Construction Equipment Type and Quantities by Method, itemizes the types and quantities of equipment anticipated to be used for each of the activities as identified in the Noise Study and based upon currently available data.

Table 4.10-C
Anticipated Pipeline Construction Equipment Types and Quantities by Method[1]

Construction Equipment Type	Approximate Quantity Needed for Construction Method		
	Boring	**Excavation**	**Microtunneling**
Backhoe/Loader	1	3	1
Compressor	- -	2	- -
Crane	1	1	1
Excavator	- -	2	- -
Generator	2	- -	2

[1] This information is based upon preliminary data available during the Noise Study analysis.

Table 4.10-D, Estimated Construction Noise Levels at 50 Feet, lists the estimated noise levels produced by individual pieces of equipment that are anticipated to be used for pipeline construction, at a uniform distance of 50 feet from the noise source.

Table 4.10-D
Estimated Construction Equipment Noise Levels at 50 Feet

Construction Equipment Type	Noise Level at 50 Feet (dBA Leq)
Backhoe/Loader	80
Compressor	80
Crane	85
Excavator	85
Generator	82

Source: Webb Associates, *Acoustical Impact Analysis, Riverside-Corona Feeder Project*, December 1, 2008.

Based upon the estimated construction equipment quantities provided in **Table 4.10-C** and the reference noise levels provided in **Table 4.10-D**, noise contours were determined for the three pipeline construction methods that are anticipated to be employed. To present a worst-case scenario, those noise contours represent the combined noise level for all of the equipment estimated to be used for each method of pipeline construction, and assumes that every piece of that equipment will be running simultaneously and continuously.

Various conditions will be encountered that can be factors in noise propagation. One factor is the height from which the noise will be emanating. This factor will be constantly changing throughout the construction process as some of the work will take place below-ground, while other parts of the work will take place above-ground. The noise study modeled all construction-sourced noise as originating from above-ground to once again best represent a worst-case scenario.

Another factor affecting noise impacts is the absorptive properties of the surrounding landscape (natural and manmade) that intervenes between a noise source and receivers. The sound attenuating properties of topography, foliage, ground cover, weather and existing buildings/barriers were not accounted for in this analysis. Therefore, distances presented in the noise contours are modeled on a hypothetically flat-plane with no obstructions, thereby, considerably overstating probable noise impacts.

The noise contours, detailed in **Table 4.10-E, Noise Contours for Project Construction by Method**, estimate worst-case distances from the noise source to the 75, 70, 65, and 60 dBA Leq contours. Sensitive receptors located within the 75 dBA Leq contour will experience periodic noise levels that may exceed 75 dBA.

Table 4.10-E
Noise Contours for Project Construction by Method

Construction Method Type	Distance to Noise Level (in feet)			
	75 dBA Leq	70 dBA Leq	65 dBA Leq	60 dBA Leq
Boring	240	430	760	1,350
Excavation	340	600	1,075	1,900
Microtunneling	240	430	760	1,350
Standard Construction[1]	141	250	446	790

[1] This method applies to the construction of the project's water reservoir and pump stations.

Figures 4.10-4 through **4.10-13** graphically depict the contour data provided in **Table 4.10-E** for some sections and facilities proposed as examples that are representative of all alternatives. These graphic noise contours were only mapped for the Central Reach portion of the project and for the Central Feeder Connection, Clay Street Connection, La Sierra Pipeline and Mockingbird Connection. These examples from the Realignment Alternative with Additional Connections include major roads, residential and industrial streets, boring situations, and pump station/tank construction. As described in Section 3.8, the RCF will be constructed in operable phases. The project will begin within the next two years with Reaches E, F and G 2008 Refinement, Mockingbird Connection and wells. The last phase potentially being started over ten years after project initiation will likely include the Northern Reach, La Sierra Pipeline Connection and Reach H. The likely middle two phases will include the Central Reach across the Santa Ana River and the Clay Street Connection, followed by the Central Feeder Connection.

Construction of the Northern Reach of the Realignment Alternatives, Reaches A through D of the 2005 Project Alignment, and Reach H, as well as some of the mapped reaches/facilities may not begin construction for approximately ten years and current mapping may not accurately reflect the locations of any sensitive receptors that would exist at the time that construction begins; therefore, for any reach not included in **Table 4.10-F**, new data identifying sensitive receptors shall be collected prior to construction in order to produce noise contours that reflect conditions at that time (See mitigation measures **MM Noise 1** and **MM Noise 2** below).

Also indicated on **Figures 4.10-4** through **4.10-6** are the existing multi-family and institutional-type noise sensitive receptors that are located nearest to the project's alignment. These uses in particular were included on the figures to call attention to them and avoid a possible oversight of their presence. While single-family residential uses are considered noise-sensitive receptors, these areas are not indicated on these figures due to the quantity and their readily apparent use which can be read from the aerial photograph. The identified multi-family and institutional-type sensitive receivers are indicated on the figures by a number which correlates with those listed in **Table 4.10-F, Identified Institutional-Type Noise Sensitive Receptors Adjacent to Project Alignment**. The data provided in **Table 4.10-F** was compiled on October 16, 2008 via site reconnaissance and via research, and is not intended as a complete list of potentially affected sensitive land uses, but rather as a means of calling attention to those distinct land uses that are clearly noise sensitive and that have the highest potential for significant impacts.

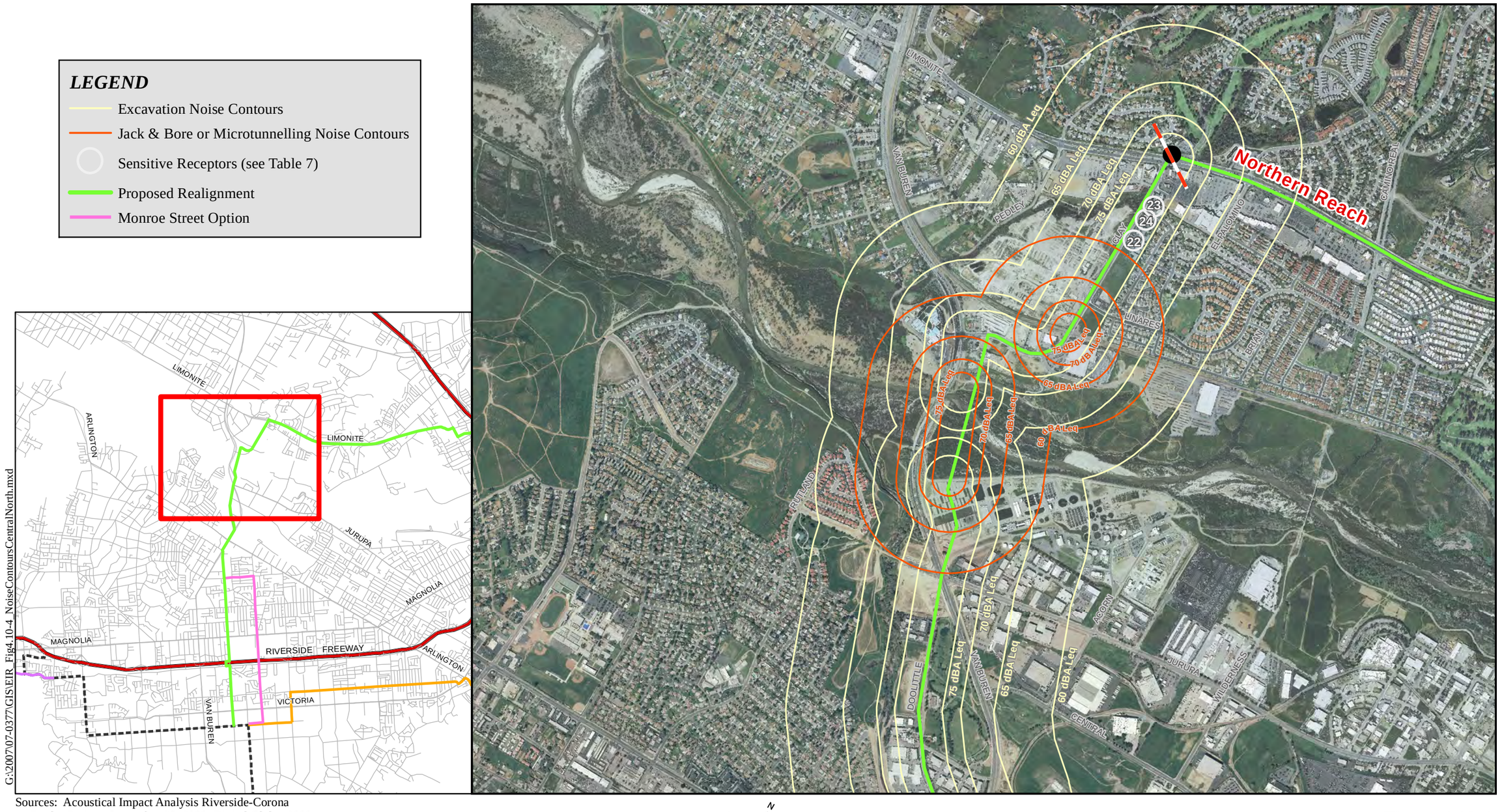
Table 4.10-F
Identified Institutional-Type Noise Sensitive Receptors Adjacent to Project Alignment [1, 2]

Potentially Affected Receptor[3]		Address
1	Riverside Christian School	3532 Monroe Street, Riverside CA 92504
2	Parkside Village Apartments	3675 Monroe Street, Riverside CA 92504
3	Presidential Townhomes	3680 Monroe Street, Riverside CA 92504
4	Creekside Senior Apartments	4291 Monroe Street, Riverside CA 92504
5	Hope Community Church	9085 Colorado Avenue, Riverside CA 92503
6	Jackson Elementary	4585 Jackson Street, Riverside CA 92503
7	Cypress Garden Convalescent Home	9025 Colorado Avenue, Riverside CA 92503
8	Arlington High School	2951 Jackson Street, Riverside CA 92503
9	Sherman Indian High School	9010 Magnolia Avenue, Riverside CA 92503
10	Andrew Jackson Apartments	3636 Jackson Street, Riverside CA 92503
11	Church of Jesus Christ of Latter Day Saints	3680 Jackson Street, Riverside CA 92503
12	St. Thomas Church	3774 Jackson Street, Riverside CA 92503
13	St. Thomas K-8 School	9136 Magnolia Avenue, Riverside CA 92503
14	Parkview Community Hospital	3865 Jackson Street, Riverside CA 92503
15	Parkview Community Hospital Medical Ctr.	3865 Jackson Street, Riverside CA 92503
16	St. Michaels Church	4070 Jackson Street, Riverside CA 92503
17	Christian Life Center Church & School	9085 California Avenue, Riverside CA 92503
18	Church of Jesus Christ of Latter Day Saints	4375 Jackson Street, Riverside CA 92503
19	Townhomes (w/ Balconies)	4440-4492 Jackson Street, Riverside CA 92503
20	Faith Lutheran Church	4785 Jackson Street, Riverside CA 92503
21	Whispering Fountains of Riverside Apartments	4790 Jackson Street, Riverside CA 92504
22	Encore Senior Village - Alzheimer's Center	6280 Clay Street, Riverside CA 92509
23	La Petite Academy Day Care	6212 Clay Street, Riverside CA 92509
24	Riverside Medical Clinic	9250 Clay Street, Riverside CA 92509
Reach F	Bethel Christian Schools	2425 Van Buren Boulevard, Riverside CA 92503
Reach F	Orrenmaa Elementary School	3350 Fillmore Street, Riverside CA 92503
Reach F	Arizona Middle School	11045 Arizona Avenue, Riverside CA 92503
Reach G	Alvord Continuation High School/Adult Ed.	3606 Pierce Avenue, Riverside CA 92503

[1] Compiled on October 16, 2008, via site reconnaissance. Un-numbered locations were identified from The Thomas Guide, 2001 and www.alvord.k12.ca.us/schools/alvord.html and www.bethelchristiancenter.cc/index.html.
[2] This is a partial list and is not intended to represent all of the potentially affected land uses.
[3] The receptor numbers in this column correlate with the numbers shown on **Figures 4.10-4** through **4.10-6** of this report.

Based upon the information provided in **Table 4.10-E**, temporary and intermittent construction-related noise levels at sensitive receivers located adjacent to the project site could be considered **significant** under CEQA, even though construction activities are exempt from noise regulations in all seven of the affected jurisdictions. However, since construction of the project is: temporary

in nature, mitigated to assure construction equipment is well maintained, mitigated to notify potentially impacted sensitive receivers, and limited with respect to the hours of construction based upon mitigation and regulations and practices within the affected jurisdictions (**MM Noise 1 through MM Noise 3, and MM Trans 6**); impacts are considered **less than significant with mitigation and regulations implemented**. **MM Noise 1** requires limitations on the times of construction for noise-sensitive receivers located within one-quarter mile of the project because all 65 dBA or higher noise contours fall within this distance. **MM Noise 2** requires notification of all residences in areas where blasting may need to occur. **MM Noise 3** requires well-maintained mufflers on construction equipment. **MM Trans 6** requires notification of all uses immediately adjacent to construction and provides a contact phone number. The only potentially significant operational noise will come from operating pump stations which will be mitigated by **MM Noise 4**.

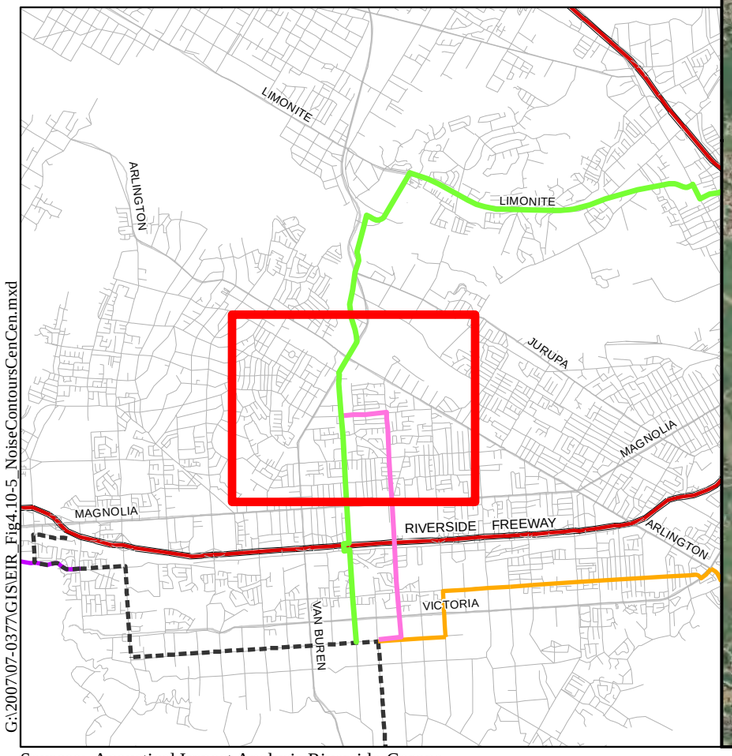


Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

Figure 4.10-4
Noise Contours for Project Construction - Central Reach (Northern Portion)

LEGEND

- Excavation Noise Contours
- Jack & Bore or Microtunnelling Noise Contours
- Sensitive Receptors (see Table 7)
- Proposed Realignment
- Monroe Street Option





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Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

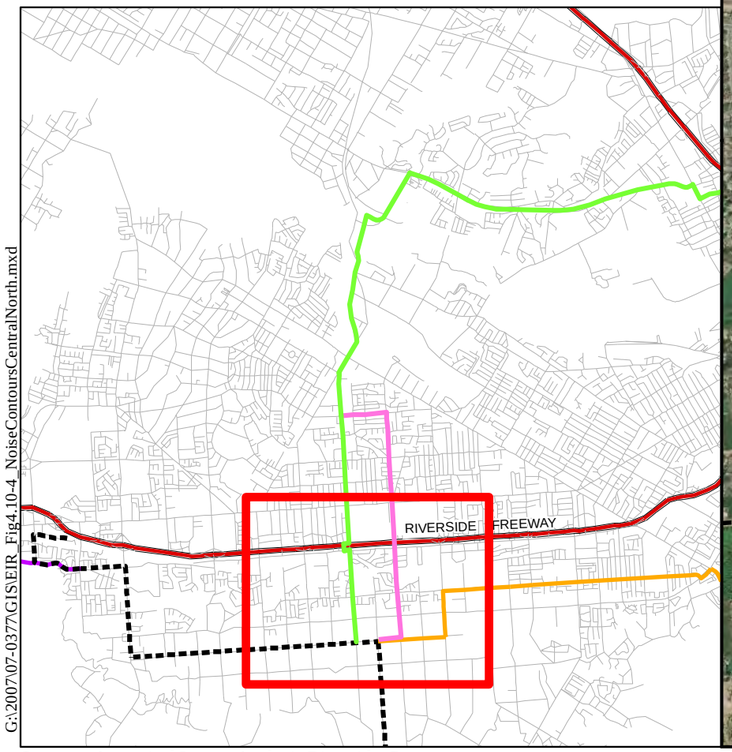
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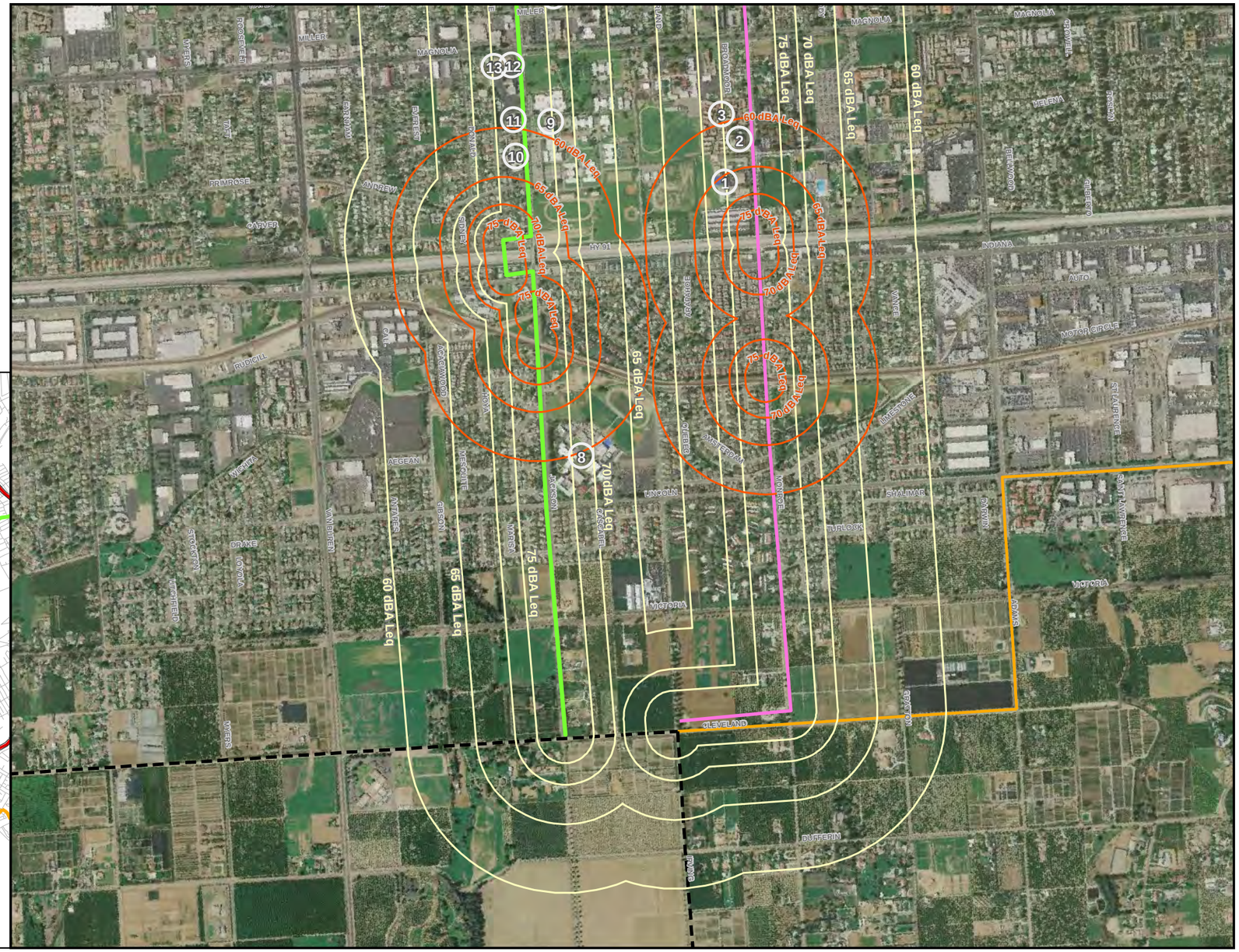
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Figure 4.10-5
Noise Contours for Project Construction - Central Reach (Central Portion)

LEGEND

- Excavation Noise Contours
- Jack & Bore or Microtunnelling Noise Contours
- Sensitive Receptors (see Table 7)
- Proposed Realignment
- Monroe Street Option
- 2005 Project Alignment Alternative (Reaches A - D)
- Reach E, F and G Refinements





Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-6
Noise Contours for Project Construction - Central Reach (Southern Portion)



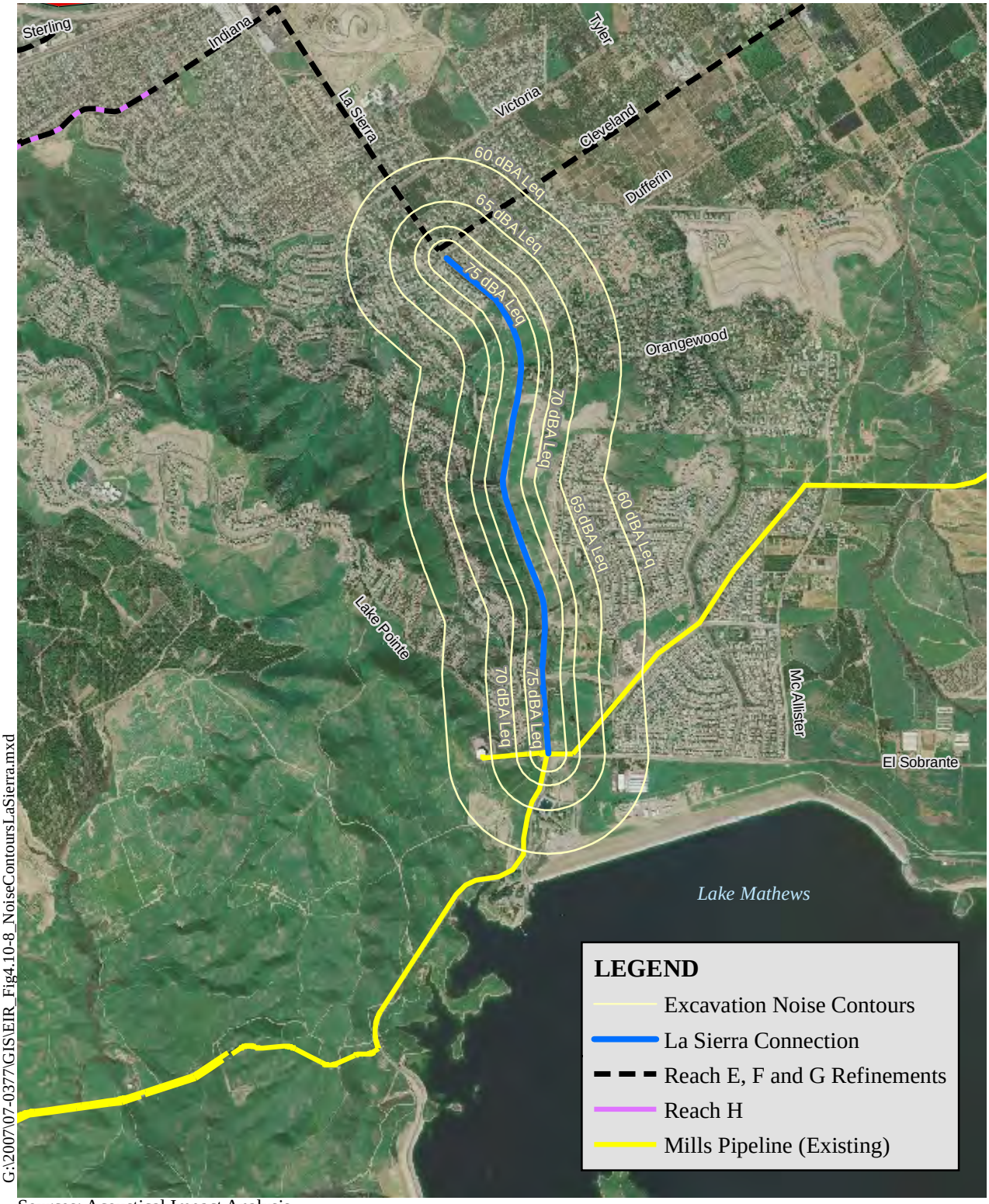
G:\2007\07-0377\GIS\EIR_Fig4.10-7_NoiseContoursCentralFeeder.mxd

Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-7
Noise Contours for Project Construction - Central Feeder Connection



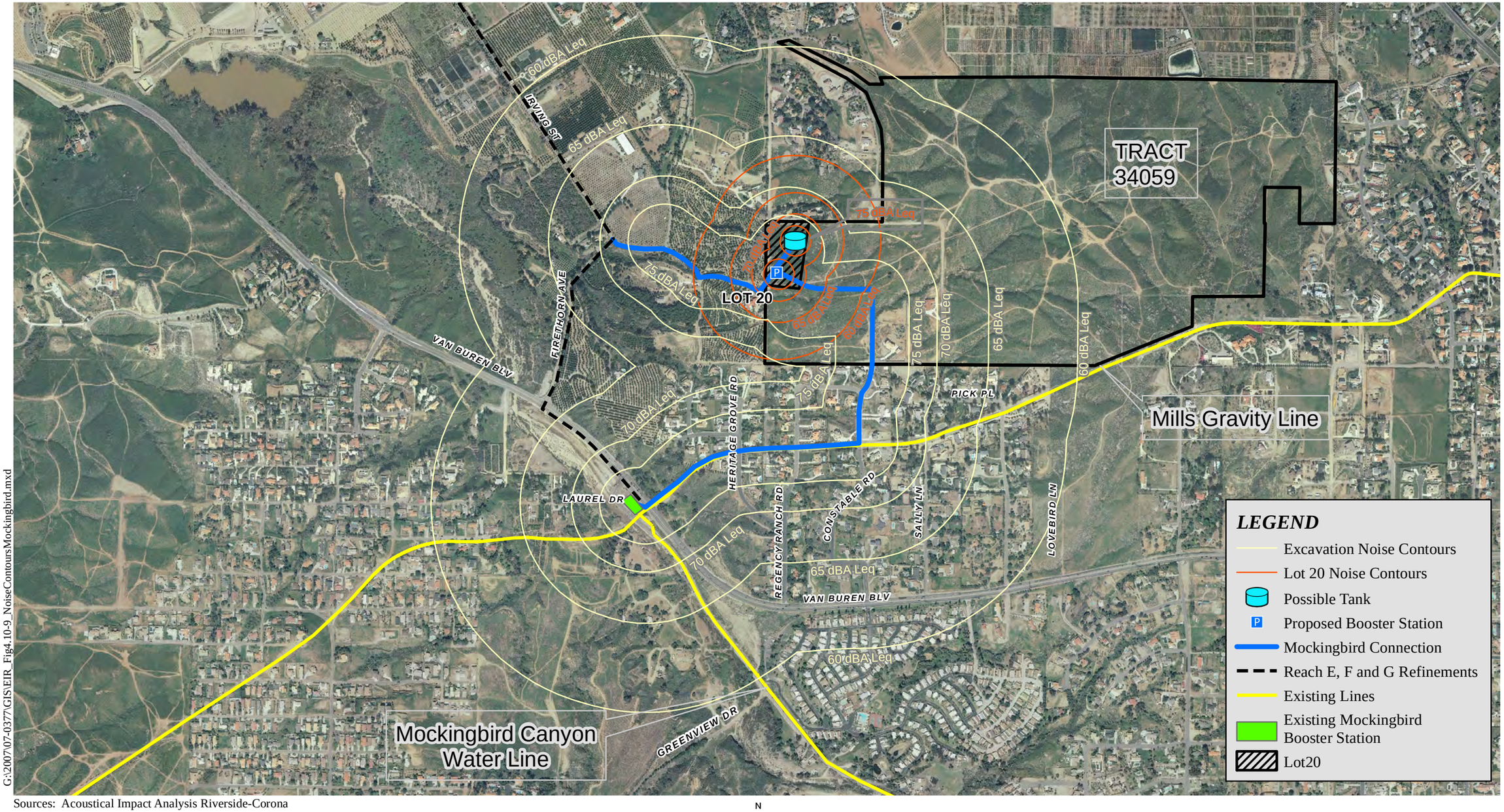
G:\2007\07-0377\GIS\EIR_Fig4.10-8_NoiseContoursLaSierra.mxd

Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-8
Noise Contours for Project Construction - La Sierra Pipeline



G:\2007\07-0377\GIS\EIR_Fig4.10-9_NoiseContoursMockingbird.mxd

Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-9
Noise Contours for Project Construction - Mockingbird Connection

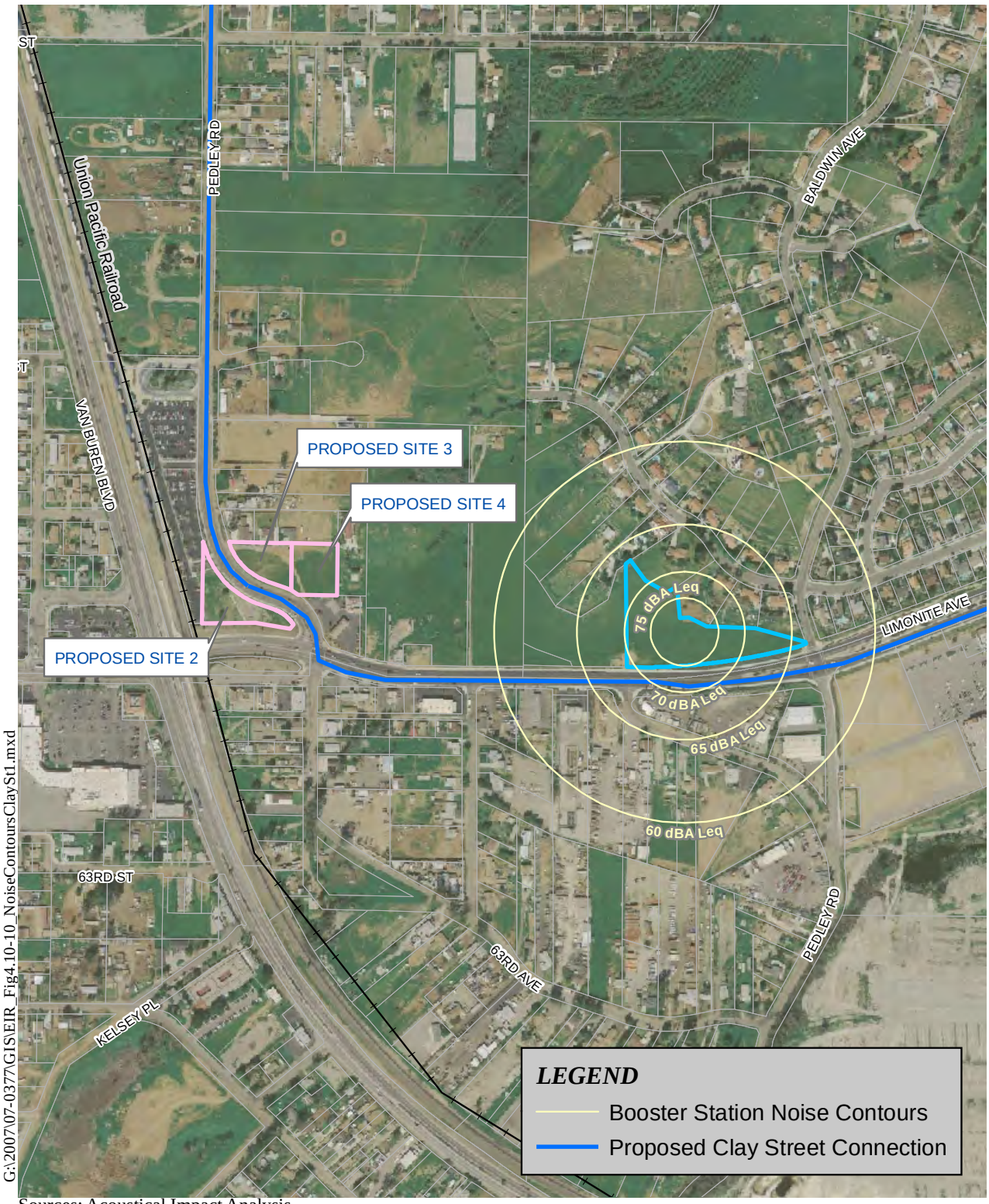
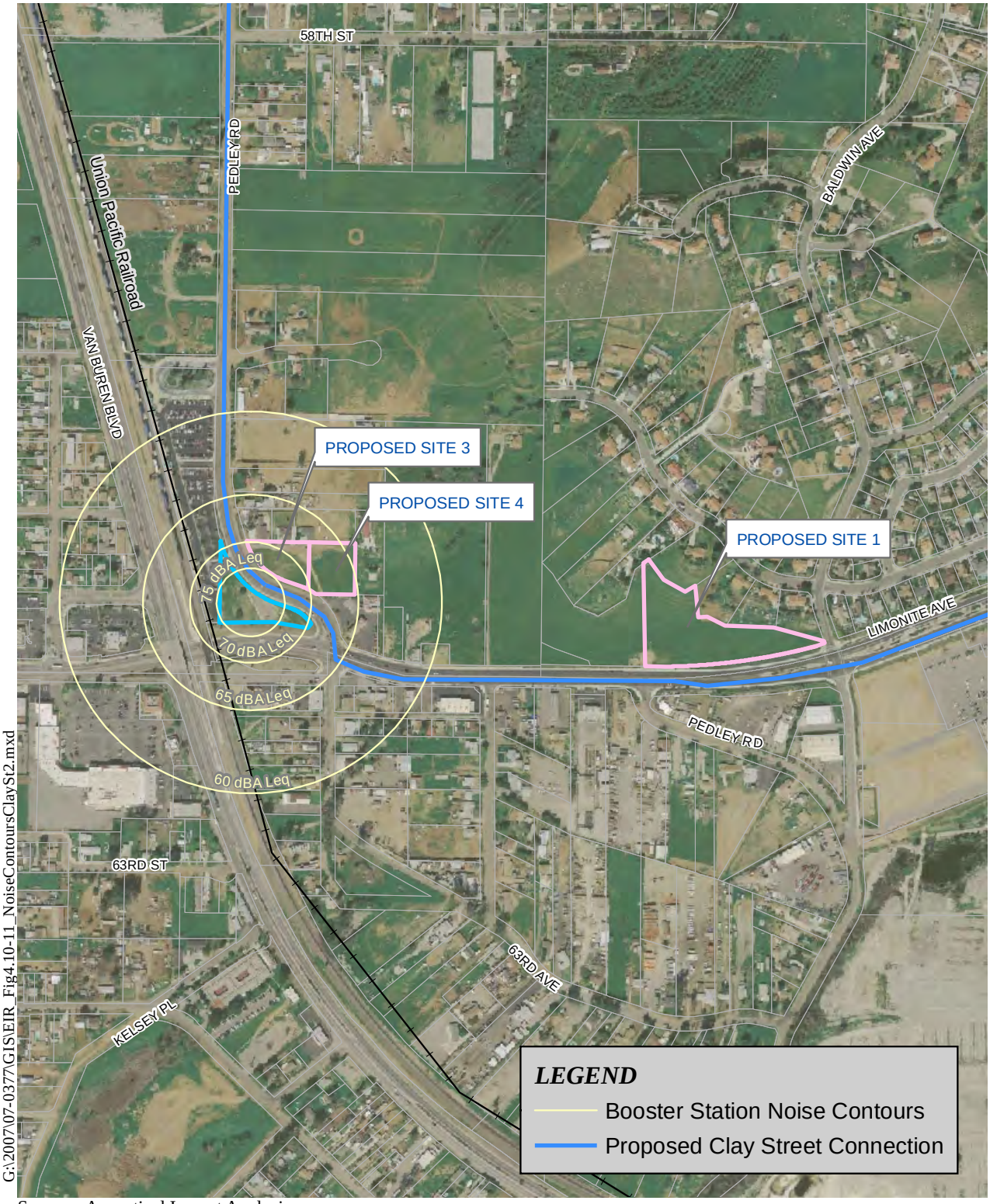


Figure 4.10-10
Noise Contours for Project Construction - Clay Street Connection, Booster Site 1



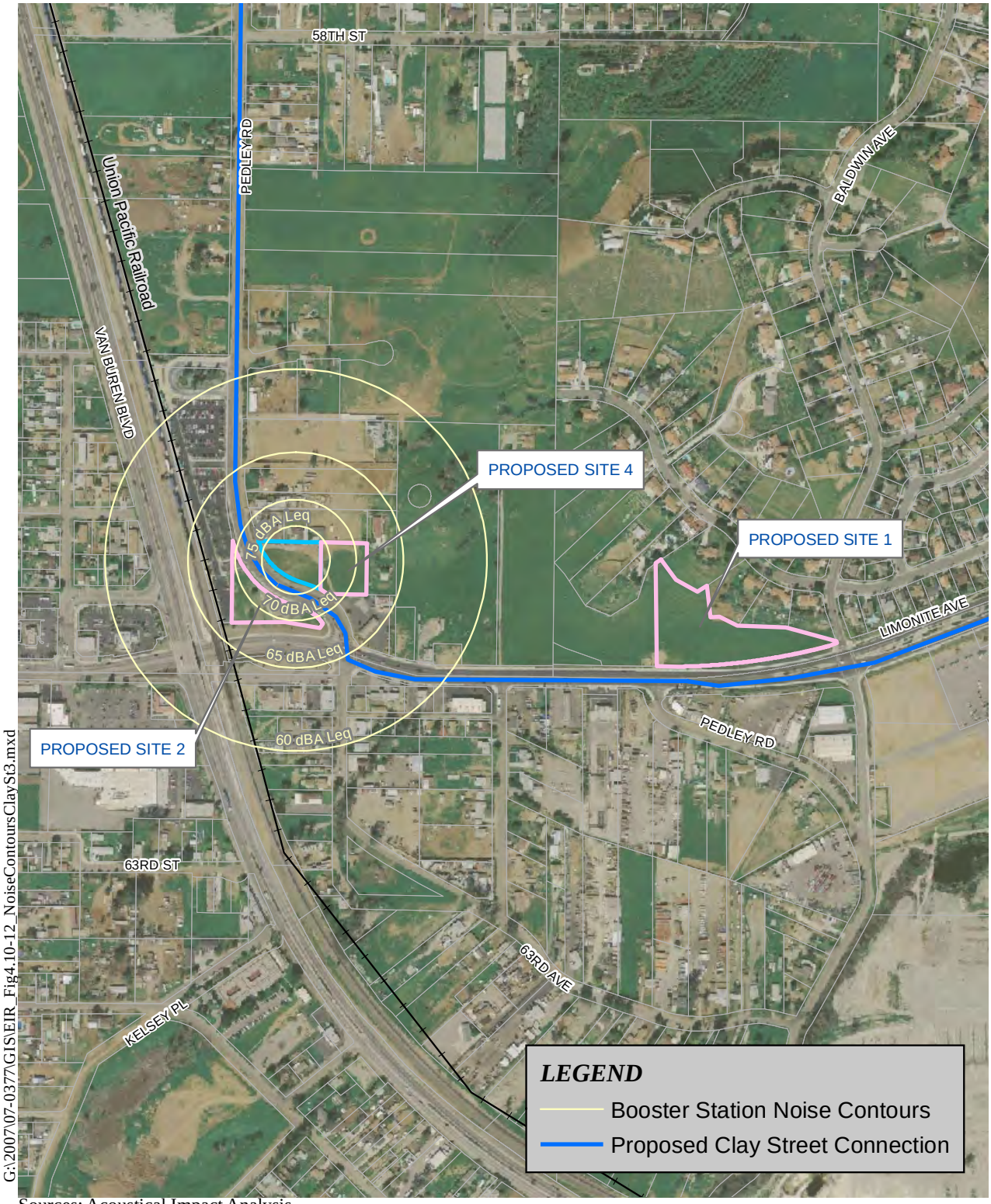
G:\2007\07-0377\GIS\EIR_Fig4.10-11_NoiseContoursClaySt2.mxd

Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-11
Noise Contours for Project Construction - Clay Street Connection, Booster Site 2



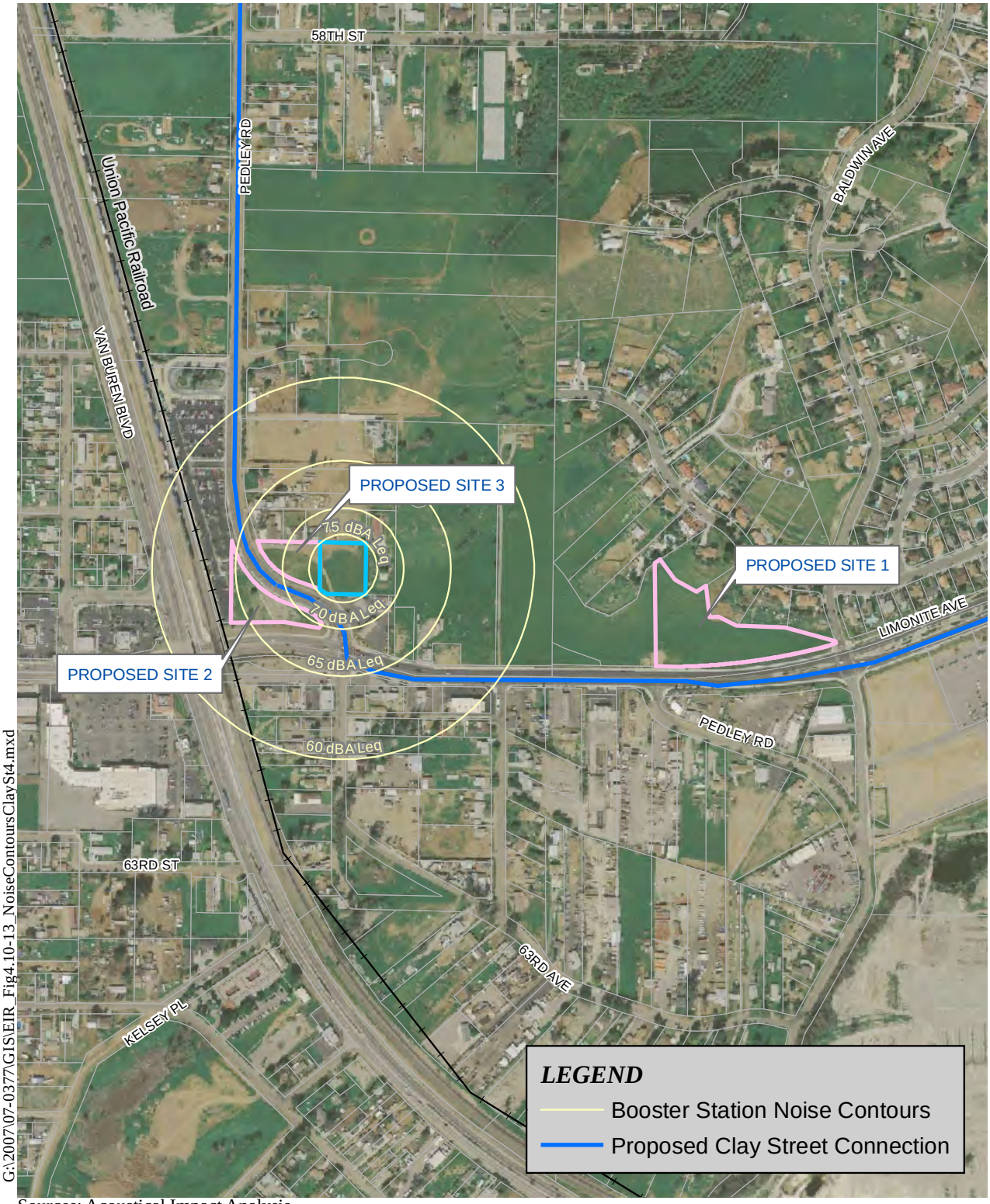
G:\2007\07-0377\GIS\EIR_Fig4.10-12_NoiseContoursClaySt3.mxd

Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-12
Noise Contours for Project Construction - Clay Street Connection, Booster Site 3



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Sources: Acoustical Impact Analysis Riverside-Corona Feeder Project, September 23, 2009; Digital Globe, 2008.

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Figure 4.10-13
Noise Contours for Project Construction - Clay Street Connection, Booster Site 4

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 increases to ambient noise levels. Temporary construction-related noise impacts will result in potential noise impacts to sensitive receptors. As previously discussed, construction noise levels will vary depending on construction phase, equipment type, duration of equipment use, and the distance from noise source to receptor, but will cease once construction of the proposed project is completed. **Table 4.10-E,** above, provides distances to various noise levels that are anticipated during the construction phase. It is important to note that the provided distances are indicative of a hypothetically flat-plane with no obstructions, thereby, overstating probable noise impacts as worst-case.

Figures 4.10-4 through **4.10-13** indicate the distances to which the construction-related noise levels could extend, under worst-case conditions. **Table 4.10-F**, above, is a partial list of sensitive receptors that are nearest to the project construction areas and have the greatest potential to be affected by construction-related noise.

Additionally, construction of the reservoir portion of the project's Mockingbird Connection component may require blasting. If required, blasting activities will be short in duration and will not be employed throughout the entire construction period. Such noise occurrences are so short in duration that they do not meet 10-minute Leq standards, but they can cause concern from residents in the vicinity that are unaware that construction activities are the cause of the associated noise. Therefore, **MM Noise 2** is intended to inform local residents of the blasting occurrences and when they are anticipated.

The proposed project does not include long-term operational noise; however, construction of the proposed project will be the source of temporary intermittent noise. Although construction activities will increase noise levels in the local vicinity of the project site (see **Figures 4.10-4** through **4.10-6**), construction-related noise will only occur on a temporary basis, and **MM Noise 1** through **MM Noise 3**, **and MM Trans 6** require mitigation that will reduce construction noise impacts through various means including adjusting construction times or day or year adjacent to sensitive receptors, providing notification of noise and construction, and requiring equipment to be muffled and well maintained. These mitigation measures in addition to regulatory compliance will reduce temporary or periodic increases in ambient noise levels in the project vicinity to **less than significant levels with mitigation**.

Proposed Mitigation Measures/Minimizations for All Action Alternatives

An Environmental Impact Report is required to describe feasible mitigation measures which could minimize significant adverse impacts (CEQA Guidelines, Section 15126.4). Although construction of the proposed project is exempt from local noise regulations, the following mitigation measures are provided for their ability to reduce the potentially significant adverse noise impacts from the proposed project's construction upon sensitive receptors.

*As described above, no mitigation was set forth in the 2005 Certified Program EIR. Mitigation measures **MM Noise 1** through **MM Noise 4** have been added by this SEIR/EIS to address potential impacts related to the construction of the Central Reach and the Northern Reach of the realigned pipeline and shall apply, as appropriate, to all reaches of project alternatives. Mitigation measures NOISE-1 through NOISE-3 are mitigation measures established in the Reaches E, F, and G 2008 Refinement EIR. The MM measures below provide a consolidated approach to mitigation for all the project alternatives and indicate which MMs came from the NOISE series.*

MM Noise 1 (*NOISE-1*)**:** Based on the Acoustical Impact Analysis which shows that the 65 dBA Leq is slightly less than one-quarter mile from the pipeline alignment, a minimum of 30 days prior to commencement of construction projects for all reaches and facilities, Western Municipal Water District shall identify all noise-sensitive receptors (e.g., residential dwellings, hotels, hospitals, nursing homes, schools and libraries) located within one-quarter mile of the active construction area. If construction is planned to occur within one-quarter mile of a sensitive receptor, the hours of construction shall be limited to those that would cause the least noise disruption to the sensitive uses and in consultation with the local jurisdiction. Mitigation could include such approaches as:

- Allowing nighttime construction in commercial/industrial areas or adjacent to schools which operate only during the day
- Prohibiting nighttime construction in residential areas
- Time of year construction, such as during a school holiday week

If more than one sensitive receptor that might warrant opposite approaches to hours of operation is affected by the same construction location, the hours of construction allowed by local jurisdictions regulations shall apply.

MM Noise 2: Although blasting does not exceed any noise standards because its duration is so short, as a courtesy to adjacent residents, Western Municipal Water District or its designee shall notify residences within one-quarter (1/4) of a mile of any areas that will require blasting, as to the timing and duration of any potential blasting activities associated with the project site. Notification shall take place between a minimum of five (5) and a maximum of ten (10) working days prior to anticipated blasting activities.

MM Noise 3 (*NOISE-2*): All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engines shall be fitted with well maintained mufflers in accordance with manufactures' recommendations. Maintenance and equipment records shall be made available by WMWD upon request if local jurisdictions receive

complaints. If records indicate that equipment does not meet the requirements of this measure, the equipment in question shall be services, retrofitted or replaced.

MM Noise 4: (*NOISE-3*): The buildings housing pump stations shall be insulated and contain sound attenuation materials to meet local noise standards.

(For ease of review, **MM Trans 6** is repeated here and in Section 4.11.)

MM Trans 6: WMWD shall give written notification to all landowners, tenants, business operators, and residents along the right-of-way of the construction schedule, and shall explain location and duration of the pipeline and construction activities within each street (e.g., which lane/s will be blocked, at what times of day, and on what dates). WMWD shall identify any potential obstructions to driveway access, and if necessary shall make alternative access provisions. The written notification shall include a toll-free telephone number for business coordination and shall encourage affected parties to discuss their concerns with WMWD prior to the start of construction so individual problems and solutions can be identified. Alternative access provisions shall include WMWD-provided signage and alternate parking as provided and approved by local agencies.

Determination of Significance under CEQA

As discussed previously, although the proposed project would create temporary noise that could potentially affect sensitive receptors, the project is exempt from regulatory compliance in all seven of the affected jurisdictions and because construction noise is temporary, it is considered **less than significant**. However, implementation of mitigation measures **MM Noise 1** through **MM Noise 3,** and **MM Trans 6** will help to minimize construction-related noise impacts upon sensitive receptors.

Impacts will come from construction noise only; ongoing operation of the proposed project will not result in adverse noise impacts. Although the design of the project proposes to use concrete block structures to house pump stations which would reduce potential noise impacts adequately, **MM Noise 4** requires that whatever the construction of such housings, that noise attenuation is incorporated to ensure less than significant operating impacts.

4.10.4 No Project/Action Alternative

Since no construction or operations of the project would occur, not potential noise impacts would result.

4.11 STORMWATER/WATER QUALITY

The focus of the following analysis is related to whether the proposed project has the potential to substantially degrade surface water quality. Potential groundwater quality impacts are discussed in Section 4.7, Groundwater Quality, of this SEIR/EIS.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- California Regional Water Quality Control Board, Santa Ana Region, *Nonpoint Source Program Strategy and Implementation Plan, 1998-2013 (PROSIP).* (Available at the California Water Quality Control Board or at http://www.waterboards.ca.gov/water_issues/programs/nps/planning_implementation.shtml, accessed on December 3, 2009.)
- California Regional Water Quality Control Board, Santa Ana Region, *Water Quality Control Plan Santa Ana River Basin*, 1995. (Available at http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml, accessed on August 11, 2009.) (Basin Plan)

4.11.1 Setting/Affected Environment

The RCF project site is located in Santa Ana River Watershed which is under the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). (**Figure 4.11-1, Santa Ana River Watershed).** The Santa Ana River is the major surface water body within the Santa Ana Watershed. It conveys water approximately 69 miles from the San Bernardino Mountains to the Pacific Ocean through San Bernardino, Riverside, and Orange Counties. The river drains between the Chino Hills and the rugged Santa Ana Mountains, through the narrow Santa Ana Canyon, southwest of the project site. It then emerges from the canyon and flows through the coastal plain to empty into the Pacific Ocean.

The SARWQCB has divided the Santa Ana River (SAR) geographically into six reaches, all of which vary in width, disturbance, and reliability of water source (Basin Plan). Reach 3, Reach 4, and Reach 5 are the portions of the SAR in proximity to the RCF project (**Figure 4.11-1**).

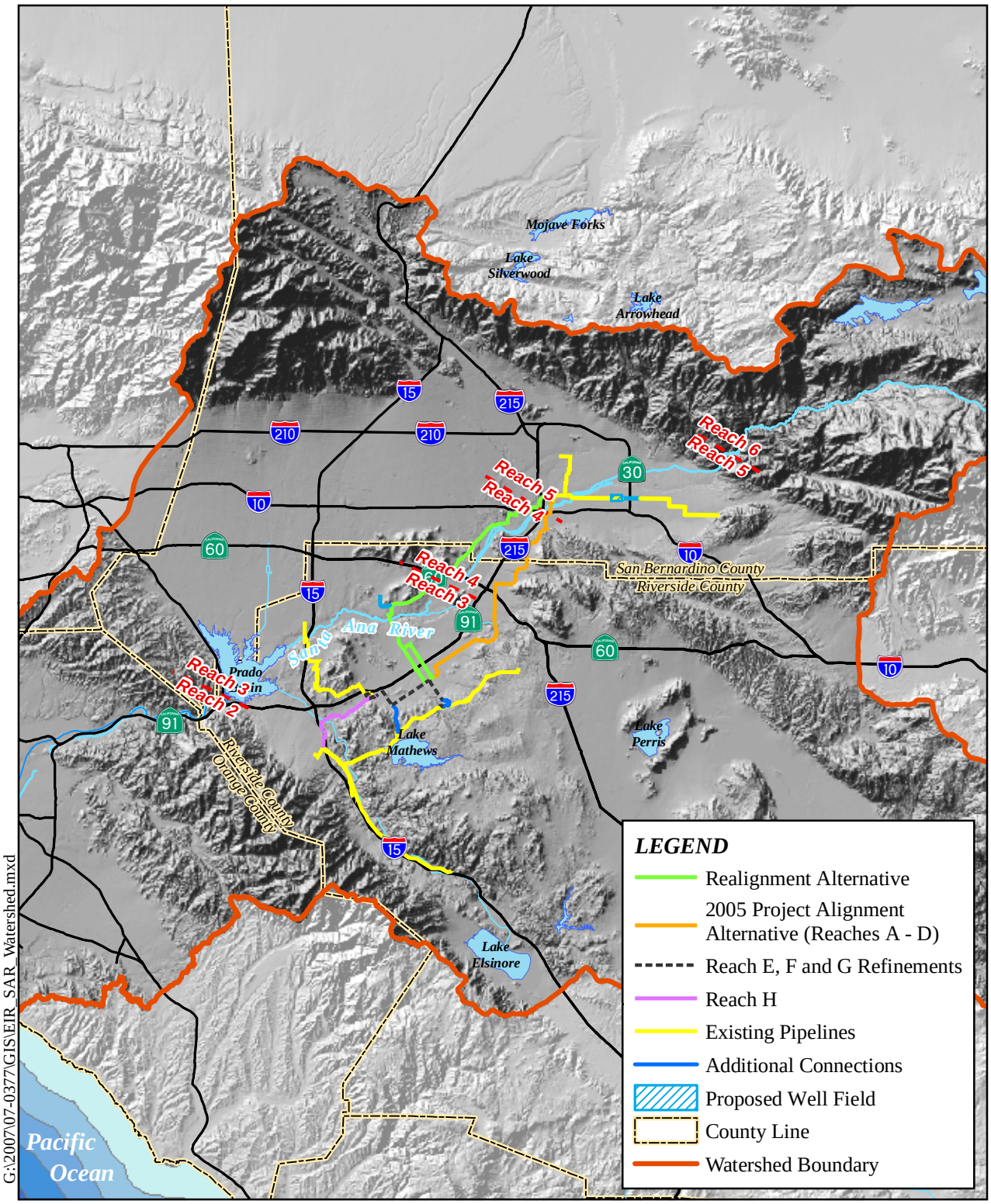
- **Reach 5** extends from Seven Oaks Dam to the San Jacinto Fault in the City of San Bernardino (Bunker Hill Dike), which marks the downstream edge of the Bunker Hill groundwater basin. Most of this reach tends to be dry, except as a result of storm flows, and the channel is largely operated as a flood control facility. East Warm Creek and West Warm Creek, both improved for flood control, connect to the Santa Ana River at the lower end of Reach 5. The extreme lower end of this reach includes rising water and intermittently, San Timoteo Creek flows.
- **Reach 4** includes the river from the Bunker Hill Dike down to Mission Boulevard Bridge in the City of Riverside. Until about 1985, rising water from upstream and wastewater discharges percolated and the lower part of the reach was dry. Flows are now perennial,

but may not remain so as new projects are built. Much of this reach is also operated as a flood control facility.

- **Reach 3** extends from the Mission Boulevard Bridge in Riverside to the Prado Dam. A number of tributaries feed into the Santa Ana River within Reach 3; several of these tributaries (Sunnyslope Channel, Tequesquite Arroyo, and Anza Park Drain) are supported by rising groundwater near the Mission Boulevard Bridge and the upstream limit of Reach 3, which is called the Riverside Narrows. The Riverside Narrows is an important breeding and nursery area for native fish such as the Santa Ana Sucker. From the Riverside Narrows to Prado Basin, the Santa Ana River is generally in a natural and unmodified state. Water levels are generally shallow, temperatures are warm, and the channel bottom is dominated by shifting sands, creating only limited habitat for aquatic organisms.

The project site is located east and northeast of the Prado Basin, which encompasses a large area of undisturbed, dense riparian wetland and is the largest wetland in Southern California. Upstream from the Prado Basin, there are approximately 465 acres of constructed wetlands. The Prado Basin was established to provide water storage and flood control for Orange County. Water that is high in nitrates, primarily from agricultural land uses in the Chino Basin, is diverted from the Santa Ana River, treated within the Prado Basin constructed wetlands in order to reduce nitrogen levels, and then discharged back into the Santa Ana River. The Prado Basin wetland area is rich in both plant and animal life, and serves as a habitat for rare, threatened, and endangered species.

Surface water quality may be impacted by both point source and non-point source (NPS) discharges of pollutants. Point source discharges are regulated through NPDES permitting. Non-point source pollution is now considered to be the leading cause of water quality impairments in the state, as well as the entire nation. Non-point source pollution is not as readily quantifiable as pollution that is derived from point sources, since it occurs through numerous diffuse sources. Rain water, snowmelt, or irrigation water can pick up and transport pollutants as it moves across land or paved surfaces, and these pollutants may ultimately be discharged into streams, lakes, oceans, and groundwater. Urban areas and agriculture are both considered to substantially contribute to non-point source pollution in surface waters. As rainfall or irrigation waters intercept pollutants in the landscape, these pollutants may be transported in contaminated runoff and enter streams, lakes, and oceans. Pollutants associated with urban areas include fertilizers, pesticides, fecal coliform, and sediments.



Sources: USGS DLG's, DEM's; Santa Ana Watershed Project Authority, 2001.

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Figure 4.11-1
Santa Ana River Watershed

4.11.2 Summary of 2005 Project Alignment Certified Program EIR for Riverside-Corona Feeder Project

Stormwater and water quality, other than as it related to groundwater quality, was not addressed in the original 2005 Certified Program EIR (2005 PEIR). Potential impacts associated with impacts to stormwater were addressed through project design and adherence to regulation, as discussed in the Final PEIR response to comments received from the San Bernardino County Department of Public Works and as summarized below.

As stated in the Initial Study for the 2005 Project Alignment PEIR, construction of the proposed project has the potential to result in the discharge of sediment and construction by-products. This will be minimized however, with the preparation and implementation of a National Pollutant Elimination System (NPDES) construction permit from the Regional Water Quality Control Board which requires that a storm water pollution prevention plan (SWPPP) be prepared prior to construction activities. The SWPPP will incorporate applicable Best Management Practices (BMPs).

The 2005 Project Alignment consists of a pump station, up to 20 well sites and a 30-mile underground pipe. Surfaces around and above the pipe, wells and pump station will be returned to their current condition so the project will have minimal or no post-construction affect on storm water runoff.

Because the 2005 Project Alignment PEIR was programmatic, no areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance, or other outdoor work/staging areas were analyzed as a part of the project.

As stated in Section III-3 of the 2005 Project Alignment PEIR, proposed pipeline installation will involve micro tunneling beneath the Santa Ana River and boring under other streams and drainage features. At the programmatic level of analysis, it was not known if construction would be performed within the definable bed, bank, or channel of the Santa Ana River. Even if this situation occurred, a Regional Water Quality Control Board Dewatering Permit would be required for wastewater discharge resulting from ground dewatering activities associated with tunneling. WMWD is expected to comply with all waste discharge permit requirements, therefore, it was determined that no significant impact related to waste discharge or beneficial uses of receiving waters is expected.

Infrastructure to be constructed as part of the project will not significantly alter any existing drainage patterns, flow velocity or volume of storm water runoff since the condition following installation of the pipeline will reflect conditions prior to pipeline construction. The portions of the proposed pipeline that will be constructed underneath the Santa Ana River and underneath several drainages will be required to comply with encroachment permit requirements of the County of San Bernardino Flood Control District and will be subject to Regional Water Quality Control Board discharge requirements. Therefore, impacts are considered less than significant.

4.11.3 Analysis of the Riverside-Corona Feeder Project Alternatives

The following discussion evaluates the potential stormwater and water quality impacts associated with the 2005 Project Alignment Alternative, the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative).

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Western Municipal Water District's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts related to stormwater and water quality may be considered potentially significant if the project would:

- violate any water quality standards or waste discharge requirements.
- otherwise substantially degrade water quality.

However for the purposes of the following analysis of potential stormwater and surface water quality impacts, these two thresholds have been combined into a single threshold more precisely related to the proposed project that states:

- *Impacts to surface water quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality.*

Related Regulations

Federal

Clean Water Act

The Clean Water Act (CWA) was designed to restore and maintain the chemical, physical, and biological integrity of the waters in the United States. The CWA also directs states to establish water quality standards for all waters of the United States and to review and update such standards on a triennial basis. Other provisions of the CWA related to basin planning include Section 208, which authorizes the preparation of waste treatment management plans, and Section 319, which mandates specific actions for the control of pollution from nonpoint sources. The EPA has delegated responsibility for implementation of portions of the CWA to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs), including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) program. The NPDES program is a set of permits designed to implement the CWA that applies to various activities that generate pollutants with potential to impact water quality.

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. Section 304(a) requires EPA to publish water quality criteria that accurately reflects the later scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which EPA has published water quality criteria and which reasonably could be expected to interfere with designated uses of a water body.

NPDES Permit Program

In 1972, the Federal Water Pollution Control Act (Clean Water Act) was amended to prohibit the discharge of pollutants to waters of the United States unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Clean Water Act focused on tracking point sources, primarily from waste water treatment facilities and industrial waste discharges, and required implementation of control measures to minimize pollutant discharges. The Clean Water Act was amended again in 1987, adding Section 402(p), to provide a framework for regulating municipal and industrial storm water discharges. In November 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish requirements for specific categories of industries, including construction projects that encompass greater than or equal to 5 acres of land. The Phase II Rule became final in December 1999, expanding regulated construction sites to those greater than or equal to 1 acre. The regulations require that storm water and non-storm water runoff associated with construction activity, which discharges either directly to surface waters or indirectly through municipal separate storm sewer systems (MS4s), must be regulated by NPDES permit.

Discharge of wash water resulting from cleaning and disinfection of the proposed pipelines and tanks may require a National Pollutant Discharge Elimination System (NPDES) permit from the California Regional Water Quality Control Board (RWQCB), Santa Ana Region. A state general NPDES permit for construction-period storm water discharges will also be required. Under current regulations, any construction site of one acre or more will also be subject to the Stormwater Pollution Prevention Plan requirements of the state general NPDES permit for construction-period storm water discharges. These permits require Best Management Practices that minimize the introduction of sediments and other pollutants into surface waters.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface waters and groundwaters) and directs the RWQCB to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative. The Water Quality Control Plan for the Santa Ana River Basin is designed to preserve and enhance

the quality of water resources in the Santa Ana Region for the benefit of present and future generations. The purpose of the plan is to designate beneficial uses of the region's surface waters and groundwaters, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives.

All projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of Waste Discharge Requirements (WDRs) from the RWQCBs. Land and groundwater related WDRs (i.e., non-NPDES WDRs) regulate discharges of process and wash-down wastewater and privately or publicly treated domestic wastewater. WDRs for discharges to surface waters also serve as NPDES permits.

National Pollution Discharge Elimination System (NPDES) Permits

In California, the SWRCB and its RWQCB's administer the NPDES permit program regulating storm water from construction activities for projects greater than one acre in size. This is known as the General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 99-08-DWQ, NPDES No. CAS000002. The main compliance requirement of the NPDES permits is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The purpose of a SWPPP is to identify potential on-site pollutants, identify and implement appropriate storm water pollution prevention measures to reduce or eliminate discharge of pollutants to surface water from storm water and non-storm water discharges. Storm water best management practices (BMPs) to be implemented during construction and grading, as well as post-construction BMPs, will be outlined in the SWPPP prepared for the proposed Project. Examples of BMPs include: detention basins for capture and containment of sediments, use of silt fencing, sandbags, or straw bales to control runoff and identification of emergency procedures in case of hazardous materials spills.

On September 2, 2009, the California State Water Resources Control Board voted to adopt major revisions to the statewide General Permit for Discharges of Stormwater Associated with Construction Activities (Construction General Permit). The new permit will take effect July 1, 2010 and applies to projects that disturb one or more acres, or projects that disturb less than one acre but are part of a larger common plan of development that disturbs more than one acre in total (e.g., large linear utility projects). The revised permit requires that projects implement a SWPPP that contains specific BMPs and establishes numeric effluent limitations to meet water quality and technology-based standards. It also provides greater clarity so that the public can determine whether permittees are in compliance.

Regional

Santa Ana River Basin Plan

The Basin Plan sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the Basin Plan is designed to accomplish the following:

- Designate beneficial uses for surface and groundwaters;
- Set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy;
- Describe implementation programs to protect the beneficial uses of all waters within the region; and
- Describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

The Basin Plan incorporates by reference all applicable SWRCB and RWQCB plans and policies.

Design Considerations/Avoidance

Other than adherence to required regulations and construction in conformance with NPDES requirements, the RCF project does not propose any unique design considerations that would reduce potential water quality or drainage impacts.

Potential Significant Impacts/Environmental Consequences

Threshold: *Impacts to surface water quality may be considered significant if construction or operation of the proposed project would violate water quality standards or otherwise substantially degrade water quality.*

The SARWQCB sets water quality standards for all ground and surface waters within its region. Water quality standards are defined under the Clean Water Act to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses (water quality objectives). Water quality standards for all surface waters overseen by the SARWQCB are documented in the SARWQCB Basin Plan. Beneficial uses consist of all the various ways that water can be used for the benefit of people and/or wildlife. Nineteen beneficial uses are recognized within the Santa Ana Region. Ten beneficial uses have been designated for surface water bodies in the vicinity of the project site **(Table 4.11-A, Beneficial Uses for Surface Water Bodies in Proximity to the Proposed Project).** All listed water quality objectives governing water quality in inland surface waters were evaluated for potential impacts from development of the proposed project; however, only those numeric and narrative water quality objectives that are most likely to be relevant to the proposed project are listed in **Table 4.11-B, Numeric Water Quality Objectives for Surface Water Bodies in Proximity to the Proposed Project,** respectively. Water quality standards are attained when designated beneficial uses are achieved and water quality objectives are being met. The

regulatory program of the SARWQCB is designed to minimize and control discharges to surface and groundwater within the region, largely through permitting, such that water quality standards are effectively attained.

Table 4.11-A, Beneficial Uses for Surface Water Bodies in Proximity to the Proposed Project

Water Body	Beneficial Uses
Santa Ana River Reach 3	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN
Santa Ana River Reach 4	GWR, REC1, REC2, WARM, WILD, SPWN
Santa Ana River Reach 5	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE
Prado Basin Management Zone	REC1, REC2, WARM, WILD, RARE

Table 4.11-A Definitions	
AGR	Waters are used for farming, horticulture or ranching. Uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
GWR	Groundwater recharge waters, used for natural or artificial recharge of groundwater for purposes that may include future extraction, maintaining water quality, or halting saltwater intrusion in freshwater aquifers.
MUN	Waters used for community, military, municipal or individual water supply systems. Uses may also include drinking water supply.
PROC	Waters for industrial process supply. Uses are for industrial activities that are dependent upon water quality. Uses may include process water supply and all uses of water related to product manufacture or food preparation.
REC1	Water contact recreation waters, used for recreational activities involving body contact with water where ingestion of water is reasonably possible. Uses may include swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.
REC2	Non-contact water recreation waters, used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include picnicking, sunbathing, hiking, beachcombing, camping, boating, sightseeing, and aesthetic enjoyment in conjunction of the above activities.
WARM	Warm freshwater habitat waters support warm water ecosystems that may include preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.
WILD	Wildlife habitat waters support wildlife habitats that may include the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.
RARE	Rare, threatened or endangered species waters support habitats necessary for the survival and successful maintenance of plant or animal species designated under the state or federal law as rare, threatened or endangered.
SPWN	Spawning, reproduction and development waters support high quality aquatic habitats necessary for reproduction and early development of fish and wildlife.

Source: SARWQCB Basin Plan, Table 3-1

Table 4.11-B, Numeric Water Quality Objectives for Surface Water Bodies in Proximity to the Proposed Project

Water Body	Water Quality Objectives (mg/L)					
	TDS (Total Dissolved Solids)	**Hardness** (as $CaCO_3$)	**Na** (Sodium)	**Cl** (Chloride)	**TIN** (Total Inorganic Nitrogen)	**SO_4** (Sulfate)
Santa Ana River Reach 3	700	350	110	140	10	150
Santa Ana River Reach 4	550	---	---	---	10	---
Santa Ana River Reach 5	300	190	30	20	5	60
Prado Basin Management Zone	*	*	*	*	*	*

Source: SARWQCB Basin Plan, Table 4-1

* Numeric water quality objectives have not been established; therefore, narrative objectives apply. However, regarding the Prado Flood Control Basin, TDS and TIN objectives established for SAR Reach 3 are applicable.

The proposed water transmission pipelines constructed as part of the project will be constructed underground primarily within existing and future road rights-of-way. Wells may be constructed as part of these alternatives. Additionally, the Realignment Alternative with Additional Connections (Preferred Alternative) includes the construction of a water storage reservoir and a booster station as part of the Mockingbird Connection and booster stations as part of Reach G (Refinement) and the Clay Street Connection. These alternatives will not involve discharge of water which would violate long-term implementation of water quality standards or waste discharge requirements. Construction of the proposed facilities may result in the discharge of sediment and construction by-products.

In order to reduce the discharge of pollutants into receiving waters during construction of the proposed development, WMWD will be required to prepare a site-specific Storm Water Pollution Prevention Plan (SWPPP) for each construction phase in accordance with the State Water Resources Control Board's (SWRCB) General Permit for Construction Activities. The General Permit requires the development and implementation of a site-specific SWPPP to identify an effective combination of erosion control and sediment control best management practices (BMPs) to minimize or eliminate the discharge of pollutants into receiving waters. In addition, BMPs for managing sources of non-storm water discharges and waste are required to be identified in the SWPPP. Examples of construction BMPs include silt fencing, gravel bag berms, fiber rolls, and street sweeping. In addition, the SWPPP is required to identify post-construction BMPs, which are permanent features which will be maintained in perpetuity.

Installation of the pipelines may result in the discharge of water resulting from dewatering activities associated jack and bore construction techniques and with pipeline flushing. Should these flows occur, discharges will be performed in accordance with the California Regional Water Quality Control Board, Santa Ana Region Order R8-2009-0003 ~~No. 03-61,~~ which establishes waste discharge requirements for discharges to surface waters that pose an insignificant (De Minimus) threat to water quality, and the National Pollutant Discharge Elimination Systems (NPDES) Permit. **MM Water Qual 1a – 1d** requires best management practices (BMPs) which reduce such potential impacts to less than significant.

For proposed pipelines that cross the Santa Ana River, temporary alteration of drainage patterns may occur. Construction will most likely use trenchless technologies, the primary of which is jack and bore, or an alternative method of horizontal directional drilling. Compliance regulatory requirements and implementation of the NPDES permit will reduce any potential impacts to construction-related discharge. If dewatering activities are necessary during future construction due to locally high groundwater conditions at the time of construction, mitigation measure **MM Water Qual 1e** requires WMWD to obtain California State Water Resources Control Board (SWRCB) dewatering permits for dewatering activities associated with all boring and micro-tunneling and requires implementation of mitigation measures, will reduce potential impacts to water quality to less than significant levels.

Through compliance with the General Construction NPDES permit and implementation of mitigation measure **MM Water Qual 1a – 1e**, water quality standards and waste discharge requirements will not be violated, and water quality will not otherwise be degraded, by the proposed project; therefore, impacts are considered **less than significant.**

Proposed Mitigation Measures/Minimization

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 or reduce the potential significant adverse impacts related to stormwater impacts to below the level of significance.

*Mitigation measure **MM Water Qual 1** has been added by this SEIR/EIS to address potential impacts related to the construction of project alternatives. Mitigation measure HYD-1 is a mitigation measure established in the Reaches E, F, and G 2008 Refinement EIR which serves as the basis for the mitigation described below.*

MM Water Qual 1 (HYD-1)**:** WMWD shall require contractors to implement a program of best management practices (BMPs) and best available technologies to reduce potential impacts to water quality that may result from construction activities. To reduce or eliminate construction-related water quality impacts before the onset of construction activities, the construction agent(s) shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General construction permit. Construction activities shall comply with the conditions of this permit that include preparation of a stormwater pollution prevention plan (SWPPP), implementation of BMPs, and monitoring to insure impacts to water quality are minimized. As part of this process, multiple BMPs shall be implemented to provide effective erosion and sediment control. These BMPs shall be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure shall include, but are not limited to, the following:

a. Temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other groundcover would be employed for disturbed areas to avoid water erosion. Stockpiled dirt could be covered, misted

continuously, protected with three-sided temporary wind breaks or other means to avoid wind erosion.

b. Storm drain inlets on the site and in downstream offsite areas shall be protected from sediment with the use of BMP's acceptable to the construction agent(s), local jurisdictions and the California Regional Water Quality Control Board, Santa Ana Region.

c. Dirt and debris shall be swept from paved streets in the construction zone on a regular basis, particularly before predicted rainfall events.

d. No disturbed surfaces shall be left without wind and water erosion control measures in place between October 15 and April 15, and when winds exceed 25 MPH. The construction agent(s) shall file a Notice of Intent with the Regional Board and require the preparation of a SWPPP prior to commencement of construction. The construction agent(s) shall routinely inspect the construction site to verify that the BMP's specified in the SWPPP are properly installed and maintained. The construction agent shall immediately notify the contractor if there were a noncompliance issue and require immediate compliance.

e. Controls on construction site dewatering shall be implemented. If possible, water generated as part of construction dewatering shall be discharged onsite such that there would be no discharge to surface waters. If discharge to surface waters were unavoidable, the construction agent shall obtain coverage under the NPDES General Dewatering Permit prior to commencement of construction. The provisions of this permit are sufficiently protective of water quality to ensure that impacts to surface waters would remain below significance thresholds. During dewatering activities, all permit conditions shall be followed. The construction agent(s) shall routinely inspect the construction site to verify that the BMP's specified in the SWPPP are properly installed and maintained. The construction agent shall immediately notify the contractor if there were a noncompliance issue and require immediate compliance.

Determination of Significance under CEQA

Construction of the RCF facilities could release substantial discharge during construction. If unmitigated, impacts to water quality associated with RCF project construction would be potentially significant**.** However, through compliance with the General Construction NPDES permit and implementation of mitigation measure **MM Water Qual 1a – 1e**, water quality standards and waste discharge requirements will not be violated, and water quality will not otherwise be degraded, by the proposed project and therefore, impacts are considered **less than significant.**

4.11.4 No Project/Action Alternative

Under the No Project Action/Alternative, no physical changes to the physical environment would occur. The proposed facilities would not be constructed and existing WMWD facilities and sources of water would continue to be operated as under current conditions. Potential effects related to stormwater and surface water quality would be avoided.

4.12 TRANSPORTATION AND TRAFFIC

Potential impacts related to an increase in traffic in which is substantial in relation to the existing traffic load and capacity of the street system; which exceeds a level of service standard; results in a change in air traffic patterns; increases hazards due to design features; results in inadequate emergency access or inadequate parking capacity; and potential conflicts with adopted policies, plans or programs supporting alternative transportation were all found to be less than significant in the Initial Study/NOP prepared for this project in 2008 (Appendix A). In response to the Initial Study/NOP, comment letters were received from the City of Riverside Planning Department, City of Colton Engineering Department, City of Colton Planning Department, and the San Bernardino Development Services Department raising concerns over the issue of potentially significant impacts related to congestion that may occur due to project construction activities. In their responses to the Initial Study/NOP the Riverside Transit Agency requested coordination regarding impacts to existing bus routes and the Jurupa Area Recreation and Park District identified potential impacts to trails. The following analysis discusses construction-related traffic congestion and the concerns raised in the responses to the Initial Study/NOP. A summary of the Transportation and Traffic section of the 2005 PEIR (2005 PEIR) for the Riverside-Corona Feeder Project (2005 Project Alignment) is included in the following discussion.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Albert A Webb Associates, *Traffic Impact Study Report, Riverside-Corona Feeder Realignment Project,* May 1, 2009. (Appendix I)
- Albert A Webb Associates, *Addendum to Traffic Impact Study Report, Riverside-Corona Feeder Realignment Project*, October 2009. (Appendix I)
- City of Colton, *Final Preliminary General Plan for the City of Colton*, May 5, 1987. (Available at www.ci.colton.ca.us/CD_Plan.html, accessed on December 30, 2008.)
- City of Corona Community Development Department, *City of Corona General Plan,* March 17, 2004. (Available at www.discovercorona.org/?section=City%20Departments&page=Community%20Development, accessed on December 28, 2006.)
- City of Rialto Development Services Department, *City of Rialto General Plan,* March 31, 1992. (Available at the City of Rialto Development Services Department – Planning Division.)
- City of Riverside Planning Department, *General Plan 2025,* November, 2007. (Available at www.riversideca.gov/planning/cityplans.asp, accessed on December 28, 2008.)
- City of San Bernardino Development Services Department, Division of Planning, *San Bernardino General Plan*, November 1, 2005. (Available at www.ci.san-bernardino.ca.us/depts/devserv/planning/default.asp, accessed on December 28, 2008.)

- County of Riverside, *Riverside County Integrated Project General Plan, County of Riverside*, Adopted October 7, 2003. (Available at www.rctlma.org/genplan/default.aspx, accessed on December 28, 2008.)
- County of Riverside, *Jurupa Area Land Use Plan*, October 2003. (Available at www.rctlma.org/genplan/default.aspx, accessed on December 28, 2008.)
- County of Riverside, *Temescal Canyon Area Land Use Plan*, October 2003. (Available at www.rctlma.org/genplan/default.aspx, accessed on December 28, 2008.)
- County of Riverside, *Lake Mathews/Woodcrest Land Use Plan*, October 2003. (Available at www.rctlma.org/genplan/default.aspx, accessed on December 28, 2008.)
- County of San Bernardino Land Use Services Department, *San Bernardino 2007 General Plan*, March 13, 2007. (Available at www.sbcounty.gov/landuseservices/general_plan/Default.asp, accessed on December 29, 2008.)

4.12.1 Setting/Affected Environment

The project alternatives are located within the boundaries of the cities of Colton, Corona, Grand Terrace, Redlands, Rialto, Riverside, and San Bernardino, and unincorporated areas of the counties of Riverside and San Bernardino, as shown on **Figure 3.0-3, Proposed Project with Previous Alignment Locations**. The project proposes to place large (up to 72-inches) pipelines in various streets throughout these jurisdictions. Traffic levels and existing congestion varies from street to street.

The 2005 Project Alignment Alternative Includes Reaches A though H, with Reach A starting in San Bernardino and Reach H ending in Corona. The majority of this alternative is located within the City of Riverside (Reaches B through H).

The proposed Riverside-Corona Feeder Realignment Alternative separated into two portions referred to as the Northern Reach and the Central Reach, plus generally Reaches E through H of the 2005 Project Alignment. The Northern Reach will span from the intersection of Waterman Avenue and Orange Show Road in the City of San Bernardino to the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County. The Central Reach will span from the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County to connect to the approved Riverside-Corona Feeder alignment near the intersection of Jackson Street and Cleveland Street in the City of Riverside. The project also proposes an optional alignment on a portion of the Central Reach. The optional alignment would change the proposed realignment between the intersection of Jackson Street and Colorado Avenue, in the City of Riverside, and the intersection of Cleveland Avenue and Irving Street, in the City of Riverside.

The Realignment Alternative with Additional Connections (Preferred Alternative) includes all the facilities of the Realignment Alternative plus four additional facilities that include: the Central Feeder Connection, the Clay Street Connection, the Mockingbird Connection and the La Sierra Pipeline Connection.

It is intended that the first phase of project construction will include Reaches E, F and G, and the Mockingbird Connection. Reaches E, F and G are illustrated in greater detail on **Figure 4.12-1, Realignment Project – Reaches E, F and G**. The Central Reach alignment is illustrated in greater detail on **Figure 4.12-2, Realignment Project – Central Reach** and the additional facilities' alignments (including the Mockingbird Connection) are shown on **Figure 4.12-3, Realignment Alternative – Additional Connections.**

The proposed project's pipeline will be used to deliver water from the Riverside and San Bernardino County groundwater basins to communities throughout western Riverside County during drought and emergency periods and when water is otherwise unavailable. The completed project is to be located primarily underground within existing road rights-of-way.

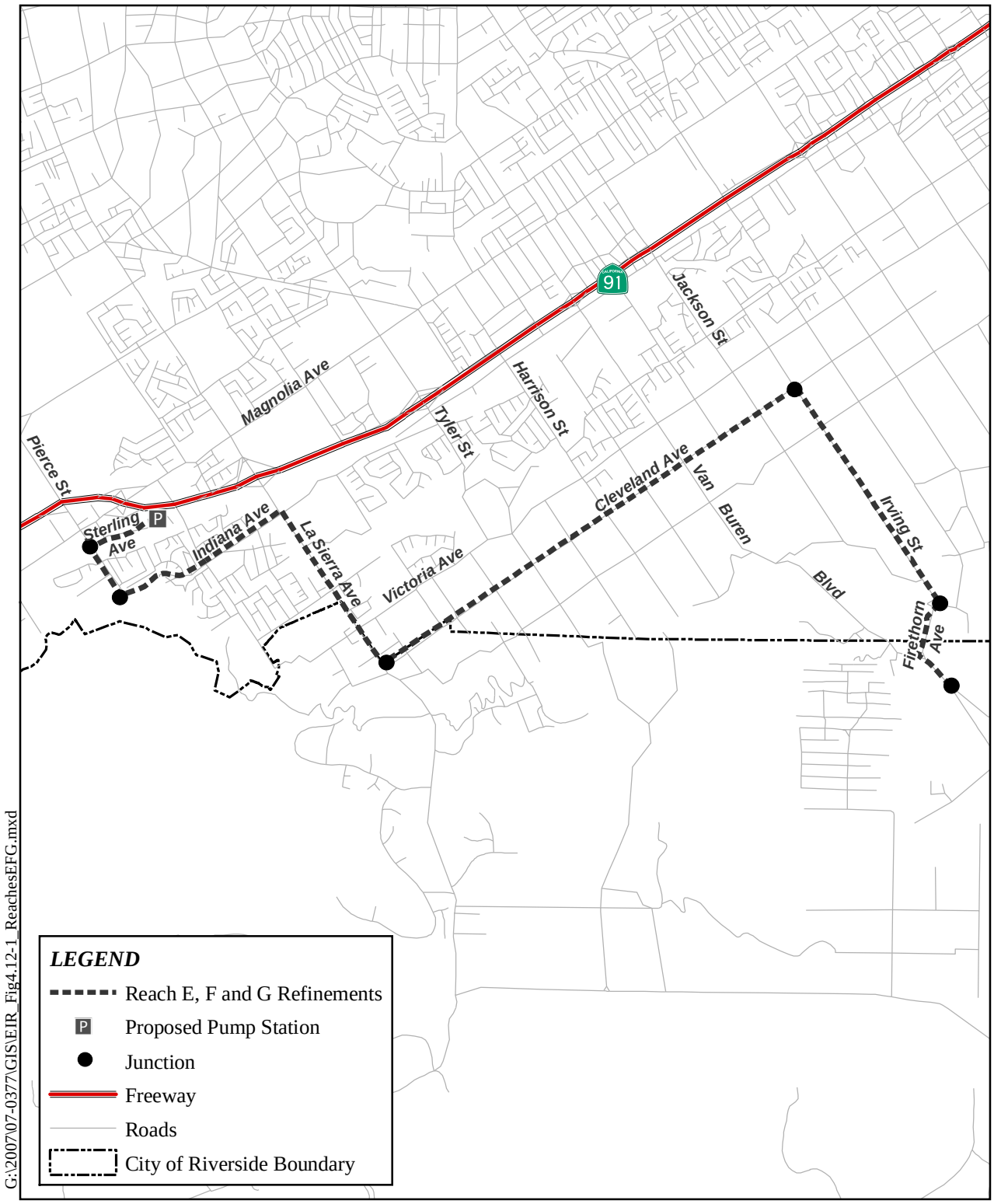


Figure 4.12-1
Realignment Project
- Reaches E, F and G

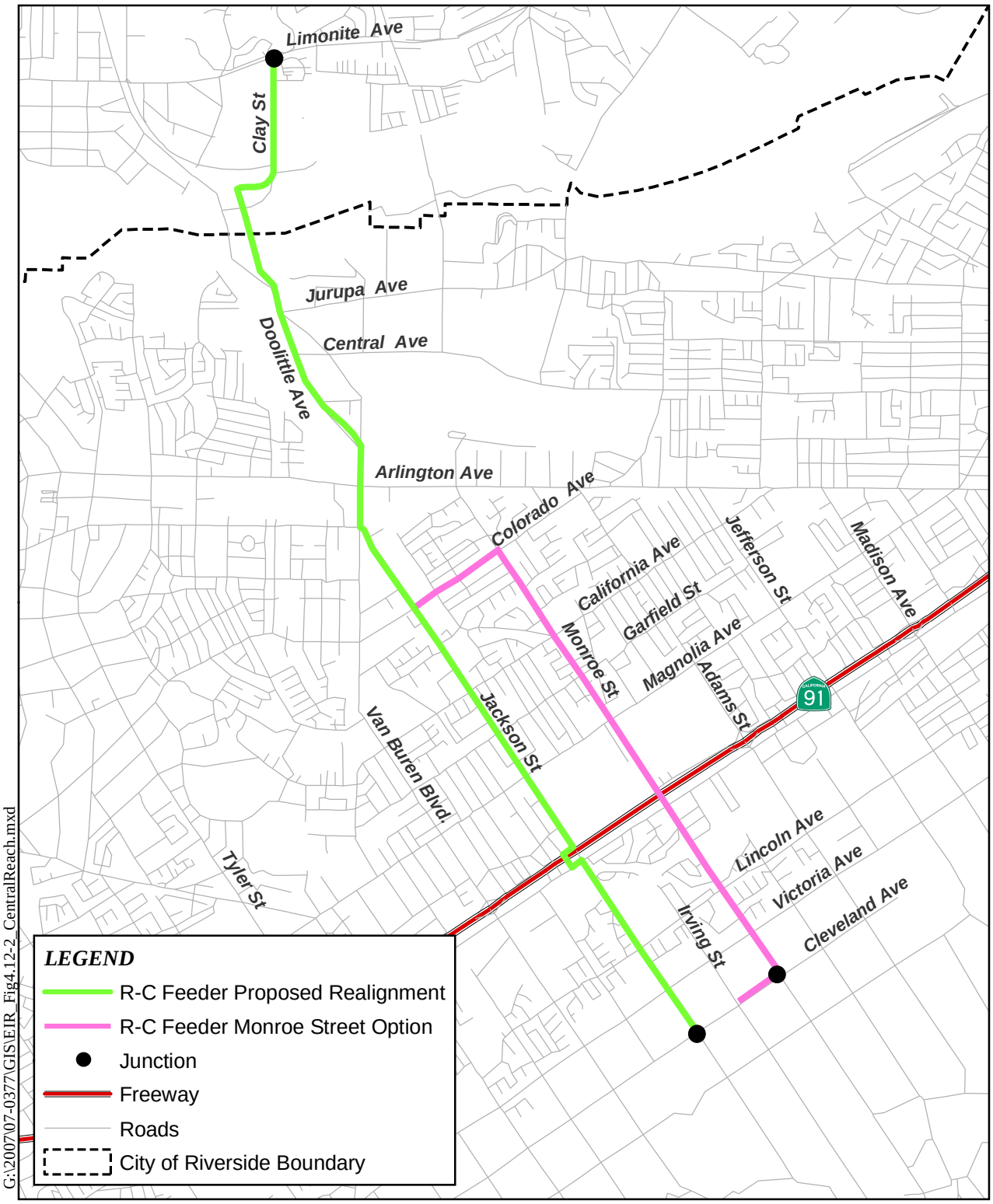


Figure 4.12-2
Realignment Project
- Central Reach

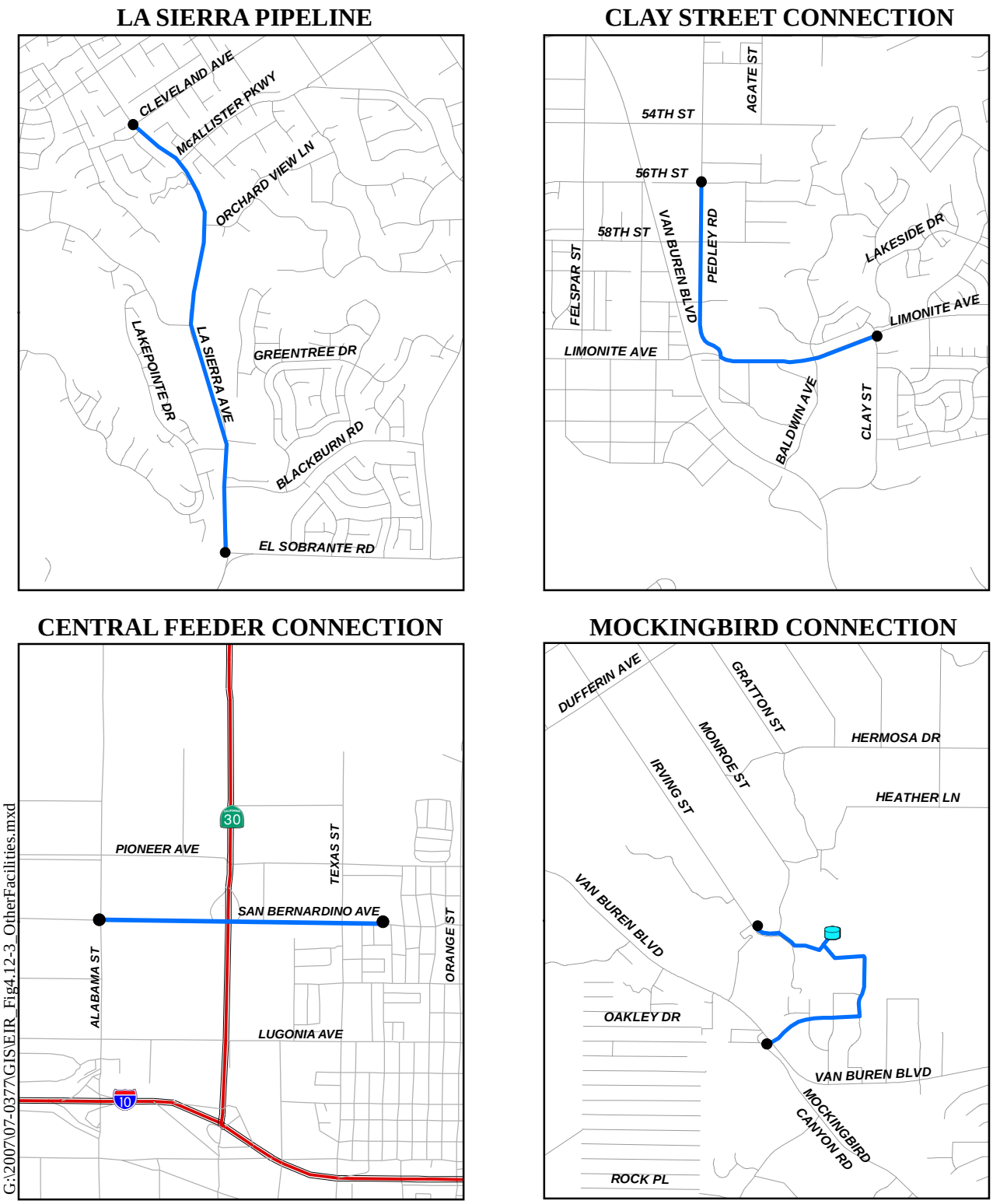


Figure 4.12-3
Realignment Project
- Additional Connections

The pipeline will be manufactured in 40-foot lengths and a typical work day will allow for the installation of approximately 120 feet of pipeline. The construction involved with the installation of the pipelines includes both boring/tunneling and shored open trench construction. Where open trench construction is planned, the shored open trench method is preferred for conditions with minimal allowable construction width and restricted right-of-way. The required construction width for an open trench with shored walls is 30 to 35 feet, to allow for heavy vehicle operation. **Figure 4.12-4, Typical Open Trench Detail** shows the typical detail for this type of construction. An available option to the shored open trench method of construction is open trench construction with flared sidewalls. This method requires greater construction width and is not typical for roadways with minimal right-of-way widths.

A traffic study was prepared for the Central Reach (Traffic Study), which is anticipated as the second phase of construction related to the proposed realignment. The Traffic Study looked at the Central Reach because only Phases 1 and 2 are being analyzed at a project specific level. Phase 1 of the project includes Reaches E, F and G which were already analyzed at a project specific level in the prior EIR for those segments. The Northern Reach is anticipated to be the fourth phase of the project and was not analyzed in the traffic study because the timing of construction is unknown at this time, but will be analyzed in this section at a programmatic level. (See Section 3.8 for a description of project phasing).

The objectives of the Traffic Study for the Central Reach were to:

- Determine existing traffic conditions in the vicinity of the proposed project.
- Determine the short-term impacts at the study area intersections during the construction of the proposed project.
- Determine if the levels of service (LOS) required by the City of Riverside General Plan and the Riverside County General Plan will be maintained at all affected intersections.

An addendum to the traffic study (Traffic Study Addendum) was prepared in order to evaluate additional project components that are anticipated in earlier phases of the project and that were not included in the Traffic Study's analysis. The Traffic Study Addendum included the project's La Sierra Pipeline Connection, Clay Street Connection, Central Feeder Connection, and Mockingbird Connection components. The objectives of the Traffic Study Addendum were to:

- determine existing traffic conditions in the vicinity of the alignment;
- determine the short-term impacts at the study area intersections due to the installation of the Riverside-Corona Feeder pipelines;
- determine if the LOS required by the Riverside County General Plan and City of Redlands/County of San Bernardino General Plan will be maintained at all affected intersections.

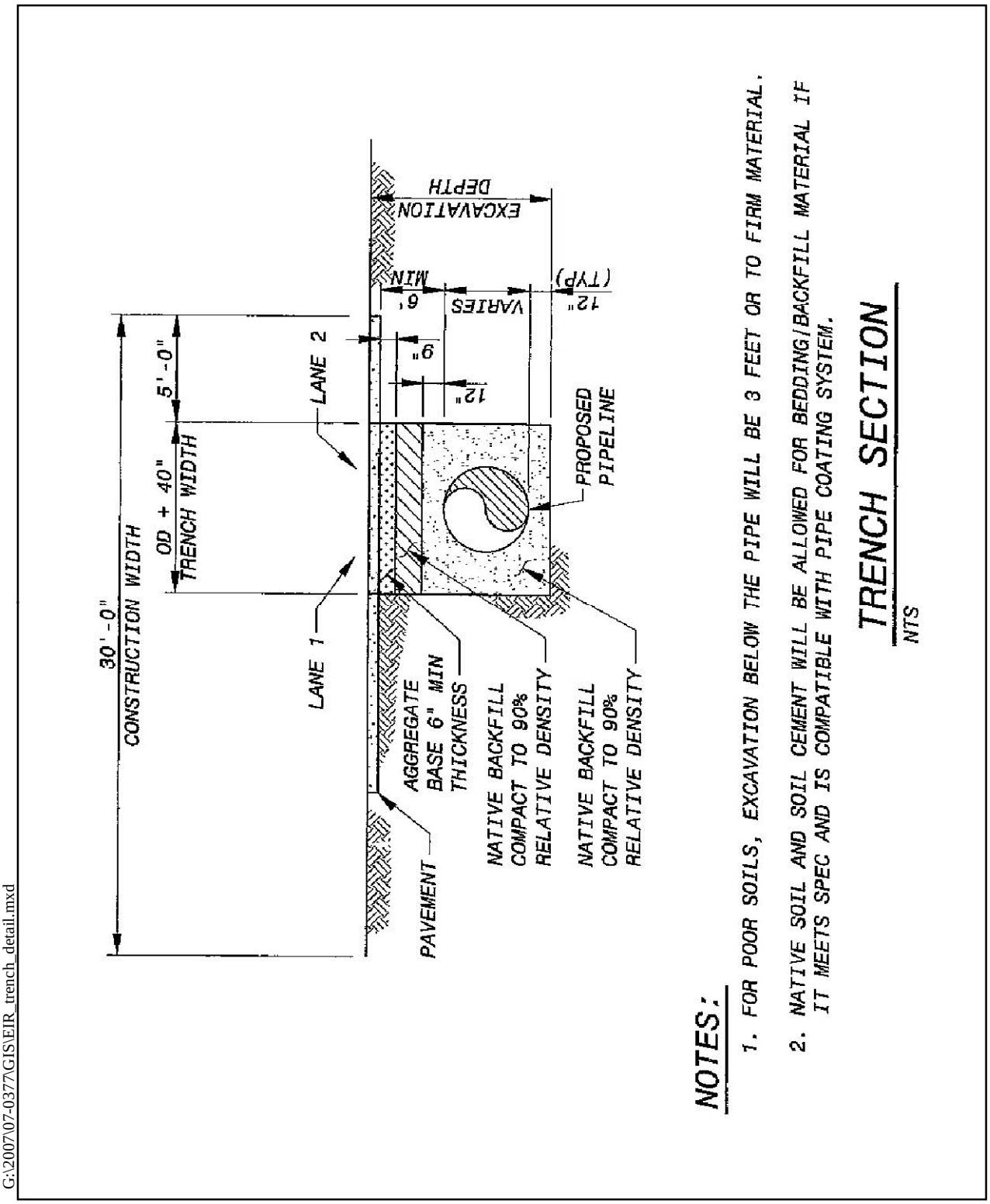


Figure 4.12-4
Typical Open Trench Detail

The City of Riverside, Riverside County Transportation Department, and City of Redlands/County of San Bernardino[1] require that the Highway Capacity Manual (HCM; Methodologies – Section 3) be used to analyze the LOS. The aforementioned jurisdictions are the only jurisdictions that will have potential traffic impacts associated with the project. Therefore, although the project's footprint is located within the boundaries of additional jurisdictions, these were the only jurisdictions analyzed in the Traffic Study and Traffic Study addendum.

The HCM evaluates the LOS of intersections based upon the control delay per vehicle. The methodology used to evaluate the intersection level of service differs on whether the intersection is signalized or unsignalized. Levels of service at signalized and unsignalized intersections have been evaluated using Traffix Version 7.9 and Synchro Version 7, which are based upon year 2000 HCM methodologies. **Table 4.12-A, Level of Service (LOS) Standards**, shows the stopped delay criteria used to determine the level of service at intersections.

In order to evaluate traffic conditions for the project analysis year (2013), area-wide growth on the existing roadways was projected. Per discussion with the City of Riverside Transportation Department staff, the Traffic Study and Traffic Study addendum utilized a 2 percent per year growth rate.

Table 4.12-A
Level of Service (LOS) Standards

Level of Service (LOS)	Signalized Intersections: Stopped Delay (seconds/vehicle)	Unsignalized Intersections: Stopped Delay (seconds/vehicle)	Qualitative LOS Description
A	$\leq$ 10	$\leq$ 10	Free flow: Low volumes; high speeds; speed not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.
B	> 10 and $\leq$ 20	> 10 and $\leq$ 15	Stable flow: Operating speeds beginning to be affected by other traffic; between 1% and 10% of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods.
C	> 20 and $\leq$ 35	> 15 and $\leq$ 25	Stable Flow, Increased Density: Operating speeds and maneuverability closely controlled by other traffic; between 11% and 30% of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods; recommended ideal design standards.
D	> 35 and $\leq$ 55	> 25 and $\leq$ 35	Stable Flow, High Density: Tolerable operating speeds; 31% to 70% of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods; often used as design standards in urban areas.
E	>55 and $\leq$ 80	> 35 and $\leq$ 50	Flow at or Near Capacity: maximum traffic volume an intersection can accommodate; restricted speeds; 71% to 100% of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods.
F	> 80	> 50	Forced or Breakdown Flow: Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume will be less than the volume occurring at LOS 'E' due to decreased speeds.

Source: "Highway Capacity Manual," Highway Research Board Special Report 209, National Research Council, Washington D.C., 2000.

[1] The intersection that is located within the County of San Bernardino (SR-210 SB Ramps / San Bernardino Avenue) is in an area referred to as the "donut hole" which is regulated by City of Redlands traffic methodology requirements.

The ease with which intersections within the study area handle traffic largely controls the operation of the roadway system as a whole. Therefore, analysis of traffic at study area intersections was used to evaluate the traffic impacts of the project within the Central Reach. Based on the Traffic Study and Traffic Study Addendum, 36 intersections within the study area were evaluated to determine their existing and future levels of service. These intersections are:

1. Clay Street / Limonite Avenue (County of Riverside)
2. Clay Street / Linares Avenue (County of Riverside)
3. Van Buren Boulevard / Jurupa Avenue (City of Riverside)
4. Van Buren Boulevard / Arlington Avenue (City of Riverside)
5. Van Buren Boulevard / Jackson Street (City of Riverside)
6. Jackson Street / Colorado Avenue (City of Riverside)
7. Jackson Street / California Avenue (City of Riverside)
8. Jackson Street / Garfield Street (City of Riverside)
9. Jackson Street / Magnolia Avenue (City of Riverside)
10. Jackson Street / Indiana Avenue (City of Riverside)
11. Jackson Street / Lincoln Avenue (City of Riverside)
12. Jackson Street / Victoria Avenue (City of Riverside)
13. Jackson Street / Colorado Avenue (City of Riverside)
14. Monroe Street / California Avenue (City of Riverside)
15. Monroe Street / Garfield Street (City of Riverside)
16. Monroe Street / Magnolia Avenue (City of Riverside)
17. Monroe Street / Indiana Avenue (City of Riverside)
18. Monroe Street / Lincoln Avenue (City of Riverside)
19. Monroe Street / Victoria Avenue (City of Riverside)
20. La Sierra Avenue / Cleveland Avenue (County of Riverside)
21. La Sierra Avenue / Dufferin Avenue (County of Riverside)
22. La Sierra Avenue / McAllister Parkway (County of Riverside)
23. La Sierra Avenue / Orchard View Lane (County of Riverside)
24. La Sierra Avenue / Lake Knoll Parkway (County of Riverside)
25. La Sierra Avenue / Lake Crest Drive (County of Riverside)
26. La Sierra Avenue / Blackburn Road (County of Riverside)
27. La Sierra Avenue / El Sobrante Road (County of Riverside)
28. Pedley Road / 56th Street (County of Riverside)
29. Pedley Road / 58th Street (County of Riverside)
30. Pedley Road / Limonite Avenue (County of Riverside)
31. Baldwin Avenue / Limonite Avenue (County of Riverside)
32. Clay Street / Limonite Avenue (County of Riverside)
33. Alabama Street / San Bernardino Avenue (County of San Bernardino)
34. SR-210 SB Ramps / San Bernardino Avenue (County of San Bernardino)
35. SR-210 NB Ramps / San Bernardino Avenue (City of Redlands)
36. Texas Street / San Bernardino Avenue (City of Redlands)

The Riverside County General Plan establishes, as a countywide target, a minimum LOS C on all County-maintained roads and conventional state highways. Exceptions allow LOS D on roadways in Community Development areas at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections and LOS E in designated community centers to the extent that it supports transit-oriented development and walkable communities.

The City of Riverside General Plan establishes a LOS target of D or better on arterial streets wherever possible. At some key locations, such as city arterial roadways which are used as a freeway bypass by regional through traffic and at heavily traveled freeway interchanges, the City of Riverside General Plan states that a LOS E may be acceptable as determined on a case-by-case basis.

The City of Redlands General Plan establishes an LOS target of C or better as the standard at all intersections presently at LOS C or better. Within the area identified in the City of Redlands General Plan Figure 5.3, including that unincorporated County area identified on City of Redlands General Plan Figure 5.3 as the "donut hole," maintain LOS C or better; however, accept a reduced LOS on a case by case basis upon approval by four-fifths (4/5ths) vote of the total authorized membership of the City Council. However, LOS D is acceptable in unincorporated portions of the county of San Bernardino pursuant to its regulations. Where the current LOS at a location within the City of Redlands is below the LOS C standard, no development project shall be approved that cannot be mitigated so that it does not reduce the existing LOS at that location except as provided above.

The intersection LOS for existing conditions, as shown in **Table 4.12-B, Existing Level of Service for Study Intersections**, below, are based upon the existing roadway system and the existing AM and PM peak hour intersection volumes. The intersections in bold do not currently meet the applicable LOS criteria. The following five intersections operate at unacceptable levels of service under existing conditions:

- 10. Jackson Street / Indiana Avenue
- 16. Monroe Street / Magnolia Avenue
- 18. Monroe Street / Lincoln Avenue
- 21. La Sierra Avenue / Dufferin Avenue
- 27. La Sierra Avenue / El Sobrante Road

Table 4.12-B
Existing Level of Service for Study Intersections

Intersection	Traffic Control Status[1]	LOS Criteria	AM Peak Hour		PM Peak Hour	
			Delay (Sec)	LOS	Delay (Sec)	LOS
1. Clay Street / Limonite Avenue	Signal	C	30.2	C	33.2	C
2. Clay Street / Linares Avenue	Signal	C	19.6	B	15.4	B
3. Van Buren Boulevard / Jurupa Avenue	Signal	C	19.5	B	21.2	C
4. Van Buren Boulevard / Arlington Avenue (EW)	Signal	D	35.6	D	40.0	D
5. Van Buren Boulevard / Jackson Street	Signal	C	30.8	C	33.1	C
6. Jackson Street / Colorado Avenue	Signal	C	31.8	C	30.9	C
7. Jackson Street / California Avenue	Signal	C	29.8	C	31.1	C
8. Jackson Street / Garfield Street	Signal	C	22.0	C	23.7	C
9. Jackson Street / Magnolia Avenue	Signal	C	33.5	C	29.8	C
10. Jackson Street / Indiana Avenue	**Signal**	**D**	**66.5**	**E**	**34.4**	**C**
11. Jackson Street / Lincoln Avenue	Signal	D	35.5	D	29.0	C
12. Jackson Street / Victoria Avenue	AWSC	C	17.8	C	14.5	B
13. Jackson Street / Colorado Avenue	AWSC	C	12.0	B	11.6	B
14. Monroe Street / California Avenue	Signal	C	29.8	C	27.3	C
15. Monroe Street / Garfield Street	AWSC	C	13.6	B	10.7	B
16. Monroe Street / Magnolia Avenue	**Signal**	**D**	**68.2**	**E**	**30.1**	**C**
17. Monroe Street / Indiana Avenue	Signal	D	35.2	D	30.6	C
18. Monroe Street / Lincoln Avenue	**AWSC**	**D**	**86.9**	**F**	**11.9**	**B**
19. Monroe Street / Victoria Avenue	AWSC	C	14.0	B	11.6	B
20. La Sierra Avenue / Cleveland Avenue	OWSC	C	23.9	C	15.8	C
21. La Sierra Avenue / Dufferin Avenue	**OWSC**	**C**	**27.4**	**D**	**78.2**	**F**
22. La Sierra Avenue / McAllister Parkway	Signal	C	19.7	B	14.8	B
23. La Sierra Avenue / Orchard View Lane	OWSC	C	18.5	C	14.0	B
24. La Sierra Avenue / Lake Knoll Parkway	Signal	C	13.9	B	9.5	A
25. La Sierra Avenue / Lake Crest Drive	Signal	C	13.9	B	9.5	A
26. La Sierra Avenue / Blackburn Road	Signal	C	29.6	C	21.5	C
27. La Sierra Avenue / El Sobrante Road	**AWSC**	**D**	**14.2**	**B**	**40.2**	**E**
28. Pedley Road / 56th Street	TWSC	D	14.6	B	14.2	B
29. Pedley Road / 58th Street	OWSC	C	13.8	B	14.5	B
30. Pedley Road / Limonite Avenue	Signal	D	28.6	C	27.8	C
31. Baldwin Avenue / Limonite Avenue	Signal	D	12.7	B	17.4	B

Intersection	Traffic Control Status[1]	LOS Criteria	AM Peak Hour		PM Peak Hour	
			Delay (Sec)	LOS	Delay (Sec)	LOS
32. Clay Street / Limonite Avenue	Signal	D	30.3	C	33.4	C
33. Alabama Street / San Bernardino Avenue	Signal	C	27.8	C	30.6	C
34. SR-210 SB Ramps / San Bernardino Avenue	Signal	C	20.9	C	31.3	C
35. SR-210 NB Ramps / San Bernardino Avenue	Signal	C	23.8	C	32.6	C
36. Texas Street / San Bernardino Avenue	Signal	C	14.6	B	13.0	B

[1] AWSC = All Way Stop Controlled, OWSC = One Way Stop Controlled, TWSC = Two Way Stop Controlled

The intersection LOS for existing conditions plus ambient growth, as shown in **Table 4.12-C, Existing plus Ambient Growth Level of Service for Study Intersections**, are based upon the existing roadway system, existing AM and PM peak hour intersection volumes and ambient growth (at 2% per year, through year 2013). The six intersections shown in bold will not meet the applicable LOS criteria. This includes the same five intersections that are currently failing under existing conditions, plus one additional intersection; La Sierra Avenue and Cleveland Avenue. The following six intersections are anticipated to fail under existing plus ambient growth conditions:

- 10. Jackson Street / Indiana Avenue
- 16. Monroe Street / Magnolia Avenue
- 18. Monroe Street / Lincoln Avenue
- 20. La Sierra Avenue / Cleveland Avenue
- 21. La Sierra Avenue / Dufferin Avenue
- 27. La Sierra Avenue / El Sobrante Road

Table 4.12-C
Existing plus Ambient Growth Level of Service for Study Intersections

Intersection	Traffic Control Status[1]	LOS Criteria	AM Peak Hour		PM Peak Hour	
			Delay (Sec)	LOS	Delay (Sec)	LOS
1. Clay Street / Limonite Avenue	Signal	C	30.6	C	34.2	C
2. Clay Street / Linares Avenue	Signal	C	19.6	B	15.4	B
3. Van Buren Boulevard / Jurupa Avenue	Signal	C	14.4	B	16.3	B
4. Van Buren Boulevard / Arlington Avenue (EW)	Signal	D	34.6	C	36.0	D
5. Van Buren Boulevard / Jackson Street	Signal	C	30.3	C	32.3	C
6. Jackson Street / Colorado Avenue	Signal	C	32.4	C	31.1	C

Intersection	Traffic Control Status[1]	LOS Criteria	AM Peak Hour		PM Peak Hour	
			Delay (Sec)	LOS	Delay (Sec)	LOS
7. Jackson Street / California Avenue	Signal	C	30.1	C	31.7	C
8. Jackson Street / Garfield Street	Signal	C	22.2	C	23.9	C
9. Jackson Street / Magnolia Avenue	Signal	C	34.9	C	30.2	C
10. Jackson Street / Indiana Avenue	**Signal**	**D**	**88.6**	**F**	**36.0**	**D**
11. Jackson Street / Lincoln Avenue	Signal	D	37.0	D	29.0	C
12. Jackson Street / Victoria Avenue	AWSC	C	19.5	C	15.0	B
13. Jackson Street / Colorado Avenue	AWSC	C	13.5	B	12.9	B
14. Monroe Street / California Avenue	Signal	C	30.0	C	27.6	C
15. Monroe Street / Garfield Street	AWSC	C	15.9	C	11.5	B
16. Monroe Street / Magnolia Avenue	**Signal**	**D**	**93.0**	**F**	**31.9**	**C**
17. Monroe Street / Indiana Avenue	Signal	D	37.0	D	30.8	C
18. Monroe Street / Lincoln Avenue	**AWSC**	**D**	**121.6**	**F**	**13.1**	**B**
19. Monroe Street / Victoria Avenue	AWSC	C	14.8	B	11.9	B
20. La Sierra Avenue / Cleveland Avenue	**OWSC**	**C**	**28.0**	**D**	**17.5**	**C**
21. La Sierra Avenue / Dufferin Avenue	**OWSC**	**C**	**32.6**	**D**	**116.0**	**F**
22. La Sierra Avenue / McAllister Parkway	Signal	C	20.5	C	15.5	B
23. La Sierra Avenue / Orchard View Lane	OWSC	C	20.9	C	15.2	C
24. La Sierra Avenue / Lake Knoll Parkway	Signal	C	14.2	B	9.8	A
25. La Sierra Avenue / Lake Crest Drive	Signal	C	14.0	B	9.6	A
26. La Sierra Avenue / Blackburn Road	Signal	C	30.6	C	21.9	C
27. La Sierra Avenue / El Sobrante Road	**AWSC**	**D**	**16.4**	**C**	**56.3**	**F**
28. Pedley Road / 56th Street	TWSC	D	15.4	C	15.1	C
29. Pedley Road / 58th Street	OWSC	C	14.6	B	15.4	C
30. Pedley Road / Limonite Avenue	Signal	D	29.0	C	28.6	C
31. Baldwin Avenue / Limonite Avenue	Signal	D	12.5	B	17.7	B
32. Clay Street / Limonite Avenue	Signal	D	30.6	C	34.3	C
33. Alabama Street / San Bernardino Avenue	Signal	C	28.1	C	31.0	C
34. SR-210 SB Ramps / San Bernardino Avenue	Signal	C	21.2	C	33.8	C
35. SR-210 NB Ramps / San Bernardino Avenue	Signal	C	24.8	C	34.0	C
36. Texas Street / San Bernardino Avenue	Signal	C	15.3	B	13.6	B

[1] AWSC = All Way Stop Controlled, OWSC = One Way Stop Controlled, TWSC = Two Way Stop Controlled

4.12.2 Summary of 2005 Certified Program EIR for Riverside-Corona Feeder Project

Potential Significant Impacts/Environmental Consequences

Transportation and Traffic impacts were addressed in Section II-8 (pp. II-8-1 through II-8-9) of the 2005 PEIR for the Riverside-Corona Feeder Project (2005 Project Alignment), which is hereby incorporated by reference. The following discussion is a summary of the Transportation and Traffic section of the 2005 PEIR:

***Threshold**: Impact traffic such as to cause a traffic hazard or safety issue.*

The proposed project alignments will be located adjacent to or near sensitive uses that may be especially sensitive to traffic disruption or construction hazards. Schools, especially high schools, have students that arrive via public transportation as well as key times of day when construction equipment could pose traffic disruption and/or safety hazards. Bus stops in general are in locations where bus patrons might be put in danger during heavy construction activities within streets. Hospitals and fire stations need continuous access to be able to provide emergency services. Lack of coordination or consideration for these types of land uses and situations would be considered temporary but significant.

***Threshold:** Causes an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.*

Traffic increases due to the proposed project will consist of construction worker vehicles and trucks hauling dirt or delivering materials. The numbers of vehicles varies somewhat depending on the type of construction being performed, tunneling/boring or traditional trenching. Assumptions for the most extensive construction activities (Reach A and Reach C) are outlined in Section II-2, Air Quality, of the 2005 PEIR. They include up to 25 workers per day (50 trips), and up to 24 trucks (48 trips) per day, worst case. The workers and trucks will be headed toward a slightly different segment of the construction route each day as construction progresses; therefore no one street segment is impacted continuously for the duration of project construction.

The proposed 30-mile route of the 2005 Project Alignment is located in all types and sizes of streets from busy arterials like Chicago Avenue in Riverside to small two lane roads like Irving Street. Thus, the proposed project's traffic will represent a small increase in relation to the existing traffic in some areas and a larger increase in relation to existing traffic in other locations. In general, however, impacts to traffic from the project will consist of minor (less than 100 trips per day), short-term increases in vehicle trips which will result in a less than significant increase in traffic.

***Threshold**: Conflict with transportation plans and public transportation service.*

The proposed project will be constructed primarily in road rights-of-way. Impacts to traffic from the project will consist of minor, short-term increases in vehicle trips and delays as a result of pipeline construction. Public transit services use some of the same roadways that will be impacted by project construction. Direct disruption or the need for temporary relocation of one bus route can indirectly affect many more routes. RTA has provided the following list of potential impacts caused by major pipeline construction:

- Bus lines often must be re-routed to other streets due to construction;
- Re-routings significantly affect published schedules. Public notices of changes need to be distributed well in advance so that buses are not missed;
- Construction-caused congestion and slower traffic affects schedules and route connections;
- The above difficulties can "domino" through much of the transit system;
- Bus benches, bus stops, etc. are closed, moved or otherwise made inaccessible and riders are unsure where to safely board the bus or step off the bus;
- Transit agency dispatchers will need to publish numerous driver bulletins as necessary to keep the crew informed of changes to routes and stops. [For example,] in a normal week, perhaps 10 are issued for the entire Western Riverside County RTA service area. A project such as the RCF could quadruple this number.

There are total of 16 bus lines that may be impacted by the proposed project, 13 RTA lines and 3 Omnitrans lines as listed below.

RTA Lines

- Route 25 Barton Road from Hunts Lane to Mount Vernon Avenue, in Colton and Grand Terrace
- Route 25 Intersection of Iowa Avenue and Marlborough Avenue to Martin Luther King Boulevard, in Riverside
- Route 25 Michigan Avenue and Barton Road at Omnitrans Transfer Point
- Route 13 Marlborough Avenue from Iowa Avenue to Chicago Avenue in Riverside
- Route 13 Chicago Avenue from Marlborough Avenue to Martin Luther King Boulevard in Riverside
- Route 1 Intersection of Chicago Avenue and 3rd Street in Riverside
- Route 14 Intersection of University Avenue and Chicago Avenue in Riverside
- Route 16 Intersection of University Avenue and Chicago Avenue in Riverside
- Route 25 Intersection of University Avenue and Chicago Avenue in Riverside
- Other Local trolley lines and shuttle buses at the intersection of University Avenue and Chicago Avenue
- Route 208 Intersection of Chicago Avenue and Martin Luther King Boulevard in Riverside
- Route 22 Chicago Avenue from University Avenue to Alessandro Boulevard in Riverside
- Route 20 Intersection of Alessandro Boulevard and Central Avenue in Riverside
- Route 20 Intersection of Chicago Avenue and Arlington Avenue in Riverside
- Route 10 Lincoln Avenue from Horace Street to Adams Street in Riverside
- Route 27 Intersection of Van Buren Boulevard and Cleveland Avenue in Riverside
- Route 1 Magnolia Avenue from Neece Street to Interstate 15 in Corona

- Route 3 Magnolia Avenue from Neece Street to Interstate 15 in Corona

Omnitrans Lines

- Route 2 Hospitality Lane at Hunts Lane
- Route 200 Barton Road from Waterman Avenue to Preston, and in Grand Terrace along Mt. Vernon and Michigan
- Route 19 Barton Road and Washington

Lack of coordination with or consideration for public transportation would be considered a **temporary but significant impact**.

2005 Project Alignment Mitigation Measures

The following mitigation measures were adopted in the 2005 PEIR and reduce potentially significant impacts related to transportation and traffic:

MM Trans 1: Bus stops and signs temporarily removed or closed by the proposed project shall be replaced and posted pursuant to the standards and requirements of the affected transit agency.

MM Trans 2: A Traffic Control and Safety Plan shall be prepared for each reach of construction. WMWD shall coordinate with affected transit agencies, schools, fire stations and other affected local jurisdictions on the preparation of each Traffic Control and Safety Plan. Traffic Control and Safety Plans may include, but not be limited to, such things as adjusted hours of construction in certain locations, signs, flagmen, adequate notice of construction schedules, and cones or barriers to detour traffic. The Traffic Control and Safety Plan for each Reach shall be completed and notice/information given to affected sensitive sites at least 30-days prior to the anticipated disruption to be caused by construction.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the 2005 Project Alignment found that with the implementation of Mitigation measures **MM Trans 1** and **MM Trans 2**, potential temporary significant impacts to transportation services and sensitive uses will be reduced to less than significant levels.

4.12.3 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The impacts and findings discussed in the 2005 PEIR related to traffic and transportation impacts are applicable to both the 2005 Project Alignment and the Realignment Alternatives for Reach H. The Realignment Alternatives will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D, in the 2005 P EIR which is referenced as the Northern and Central Reaches.

The analysis of traffic impacts from construction contained within the 2005 PEIR does not specifically address the proposed realignment for Reaches E, F and G, however. Reaches E, F,

and G were re-evaluated and Reaches F and G were refined slightly in 2007, as analyzed in the *Final Environmental Impact Report for the La Sierra Avenue Water Transmission Pipeline Project* (SCH: 2006101152) which was certified by WMWD on February 20, 2008 (Reaches E, F, and G 2008 Refinement EIR), attached as Appendix J. This refined alignment for Reaches F and G will remain consistent with the 2008 Refinement EIR under both realignment alternatives evaluated herein.

The analysis conducted in this section of the SEIR/EIS is provided to address the Riverside-Corona Feeder Realignment Alternatives. This SEIR, the 2005 PEIR for Reach H and the Reaches E, F, and G 2008 Refinement EIR will provide analysis for the entire length of the project.

Thresholds of Significance

Western Municipal Water District has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, Western Municipal Water District's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to transportation and traffic may be considered potentially significant if the project would:

- cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.
- conflict with adopted policies, plans, or programs supporting alternative transportation.

Related Regulations

WMWD's construction workers will be required by WMWD Standard Specifications documents to provide adequate and safe traffic control measures that will both accommodate local traffic and ensure the safety of drivers, pedestrians, and workers. Sections F-13 and F-15 of WMWD's Standard Specifications address Traffic and Access, and Street Closures, Detours, Barricades, respectively. The excerpts from WMWD Standard Specifications below illustrate the level of responsibility that will be required of the contractor for the construction of the RCF project with respect to traffic issues.

> F-13 Traffic and Access
>
> Traffic and access shall comply with Section 7-10 of the "Standard Specifications for Public Works Construction" and "Work Area Traffic Control Handbook" (W.A.T.C.H. Manual) as published by Building News, Inc. The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to pass through the work, or an approved detour shall be provided. At least one (1) lane on cross streets shall be available at all times for use of vehicles and emergency equipment. Safe and adequate pedestrian and vehicular access shall be provided and maintained to fire hydrants, commercial and industrial establishments of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved by the engineer.

> Safe and adequate pedestrian zones and public transportation stops, as well as pedestrian crossings of the work at intervals not exceeding 300 feet, also shall be maintained unless otherwise approved by the engineer.
>
> Vehicular access to driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time. If backfill has been completed to such extent that safe access may be provided, and the area is opened to local traffic, the Contractor shall immediately clear the street and driveways and provide and maintain access.
>
> The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules for these services.
>
> F-15 Street Closures, Detours, Barricades
>
> The Contractor shall comply with all applicable State, County and City requirements for closure of streets. The Contractor shall provide barriers, guards, lights, signs, temporary bridges, flag persons and watchpersons, advising the public of detours and construction hazards. The contractor shall also be responsible for compliance with additional public safety requirements which may arise during constructions. The Contractor shall furnish and install, and upon completion of the work, promptly remove all signs and warning devises. At least 48 hours in advance of closing, or partially closing, of reopening, any street, alley, or other public thoroughfare, the Contractor shall notify the Police, Fire, Traffic and Engineering Departments of jurisdictional agencies involved, and comply with their requirements. Deviations must first be approved in writing by the engineer.

Additionally, encroachment permits will be required from applicable governing agencies for construction of the pipeline within their jurisdictional rights-of-way. Standard information included in these permits will also address issues associated with short-term traffic impacts. These governing agencies include, but may not be limited to, City of San Bernardino, Caltrans, City of Colton, County of Riverside, County of San Bernardino, City of Rialto, City of Riverside, the Gage Canal Company, and City of Corona. The excerpts below illustrate some of the measures included in Encroachment Permits issued by Riverside County that will need to be addressed by the contractors working on those portions of the RCF project located within unincorporated Riverside County, with respect to traffic issues.

> G14. Protection of Traffic: All excavations and work areas shall be properly signed, lighted, and barricaded as deemed necessary by the District Road Maintenance Supervisor or Transportation Department Inspector and in accordance with County Improvement Standards and Specifications, Ordinance Number 461; Section 6 "Public Safety and Convenience" (6.01 through 6.06).
>
> C01. Road Closures: No street shall be closed without expressed approval by the Permit Engineer. A minimum of one lane traffic shall be maintained at all times to provide limited access for the adjoining property owners and emergency vehicles. In the event it is felt by the permittee that there is no alternative to closing a street in order to perform the work, a request by letter complete with detour plans and proposed closure dates must be submitted to the permit engineer, at least four (4) weeks in advance of the

proposed road closure. Road closures, if approved, require a separate permit (no exceptions).

C04. All businesses and property owners affected by the work performed under this permit shall be notified at least 24 hours prior to start of construction. Access to businesses shall be maintained at all times.

C06. At a minimum, temporary traffic control during construction shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) and the requirements of the County Traffic Engineer.

C08. All street crossings shall be cut in half-street sections to facilitate the flow of traffic. Under no circumstances shall work be performed on these crossings on Saturdays, Sundays, or holidays.

California Streets and Highways Code Section 890.4 defines bikeways as all facilities that provide primarily for bicycle travel. This section sets forth three categories of bikeways as follows:

a. Class I bikeways, such as a "bike path," which provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized.

b. Class II bikeways, such as a "bike lane," which provide a restricted right-of-way designated for the exclusive or semiexclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.

c. Class III bikeways, such as an onstreet or offstreet "bike route," which provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

Design Considerations/Avoidance

The proposed and alternative alignments are primarily located within street rights-of-way. Since the exact location of the Riverside-Corona Feeder pipeline within any given street will be determined as construction documents are prepared, it is not known what exact encroachment permits will be required. However, boring and tunneling are proposed under Interstate 215, State Route 60, State Route 91, and under some streets and intersections which will reduce traffic impacts from what would have been expected if open trenching across these locations were proposed.

Prior to the completion of a segment's installation, construction may include backfilling and/or plating of open trenches to allow for traffic to continue using the roadway during times that active construction does not occur.[2]

[2] Addendum to Traffic Impact Study Report, Riverside-Corona Feeder Realignment Project, October 2009.

Potential Significant Impacts/Environmental Consequences

Threshold: *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.*

The project is approximately 26.3 linear miles (138,850 linear feet) in length and is described in two Reaches referred to as the Northern Reach and the Central Reach, and as four connections to other regional facilities (Central Feeder Connection, Clay Street Connection, Mockingbird Connection and La Sierra Pipeline).

Central Reach

The Central Reach will span from the intersection of Limonite Avenue and Clay Street, in unincorporated Riverside County, to connect to the alignment near the intersection of Jackson Street and Cleveland Street in the City of Riverside.

The Central Reach of the proposed Riverside-Corona Feeder Realignment begins at the intersection of Limonite Avenue and Clay Street in unincorporated Riverside. The Central Reach continues south under Clay Street from Limonite Avenue and crosses under the Santa Ana River east of Van Buren Boulevard. South of the Santa Ana River, the alignment crosses under Van Buren Boulevard to Doolittle Avenue, continues south under Doolittle Avenue to Van Buren Boulevard, where it continues south under Van Buren Boulevard. The alignment then traverses southeast under Jackson Street to Diana Avenue where it traverses southwest to Wilbur Street, then south under State Route 91. South of State Route 91, the alignment then traverses northeast under Indiana Avenue to Jackson Street, where it then traverses southeast under Jackson Street and connects to the original 2005 project alignment near the intersection of Jackson Street and Cleveland Avenue.

As an option to the Jackson Street alignment, the placement of a portion of the Central Reach would be located under Monroe Street. The Monroe Street alternative alignment would follow the above-described alignment until the intersection of Jackson Street and Colorado Avenue, where it would then traverse northeast under Colorado Avenue to Monroe Street. At Monroe Street, the alignment will continue in a southeast direction to Cleveland Avenue, where it would then traverse southwest under Cleveland Avenue to connect with the original 2005 project alignment at the intersection of Cleveland Avenue and Irving Street.

Construction involved along the Central Reach includes both boring/tunneling and shored open trench construction. Where open trench construction is planned, the shored open trench method is preferred when there is minimal allowable construction width and restricted right-of-way. The required construction width for an open trench with shored walls is 30 to 35 feet, to allow for heavy vehicle operation. An available option to this type of construction is open trench construction with flared sidewalls. Construction may also include backfilling and/or plating the open trench. This will allow for the traffic to continue using the roadway at the time construction does not occur.

The pipeline will be manufactured in 40-foot lengths. A typical work day will allow for the installation of approximately 120 feet of pipeline.

The traffic study for the central reach analyzed nineteen intersections for existing levels of service and existing levels of service with ambient growth. Without future impacts from project construction, three intersections already exceed level of service criteria. Levels of service including the project will temporarily degrade these intersections' level of service, but no additional intersections will permanently exceed the levels of service criteria as a result of the project.

The discussion below identifies each studied intersection within the Central Reach and the phases of project construction that are expected to create an unacceptable level of service for each studied intersection as a result of short term construction impacts:

1. Clay Street / Limonite Avenue (County of Riverside)

    - Construction South of the Intersection
    - Construction Through the Intersection

    In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required.

2. Clay Street / Linares Avenue (County of Riverside)

    - Construction North of the Intersection
    - Construction South of the Intersection

    In order to achieve satisfactory levels of service during the impacted phases of construction at the intersection, non-peak hour construction and/or additional detours will be required. It is noted that this intersection is expected to operate at an acceptable level of service (LOS) during construction through the intersection.

3. Van Buren Boulevard / Jurupa Avenue (City of Riverside)

    The installation of the Riverside-Corona Feeder Realignment Project will include a jack and bore method of construction to cross underneath the intersection of Van Buren Boulevard and Jurupa Avenue. This method will not cause an impact to the intersections during any phases of construction.

4. Van Buren Boulevard / Arlington Avenue (City of Riverside)

    - Construction South of the Intersection
    - Construction North of the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required. The installation of the Riverside-Corona Feeder Realignment Project will include a jack and bore method of construction to cross underneath the intersection of Van Buren Boulevard and Arlington Avenue. This method will not cause an impact to the intersections during the construction phase through/underneath the intersection.

5. Van Buren Boulevard / Jackson Street (City of Riverside)

- Construction North of the Intersection
- Construction East of the Intersection
- Construction Through the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required.

6. Jackson Street / Colorado Avenue (City of Riverside)

- Construction South of the Intersection
- Construction North of the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required. This intersection is expected to operate at an acceptable LOS during construction east of the intersection and through the intersection.

7. Jackson Street / California Avenue (City of Riverside)

- Construction South of the Intersection
- Construction North of the Intersection
- Construction Through the South Side of the Intersection
- Construction Through the North Side of the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required.

8. Jackson Street / Garfield Street (City of Riverside)

- Construction South of the Intersection
- Construction North of the Intersection
- Construction Through the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required.

9. Jackson Street / Magnolia Avenue (City of Riverside)

- Construction South of the Intersection
- Construction North of the Intersection
- Construction Through the South Side the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required. This intersection is expected to operate at an acceptable LOS during construction through the north side of the intersection.

10. Jackson Street / Indiana Avenue (City of Riverside)

- Construction South of the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required. This intersection is expected to operate at an acceptable LOS during construction west of the intersection.

11. Jackson Street / Lincoln Avenue (City of Riverside)

- Construction North of the Intersection
- Construction Through the North Side of the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required. This intersection is expected to operate at an acceptable LOS during construction through the south side of the intersection and south of the intersection.

12. Jackson Street / Victoria Avenue (City of Riverside)

The intersection is expected to operate at an acceptable level of service during all four construction phases (south and north of the intersection and through the north and south sides of the intersection).

13. Monroe Street / Colorado Avenue (City of Riverside)

The intersection is expected to operate at an acceptable level of service during both of construction phases (south and west of the intersection.

14. Monroe Street / California Avenue (City of Riverside)

- Construction Through the South Side of the Intersection
- Construction Through the North Side of the Intersection

In order to achieve satisfactory levels of service during the impacted phases of construction at this intersection, non-peak hour construction and/or additional detours will be required. Acceptable LOS is expected during construction south of this intersection and north of this intersection.

15. Monroe Street / Garfield Street (City of Riverside)

The intersection is expected to operate at an acceptable level of service during both construction phases (south of the intersection and north of the intersection).

16. Monroe Street / Magnolia Avenue (City of Riverside)

The intersection is expected to operate at an acceptable level of service during all four construction phases (south of the intersection, north of the intersection, through the north side of the intersection and through the south side of the intersection).

17. Monroe Street / Indiana Avenue (City of Riverside)

The intersection is expected to operate at an acceptable level of service during all four construction phases (south of the intersection, north of the intersection, through the north side of the intersection and through the south side of the intersection).

18. Monroe Street / Lincoln Avenue (City of Riverside)

The intersection is expected to operate at an acceptable level of service during all four construction phases (south of the intersection, north of the intersection, through the north side of the intersection and through the south side of the intersection).

19. Monroe Street / Victoria Avenue (City of Riverside)

The intersection is expected to operate at an acceptable level of service during four construction phases (south of the intersection, north of the intersection, through the north side of the intersection and through the south side of the intersection).

20. La Sierra Avenue / Cleveland Avenue (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

21. La Sierra Avenue / Dufferin Avenue (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

22. La Sierra Avenue / McAllister Parkway (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

23. La Sierra Avenue / Orchard View Lane (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

24. La Sierra Avenue / Lake Knoll Parkway (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

25. La Sierra Avenue / Lake Crest Drive (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

26. La Sierra Avenue / Blackburn Road (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

27. La Sierra Avenue / El Sobrante Road (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

28. Pedley Road / 56th Street (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

29. Pedley Road / 58th Street (County of Riverside)

The construction of the project at this intersection will require all movements to be detoured due to insufficient road width to facilitate the required construction width and travel way.

30. Pedley Road / Limonite Avenue (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

31. Baldwin Avenue / Limonite Avenue (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

32. Clay Street / Limonite Avenue (County of Riverside)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

33. Alabama Street / San Bernardino Avenue (County of San Bernardino)

This intersection is expected to operate at an acceptable level of service during the time of project construction.

34. SR-210 SB Ramps / San Bernardino Avenue (County of San Bernardino)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

35. SR-210 NB Ramps / San Bernardino Avenue (City of Redlands)

In order to achieve satisfactory levels of service during construction at this intersection, non-peak hour construction and/or detours will be required.

36. Texas Street / San Bernardino Avenue (City of Redlands)

The construction of the project at this intersection will require all movements to be detoured due to insufficient road width to facilitate the required construction width and travel way.

Traffic increases due to the proposed project will consist of construction worker vehicles and trucks hauling dirt or delivering materials. The numbers of vehicles varies somewhat depending on the type of construction being performed, tunneling/boring or traditional trenching. The proposed project's traffic will represent a small increase in relation to the existing traffic in some areas and a larger increase in relation to existing traffic in other locations. In general, however, impacts to traffic from the project will consist of minor (less than 100 trips per day) short-term increases in vehicle trips which will be a less than significant increase in traffic.

Based on the traffic study, it is concluded that the traffic impacts generated from the installation of the pipeline along the Central Reach will require non-peak hour construction and/or detours

for 27 of the 36 studied intersections. With implementation of mitigation measure **MM Trans 2**, impacts at study area intersections will be less than significant.

Northern Reach

The Northern Reach will span from the intersections of Waterman Avenue and Orange Show Road in the City of San Bernardino to the intersection of Limonite Avenue and Clay Street in unincorporated Riverside County.

Construction involved along the Northern Reach will be similar to that along the Central Reach and will include both boring/tunneling and shored open trench construction. Where open trench construction is planned, the shored open trench method is preferred when there is minimal allowable construction width and restricted right-of-way. The required construction width for an open trench with shored walls is 30 to 35 feet, to allow for heavy vehicle operation. An available option to this type of construction is open trench construction with flared sidewalls. Construction may also include backfilling and/or plating the open trench. This will allow for the traffic to continue using the roadway at the time construction does not occur.

The pipeline will probably be manufactured in 40 foot lengths. A typical work day will allow for the installation of approximately 120 feet of pipeline.
As the precise alignment of the pipeline and the exact width of the construction zone at each location have not yet been established, the specific area of blockage and the impacts related to the blockage cannot be identified for each affected roadway. The following discussion, therefore, focuses on the impacts which would typically occur during construction of this pipeline.

There are two ways that pipeline construction activities would interface with the roadway network. Construction would either cross a roadway or it would run parallel to a roadway within or adjacent to the public right-of-way. At the locations where the pipeline would run parallel to and/or longitudinally within a roadway, portions of the roadway which are currently used for traffic circulation and/or parking would be temporarily displaced. Detours around each construction zone would be necessary.

Another impact would be the generation of additional traffic on the roadways in the project area as construction workers, equipment delivery trucks, and excavation trucks travel to and from the pipeline construction zone. It is expected that most laborers would be meeting in a staging yard and would be transported to the construction site in the work trucks and pick-up trucks. The impacts of employee traffic on specific streets and intersections cannot be determined as the locations of the staging areas have not been established.

The automobile traffic generated by construction workers would be at two specific times during the day – arriving at the staging areas in the morning and leaving in the afternoon (for a daytime shift). The truck trips would be distributed throughout the day. As compared to the existing traffic volumes on the streets serving the project area, the temporary increase in traffic generated by the construction of the pipeline would be minimal. The impact of automobile traffic and truck trips would be adverse but not significant with the utilization of staging areas, assuming the implementation of mitigation measures below.

Construction of the project's Mockingbird Connection, does not require the analysis of any intersections since the proposed pipeline will not affect any General Plan intersections. At its connection underneath Van Buren Boulevard, a jack and bore method of construction shall be used so construction will not impact the roadway segment. Construction shall be handled so as to continue to allow access to local residents.

With implementation of the following mitigation measures, **MM Trans 2** through **MM Trans 9**, WMWD would be required to provide traffic control plans for the project that detail project impacts, and would also require coordination with affected jurisdictions and other a specific construction methods to be employed; therefore, impacts are considered **less than significant with mitigation**.

Threshold: *Conflict with adopted policies, plans, or programs supporting alternative transportation.*

Public Transit

The proposed project will be constructed primarily in road rights-of-way. The primary impact regarding public transit is the effect of pipeline construction on roads in which the Riverside Transit Agency (RTA) and Omnitrans buses travel on roadways that will be physically blocked by construction activities. The loss of lanes on the roadways described would result in disruption to transit service. Buses could continue to operate, as the streets and highways would not be blocked; however, there would be traffic delays and some of the bus stops would be rendered temporarily inaccessible for a period of one to two weeks.

Lack of coordination with or consideration for public transportation would be considered a temporary but potentially significant impact. With implementation of mitigation measures **MM Trans 1** and **MM Trans 10** below, impacts will be reduced to less than significant levels.

Pedestrian/Bicycle Circulation

As described above, the proposed and alternative alignments of the proposed project are primarily located within street rights-of-way located within the boundaries of the cities of Colton, Redlands, Rialto, Riverside, and San Bernardino, and unincorporated areas of the counties of Riverside and San Bernardino. Pedestrian and bicycle circulation within these jurisdictions, as designed in their general plans, may be affected by the pipeline construction activities if pedestrians are unable to pass through the construction zone or if established bike routes are blocked or eliminated. Potential impacts to pedestrian and bicycle circulation may affect pedestrian and bicycle routes that cross the alignment as well as those that are parallel to the alignment (e.g., sidewalks, shoulders, unpaved paths, and bike trails). The following discussion lists those portions of the proposed project (by road segment) that are identified by Colton, Redlands, Rialto, Riverside, San Bernardino, Riverside County and San Bernardino County as either being the location of designated trails and/or bikeways or as crossing designated trails and/or bikeways.

City of Colton

A portion of the Northern Reach of the proposed project traverses through the City of Colton. Construction of that portion of the Northern Reach located within the City of Colton has the potential to affect bicycle routes, identified by Figures 4a and 4b of the City of Colton General Plan's Circulation Element. Construction of the proposed project within the road segments listed in **Table 4.12-D, City of Colton Bicycle Routes** may potentially impact these identified bicycle routes. The Northern Reach will not parallel or intersection any Regional Multi-Purpose Trails (Class I) within the City of Colton.

Table 4.12-D
City of Colton Bicycle Routes

Roadway Segment	Bicycle Routes
Fairway Drive	Future Class II Bicycle Route
Valley Boulevard	Existing Class II Bicycle Route
La Cadena Drive	Proposed Class II Bicycle Route
Agua Mansa Road	Future Class II Bicycle Route

The Colton General Plan's Circulation Plan states that "All City of Colton bicycle routes will be established as bicycle lanes which will be striped and signed on the surface streets shown on Figures 4a and 4b. These bicycle routes are classified as Class II bikeways per Caltrans standard." (p. 23)

Development of the Northern Reach through the City of Colton has the potential to temporarily disrupt the use of any of the Class II Bicycle Routes listed in **Table 4.12-D** that have been established prior to the beginning of construction activities. However compliance with mitigation measures **MM Trans 11** and **MM Trans 12** will reduce the potential impact to below the level of significance.

City of Corona

The proposed project does not include construction within the City of Corona. However, a portion of Reach H of the 2005 Project Alignment traverses through the City of Corona, terminating at the intersection of Compton Avenue and Ontario Avenue. Construction of that portion of Reach H has the potential to affect a bicycle trail identified by the city's general plan. The road segment containing the designated bicycle trail is listed in **Table 4.12-E, City of Corona Bike Trails**. The proposed project will not parallel or intersect any other designated regional or local trails within the City of Corona.

Table 4.12-E
City of Corona Bike Trail

Roadway Segment	Bike Trails
Magnolia Avenue	Planned Class III Bike Route

The City of Corona General Plan describes Class III Bike Routes as "designated bike routes noted by signs alongside roadways but without separate striping." (p. 140) Development of Reach H of the 2005 Project Alignment through the City of Colton has the potential to temporarily disrupt the use of any of the Class III Bike Route listed in **Table 4.12-E** if the bike route has been established prior to the beginning of construction activities. However compliance with mitigation measures **MM Trans 10** and **MM Trans 11** will reduce the potential impact to below the level of significance.

City of Redlands

There are no existing or proposed trails within the construction area for the Central Feeder Connection facilities located in San Bernardino County/Redlands.

City of Rialto

A portion of the Northern Reach of the proposed project traverses through the City of Rialto. The proposed project will enter the City of Rialto from the City of Colton on Agua Mansa Road and continue southwest in Agua Mansa Road into unincorporated San Bernardino County. There are no designated trails or bikeways along Agua Mansa Road within the City of Rialto.

City of Riverside

A portion of the Central Reach of the proposed project traverses through the City of Riverside, including the component referred to as the Mockingbird Connection. Additionally, Reach E, Reach F, Reach G and a portion of Reach H of the 2005 Project Alignment traverses through the City of Riverside. Construction of that portion of the Central Reach located within the City of Riverside has the potential to affect trails and bikeways identified by Figure CCM-6 (Master Plan of Trails and Bikeways) of the City of Riverside General Plan's Circulation Element. Construction of the proposed project within the road segments listed in **Table 4.12-F, City of Riverside Trails and Bikeways**, may potentially impact these identified trails and bicycle paths.

Table 4.12-F
City of Riverside Trails and Bicycle Bikeways

Roadway Segment	Trails & Bikeways
Central Reach	
Van Buren Boulevard (north of Doolittle Avenue)	Crosses a Class 1 Bike Path/Regional Trail (County), Primary – Equestrian, Bike & Pedestrian Trail and Class 1 Bikeway
Van Buren Boulevard (south of Doolittle Avenue)	Class 2 Bikeway
Jackson Street (north of Diana Avenue)	Class 2 Bikeway
Indiana Avenue	Class 2 Bikeway
Jackson Street (south of Indiana Avenue)	Class 2 Bikeway and crosses a Primary – Equestrian, Bike & Pedestrian Trail and Class 1&2 Bikeway at Victoria Avenue
Monroe Street Alternative	
Colorado Avenue	Class 2 Bikeway
Monroe Street	Class 2 Bikeway
Cleveland Avenue	Class 2 Bikeway and crosses a Primary – Equestrian, Bike & Pedestrian Trail and Class 1&2 Bikeway at Victoria Avenue
Mockingbird Connection	
Irving Street	Connects to Irving Street, Primary – Equestrian, Bike & Pedestrian Trail
Van Buren Blvd.	Crosses a Parkway and crosses Secondary Trails located in Riverside County
2005 Project Alignment – Reach E	
Irving Street	Primary – Equestrian, Bike & Pedestrian Trail
2005 Project Alignment – Reach F	
Cleveland Avenue	Crosses a Primary – Equestrian, Bike & Pedestrian Trail at Irving Street, crosses a Class 2 Bikeway at Van Buren Boulevard, crosses a County Regional Trail at Myers Street, and crosses a Secondary – Equestrian, Bike & Pedestrian Trail at Stewart Street
La Sierra Avenue	Class 2 Bikeway
Indiana Avenue	Class 2 Bikeway
2005 Project Alignment – Reach G	
Reach G will not parallel or intersection any designated trails and bikeways.	
2005 Project Alignment – Reach H	
Indiana Avenue	Class 2 Bikeway

The City of Riverside General Plan's Circulation and Community Mobility Elements states that:

> "The City designates Class I and Class II bicycle facilities throughout the City. The bicycle facilities are shown on Figure CCM-6 (Master Plan of Trails and Bikeways). Class I bikeways provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians. Class II bikeways provide a restricted right-of-way on a roadway's shoulder designated for the exclusive or semi-exclusive use of bicycles. Victoria Avenue's bike path will continue to be a key Class I facility, with similar routes strongly encouraged as part of developing areas. Currently the City and County trails are not completely coordinated. The County trails plan is a conceptual plan at this time and many of the City's trails have not yet been built." (p. CCM-29)

Development of the Central Reach, The Mockingbird Connection, and portions of Reaches E, F and H of the 2005 Project Alignment through the City of Riverside has the potential to temporarily disrupt the use of any of the trails and bikeways listed in **Table 4.12-F** that have been established prior to the beginning of construction activities. However compliance with mitigation measures **MM Trans 11** and **MM Trans 12** will reduce the potential impact to below the level of significance.

City of San Bernardino

A portion of the Northern Reach of the proposed project traverses through the City of San Bernardino. Construction of that portion of the Northern Reach located within the City of San Bernardino has the potential to affect bicycle routes, identified by Figure PRT-2 (Concept Trail System) in Chapter 8 (Parks, Recreation and Trails) of the City of San Bernardino General Plan. Construction of the proposed project within the road segment listed in **Table 4.12-G, City of San Bernardino Trail and Bicycle Route** may potentially impact the identified trail and bicycle route.

Table 4.12-G
City of San Bernardino Trail and Bicycle Route

Roadway Segment	Trail and Bicycle Route
Orange Show Road	Bicycle Route from near Waterman Avenue Orange Show Road west to E Street. Crosses a designated Regional Multi-Purpose Trail located along Twin Creek Channel

The City of San Bernardino General Plan (pp. 8-11 and 8-12) describes the types of facilities listed in **Table 4.12-G** as:

> "**Regional Multi-Purpose Trails.** These multi-purpose trails serve bicycle, pedestrian, and in some cases, equestrian users and provide regional connections. We have the Cajon/Lytle, the Mid-City, Sand Canyon, City Creek, and Loma Linda Connector trails in San Bernardino.

> **Bicycle Routes.** We have numerous existing and planned bicycle routes in our Community, both on and off-street. The Bikeway Facilities Master Plan, which was adopted in 1994, describes a process in which we will develop a safe and efficient network of bike paths for recreation and commuter use. The following system, which is derived from the State of California, categorizes bicycle facilities into the following three classifications:
>
> - Class I Bikeways. A Class I Bikeway is a dedicated travel-way for bicyclists. The most common applications for Class I Bikeways are along rivers, canals, and utility rights-of-way, within college campuses, or within and between parks. They may also be provided as part of planned developments. Our Class 1 Bikeways are included in the Multi-Purpose Trails described above and share right-of-way with other users.
> - Class II Bikeways. Class II Bikeways delineate the right-of-way assigned to bicyclists along roadways. Bike lane signs and pavement markings help define these "bike lanes."
> - Class III Bikeways. Class III Bikeways are shared facilities that serve either to provide continuity to other bicycle facilities, or designate preferred routes through high demand corridors. Bike routes are normally shared with motor vehicles on the street, or with pedestrians on sidewalks. In either case, bicycle use is secondary."

Development of the Northern Reach through the City of San Bernardino has the potential to temporarily disrupt the use of the Bicycle Route located along Orange Show Road, if the bicycle route is established prior to the beginning of construction activities. Compliance with mitigation measures **MM Trans 11** and **MM Trans 12** will reduce the potential impact to below the level of significance. Construction of the Northern Reach will not adversely impact the Regional Multi-Purpose Trail located along Twin Creek Channel due to the planned use of the jack and bore construction method for pipeline construction under the Twin Creek Channel.

County of Riverside

A portion of the Northern Reach and a portion of the Central Reach of the proposed project traverse through unincorporated Riverside County. Additionally, portions of Reach E, Reach F and Reach H of the 2005 Project Alignment traverse unincorporated Riverside County. Construction of those portions of the Central Reach and the Northern Reach located within the unincorporated portion of Riverside County has the potential to affect trails and bikeways identified by Figure C-7 (Riverside County Trails and Bikeway System) of the County of Riverside General Plan's Circulation Element. Construction of the proposed project within the road segments listed in **Table 4.12-H, County of Riverside Trails and Bike Paths** may potentially impact these identified trails and bicycle paths.

Table 4.12-H
County of Riverside Trails and Bike Paths

Roadway Segment	Trails/Bike Paths
Northern Reach	
Market Street	Class 1 Bike Path/Regional Trail
Avalon Street	Crosses JARPD designated Class 1 Bike Path/Regional Trail on north side of SR-60
Mission Boulevard	Class 1 Bike Path/Regional Trail
Riverview Drive/Limonite Avenue	Class 1 Bike Path/Regional Trail, Crosses Community Trail at intersection of Limonite Avenue and Riverview Drive and crosses Historic Trail (Juan Bautista de Anza National Trail corridor) east of Clay Street
Central Reach	
Santa Ana River	Crosses Regional Trail along north side of Santa Ana River and Class 1 Bike Path/Regional Trail along south side of Santa Ana River
Clay Street Connection	
Limonite Avenue	Class 1 Bike Path/Regional Trail
Pedley Road	Regional Trail
La Sierra Pipeline Connection	
La Sierra Avenue	Parkway
2005 Project Alignment – Reach E	
Firethorne Avenue	Crosses Regional Trail
2005 Project Alignment – Reach H	
Indiana Avenue	Crosses a Regional Trail near the Riverside city limits and a Class I Bike Path/Regional Trail near the Corona city limits

The County of Riverside General Plan (p. C-44) describes the types of facilities listed in **Table 4.12-H** as:

> "Riverside County's bikeway system is included as part of the County's circulation system. Planned bicycle routes are shown on the Bikeways and Trails Plan, Figure C-7. The County uses three types of bike path classifications:
>
> **Class I** –Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow minimized.
>
> **Class II** - Provides a striped lane for one-way bike travel on a street or highway.
>
> **Class I Bike Path/Regional Trail (Combination Trail)** - This functions as a regional connector to link all of the major bodies of water in Western Riverside County and to provide the opportunity for long-distance users to take advantage of this system for long one-way or loop type trips. This system may also take advantage of existing or planned

> Class I Bike Paths, Regional Trails, and/or Community Trails for several combinations of easements, connections, or links. Bicycles are also allowed on regional and community trails, which allow all types of non-motorized use. However, Class I bike paths and Class II bike lanes are designed for bicycle use only. As with non-motorized trails, a connected system of bikeways is needed to encourage this alternative transportation method among County residents."

Development of portions of the Northern Reach, the Clay Street Connections and portions of Reaches E and H, through the unincorporated portion of Riverside County has the potential to temporarily disrupt the use of any of the bike paths and regional trails listed in **Table 4.12-H** that have been established prior to the beginning of construction activities. However compliance with mitigation measures **MM Trans 10** and **MM Trans 11** will reduce the potential impact to below the level of significance. The mapped Juan Bautista de Anza National Trail corridor shows the approximate location of the historic trail, but the trail itself does not physically exist in vicinity of the proposed project. Therefore, construction of the Northern Reach will not impact the historic trail. Due to the use of the jack and bore construction method to construction the proposed Central Reach under the Santa Ana River, the proposed project will avoid impacts to the identified Regional Trail and Class 1 Bike Path/Regional Trail located along the Santa Ana River.

County of San Bernardino

Construction of that portion of the Northern Reach located within the unincorporated portion of San Bernardino County has the potential to affect a trail identified by the San Bernardino County General Plan Open Space Element. Construction of the proposed project within the road segment listed in **Table 4.12-I, County of San Bernardino Trails** may potentially impact the identified trail. No bicycle facilities are identified along this portion of the Northern Reach.

Table 4.12-I
County of San Bernardino Trails

Roadway Segment	Trails
Agua Mansa Road	Crosses a Proposed Regional Trail

Development of the Northern Reach through as unincorporated portion of San Bernardino County has the potential to temporarily disrupt the use of the identified proposed regional trail, if said trail has been established prior to the beginning of construction activities. However compliance with mitigation measures **MM Trans 11** and **MM Trans 12** will reduce the potential impact to below the level of significance.

Realignment Alternatives Proposed Mitigation Measures/Minimization

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 or reduce the potential significant adverse impacts related to traffic and transportation impacts to below the level of significance.

*As described above, the following mitigation measures **MM Trans 1** and **MM Trans 2** set forth in the 2005 Certified Program EIR are still applicable to the proposed Riverside Corona Feeder Pipeline Realignment project. Mitigation measures **MM Trans 1a, 2a, and 3** through **MM Trans 12** have been added in this SEIR/EIS to address potential impacts related to the construction of the realigned pipeline and connection facilities. Mitigation measures TRAF-1 through TRAF-7 are mitigation measures established in the Reaches E, F, and G 2008 Refinement EIR. The measures below mitigate the same issues and provide a consolidated approach to mitigation for all the project alternatives. Thus, the MMs below indicate which measures from the "TRAF" list are addressed by that MM. For example, MM Trans 2a shall be used in lieu of TRAF-1 through TRAF-3 and TRAF 6, which all deal with traffic control plans. Two of the TRAF series mitigation measures are applicable to the entire project and are listed last as MM Trans 13 through MM Trans 14.*

MM Trans 1: Bus stops and signs-temporarily removed or closed by the proposed project shall be replaced and posted pursuant to the standards and requirements of the affected transit agency.

MM Trans 1a: WMWD shall coordinate the potential temporary closure of bus stops with the affected public transit agency (RTA and/or Omnitrans) to set up and comply with a collection and storage procedure that safeguards any bus stop furniture, such as bus shelters, passenger waiting benches, trash receptacles and bus stop signage, that must be removed prior to commencement of individual construction projects.

MM Trans 2: A Traffic Control and Safety Plan shall be prepared for each reach of construction. WMWD shall coordinate with affected transit agencies, schools, fire stations and other affected local jurisdictions on the preparation of each Traffic Control and Safety Plan. Traffic Control and Safety Plans may include, but not be limited to, such things as adjusted hours of construction in certain locations, signs, flagmen, adequate notice of construction schedules, and cones or barriers to detour traffic. The Traffic Control and Safety Plan for each Reach shall be completed and notice/information given to affected sensitive sites at least 30-days prior to the anticipated disruption to be caused by construction.

MM Trans 2a: (TRAF-1 through TRAF 3 and TRAF-6): Based on the Traffic Impact Study Report and Traffic Impact Study Report Addendum prepared for the project, it is concluded that the traffic impacts generated from the installation of the pipeline will require implementation of mitigation which may include non-peak hour construction (AM peak hours are 7:00 a.m. to 9:00 a.m., PM peak hours are 4:00 p.m. to 6:00 p.m.), temporary lane closures, temporary lane shifts using channelizing devices, temporary signal phasing modifications, and detours to divert traffic through nearby streets. A Traffic Control and Safety Plan shall be prepared for each reach of project construction. To maintain traffic flow and reduce air quality impacts, Traffic Control and Safety Plans shall implement recommendations on pages 1-3 through 1-12 of the Traffic Study

and 1-3 through 1-6 of the Traffic Study Addendum, and shall ensure that all vehicular/pedestrian/bike connections are maintained throughout the construction period and may include, but not be limited to, such things as:

- identification of all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow;
- circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone;
- procedures to limit lane closures during peak hours to the extent possible;
- haul routes that would minimize truck traffic on local roadways to the extent possible;
- detours for bicycles and pedestrians in all areas potentially affected by project construction;
- procedures ensuring that open trenches subject to vehicular or pedestrian traffic would be covered at the end of each workday with metal plates capable of accommodating traffic;
- the installation of traffic control devices as specified in the California Manual on Uniform Traffic Control Devices;
- the installation of safety fencing, where needed, to protect pedestrians from construction areas;
- applicable railroad safety and engineering guidelines that would be adhered to when installing pipeline within a railroad right-of-way, and by which all construction crews and project personnel would be trained on applicable railroad safety guidelines prior to commencing work within the railroad right-of-way;
- procedures by which construction vehicles and equipment would not cross the tracks except at established public crossings or as specified by the applicable railroad company;
- developed access plans to be implemented for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. The access plans would be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions shall be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator shall be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures;
- procedures to store construction materials only in designated areas;
- coordination with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary; ~~and~~
- plans to restore all roads disturbed during project construction to their preconstruction condition, pursuant to franchise agreements with an applicable jurisdiction;~~.~~
- provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site; and
- reroute construction trucks away from sensitive receptor areas.

MM Trans 3: Prior to the commencement of each individual construction project, WMWD and its contractor shall consult with the affected local jurisdiction(s) in order to coordinate project construction with applicable Capital Improvement Projects, underground facilities and/or other

known potential items needing to be taken into account during final design, plan specifications and/or construction so that issues can be avoided and/or remedies included in the specifications that meet with each jurisdiction's requirements.

MM Trans 4: WMWD shall restrict all necessary lane closures or obstructions along the Northern Reach on major roadways to off-peak periods in urbanized areas to mitigate traffic congestion and delays which would be caused by lane closures during construction and by exploratory excavations. Lane closures must not occur between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m., or as directed in writing by the affected public agency. Alternatively, WMWD shall consider nighttime construction in areas where no residences are located within 500 feet, and where traffic impacts could be reduced by avoidance of daytime construction. WMWD shall have a Traffic Management Plan prepared by a registered Traffic Engineer for the Northern Reach, describing which traffic lanes would require closure based on the pipeline location within each street, and where night construction is proposed. This plan shall be approved by each affected local jurisdiction prior to construction and implementation by WMWD.

MM Trans 5: Prior to finalizing plans for individual construction projects, WMWD shall identify all land uses along the right-of-way where project construction may adversely affect vehicular access to driveways. Where practicable, WMWD shall install the pipeline in a street location or in a manner which minimizes access problems WMWD shall also develop construction scheduling in a manner that minimizes impacts to businesses or residential areas, scheduling construction to avoid the hours or days of the week during which businesses receive the most customers, and avoiding peak traffic times adjacent to residential areas.

MM Trans 6: WMWD shall give written notification to all landowners, tenants, business operators, and residents along the right-of-way of the construction schedule, and shall explain location and duration of the pipeline and construction activities within each street (e.g., which lane/s will be blocked, at what times of day, and on what dates). WMWD shall identify any potential obstructions to driveway access, and if necessary shall make alternative access provisions. The written notification shall include a toll-free telephone number for business coordination and shall encourage affected parties to discuss their concerns with WMWD prior to the start of construction so individual problems and solutions can be identified. Alternative access provisions shall include WMWD-provided signage and alternate parking as provided and approved by local agencies.

MM Trans 7: WMWD shall submit the location of proposed staging area(s) to appropriate local jurisdictions for review and approval. WMWD shall state the size of the area, the purpose (e.g., storage of construction equipment and employee parking), the number of vehicles and pieces of equipments to be stored, and the duration (in number of days and number of hours per day) that each staging area will be used. Such areas shall be configured to minimize traffic interference.

MM Trans 8: WMWD shall provide a shuttle bus service for construction workers from convenient off-street parking areas to the work sites to minimize traffic volumes and parking demand at the work sites. Sufficient off-street parking shall be provided at the bus service staging areas so that adjacent or nearby parking facilities are not adversely affected. Multiple staging areas shall be utilized, if necessary, to reduce traffic impacts on the roadways serving the staging areas. A plan for use of shuttle buses and parking areas shall be submitted to the affected local jurisdictions for review and written approval.

MM Trans 9: Based on the Traffic Impact Study Report Addendum prepared for the project, it is concluded that the traffic impacts generated from the installation of the pipeline at the Mockingbird Connection underneath Van Buren Boulevard shall utilize a jack and bore method of construction so that construction will not impact traffic. Construction shall be handled so as to continue to allow access to local residents.

MM Trans 10: WMWD shall coordinate in advance with public transit agencies (RTA and Omnitrans) to avoid disruption to transit operations. Public transit agencies which operate bus routes on the roadways potentially affected by the proposed construction activities shall be informed in advance of the pipeline project and the potential impacts at the bus stop locations. Alternative pick-up/drop off locations shall be determined and signed appropriately. WMWD shall document coordination with transit agencies and provide documentation to the public agencies prior to the start of construction.

MM Trans 11: WMWD shall provide alternative pedestrian/bicycle access routes and trails to avoid obstruction to pedestrian/bicycle circulation. Where existing pedestrian circulation routes or bike trials would be obstructed by pipeline construction, alternative access routes shall be identified in consultation with the local jurisdiction and signed/marked appropriately.

MM Trans 12 (TRAF-7): WMWD shall restore any impacted public street, sidewalks, bikeways and trails to their pre-construction condition, following completion of each individual construction project as mutually agreed between WNWD and the local jurisdiction prior to construction.

MM Trans 13 (TRAF-4): Encroachment permits for all work within public rights-of-way shall be obtained from each involved agency prior to commencement of any construction. WMWD shall comply with all traffic control requirements of the affected local agencies.

MM Trans 14 (TRAF-5): As required by local jurisdictions, the proposed pipeline shall be jacked under select major intersections to avoid traffic disruption and congestion.

Realignment Alternatives Determination of Significance under CEQA

As stated in the 2005 PEIR, impacts to traffic and transportation impacts would be less than significant after incorporating **MM Trans 1** and **MM Trans 2**. The 2005 PEIR remains adequate to address potential impacts related to traffic hazards and the mitigation measures contained therein, as described above, will be applicable to the proposed project.

With implementation of mitigation measure **MM Trans 1** through **MM Trans 14**, impacts to traffic and transportation will be **less than significant.**

4.12.4 No Project/Action Alternative

The No Project/Action does not cause any revisions or action therefore no traffic impacts will result.

4.13 CUMULATIVE IMPACTS

Introduction

The California Environmental Quality Act (CEQA) requires that an EIR examine the cumulative impacts associated with a project, in addition to project-specific impacts. The discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone (CEQA Guidelines Section 15130(b)).

As stated in the CEQA Guidelines, an EIR "shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable (Section 15130(a)). "Cumulatively considerable" means that "the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects as defined in Section 15130" (Section 15065(c)). Section 15355 of the CEQA Guidelines states that "cumulative impacts" occur from "…the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

A cumulative impact is not considered significant if the impact can be mitigated to below the level of significance through mitigation, including providing improvements and/or contributing funds through fair share fee-payment programs designed to alleviate the cumulative impact. The EIR must examine "reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project" (CEQA Guidelines Sections 15130(a)(3) and 15130(b)(5)).

CEQA Guidelines Section 15130(b)(1) requires that a discussion of cumulative impacts be based on either a list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.

This SEIR utilizes the "summary of projections," or "plan" approach and/or the "list" approach in the cumulative analysis, as described below. Section 15130(d) of the CEQA Guidelines states that, "Previously approved land use documents such as general plans, specific plans, and local coastal plans may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and program EIRs. No further cumulative impact analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or area-wide cumulative impacts of the proposed project have been adequately addressed, as defined in Section 15152(f), in a certified EIR for that plan." Additionally, if a cumulative impact was adequately addressed in a prior EIR for a community or regional level plan, and the project is consistent with that plan

or action, then an EIR for such a project should not further analyze that cumulative impact. (Section 15130(e) of the CEQA Guidelines)

Council on Environmental Quality regulations implementing NEPA state that a cumulative impact "is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7)

There are two distinct types of impacts associated with the RCF project; temporary construction-related and operations. Construction-related impacts are primarily associated with the actual location of construction so the "list" of other reasonably foreseeable project's approach will be used for cumulative construction impacts. Capital Improvement Plans (CIPs) and websites for various public agencies were reviewed including: City and County of San Bernardino; cities of Rialto, Colton, Redlands; San Bernardino Valley Municipal Water District; riverside Public Utilities, and Inland Empire Utility Agency; to determine likely projects that may be anticipated along the route of the RCF.

Operations-related impacts would be primarily related to the groundwater basins which the project will affect. The cumulative evaluation of operations impacts will be based on the "plan" method outlined under CEQA. In this case, the most appropriate "plans" to use as a basis for analysis are the basin management plans associated with the San Bernardino Groundwater Basin (Basin Area) and the Chino Groundwater Basin (Chino Basin), and the court judgments that affect each basin. These documents are utilized because the geographic area addressed in the documents encompasses the groundwater basins associated with project operations in San Bernardino and Riverside counties and include other water supply related projects and city general plan data that could be potentially impacted by the project's contribution to cumulative impacts. The other operations-related issue is greenhouse gas emissions as they relate to energy consumption required to pump water.

Cumulative Impact Setting - Construction-Related

As stated above, the CIP and projects lists on websites were checked for reasonably foreseeable major projects within the vicinity of RCF. No future projects were identified in the immediate vicinity however, both Riverside and San Bernardino have indicated that projects have been recently completed near Van Buren Boulevard and the SAR, and Orange Show Road and the I-215, respectively. In addition, individual custom homes are being and will be built within approved Tract No. 34059 adjacent to the Mockingbird Connection facilities; however, the timing of custom home construction is speculative.

Although not directly adjacent to the project alignment, the IEUA (in conjunction with WMWD and City of Ontario) will be constructing the Chino Desalter Phase 3 project between now and 2015, which includes wells and pipelines in the Jurupa and Eastvale areas of Riverside County and the cities of Chino and Ontario in San Bernardino County.

Cumulative Impact Setting - Operations-Related

This cumulative analysis setting discussion describes the range of issues covered by the Draft Upper Santa Ana Integrated Watershed Plan - An Integrated Regional Water Management Plan (IRWMP) and the Western Judgment for the Basin Area, and the Optimum Basin Management Program (OBMP) PEIR and the Chino Judgment for the Chino Basin. Because these documents describe potential project related and cumulative impacts over time in each basin and the court-ordered parameters within which each basin must operate, background information is included below that describes the existing condition the operating strategies of these groundwater basins, as analyzed/required by these documents. This information facilitates a full understanding of the scope of change envisioned within the cumulative impact area of which the project is a part and upon which the below analysis of cumulative impacts is based.

San Bernardino Groundwater Basin

For the Upper Santa Ana River Watershed, an Integrated Regional Water Management Plan (IRWMP) is being prepared, consistent with SAWPA's larger plans, by the Upper Santa Ana Water Resources Association (Association) to address major water management issues. San Bernardino Valley Municipal Water District (Valley District), as the regional water agency, agreed to lead the planning effort. The main benefit of the IRWMP is the development of a process for managing the San Bernardino Basin Area. (See also Section 2.1, Background, for more information about SAWPA.)

The Association is composed of nine agencies in the Upper SAR watershed that share a common concern for the region's surface and groundwater resources. In 2005, the Association formed a Regional Water Management Group for the purpose of developing an IRWM Plan. The Regional Water Management Group is called the Technical Advisory Committee (TAC).

The geographic area of the portion of the Santa Ana River (SAR) watershed that the IRWMP encompasses includes Big Bear Lake and the headwaters of the SAR until it reaches the Riverside Narrows and includes the cities and communities of San Bernardino, Yucaipa, Redlands, Highland, Rialto, Colton, Grand Terrace, Loma Linda, and Riverside. This covers 824 square miles, approximately 30 percent of the total Santa Ana River watershed, and is located in San Bernardino and Riverside Counties. The climate in the area is characterized by relatively hot, dry summers and cool winters with intermittent precipitation.

The San Bernardino Basin Area (Basin Area) is the focus of the Upper Santa Ana River Watershed IRWMP and plays a central role in the water supply for communities within the region. (See Sections 4.6.1 for detailed descriptions of the Basin Area.) An objective of this IRWMP is to develop tools that might be used by water agencies to manage the groundwater levels in the Pressure Zone (also known as the area of historic high groundwater or AHHG) to reduce the risk of liquefaction in the area. Specific Basin Management Objectives are developed to manage the Basin Area in order to reduce the associated risks and computer models are being used to evaluate the various water management strategies which may be effective.

Three management objectives have been developed during the IRWM planning process.

1. Improve water supply reliability during drought periods and reduce liquefaction.
2. Protect water quality and maximize conjunctive use opportunities.
3. Provide ecosystem restoration and environmental improvement.

This IRWMP was developed in coordination with Western, San Jacinto River Watershed Council, and SAWPA, and will become part of the SAWPA regional plan for the SAR watershed. A representative from SAWPA participated in the TAC meetings. Although not a member of the TAC, a representative from WMWD was also invited to, and attended, the regular meetings of the TAC.

To ensure adequate reliable water supply for the communities in the Upper SAR watershed during a prolonged drought, the overall basin management strategy will be to operate the basin under the "Tilted Basin Concept" such that the basin would begin a drought period in "as full as possible" condition. Keeping the basin relatively full and operating a conjunctive management program according to the "Tilted Basin Concept" also provides the added flexibility to reduce imports from the SWP when water quality is less desirable. This overarching management strategy will be followed by the TAC as they complete the basin management plan process.

The 1969 Western Judgment

Production of groundwater from the Basin Area as well as recharge with imported water are regulated by a court judgment that was entered in 1969 in the case of Western Municipal Water District of Riverside County, et al., vs East San Bernardino County Water District, et al., Riverside County Superior Court No. 78426 (Western Judgment).

The Western Judgment, among other provisions, determines the rights of certain Plaintiffs to extract groundwater from an area described in the Judgment as the San Bernardino Basin Area (Basin Area). This area includes the groundwater basins in San Bernardino County that are above the Bunker Hill Dike in the Santa Ana River Watershed, but excludes the Yucaipa, San Timoteo, Oak Glen and Beaumont Basins. The plaintiffs holding such rights are the City of Riverside including those rights acquired as successor to the Riverside Water Company and The Gage Canal Company; the Riverside Highland Water Company; the Elsinore Valley Municipal Water District as successor to the rights of the Agua Mansa Water Company and the Meeks & Daley Water Company; and the Regents of the University of California (collectively "Plaintiffs").

The Western Judgment provides for a Watermaster, consisting of a committee composed of two persons appointed by the Court, one nominated by San Bernardino Valley Municipal Water District (SBVMWD) and one by Western Municipal Water District (WMWD). The Watermaster is charged with the responsibility of administering the Western Judgment, and all subsequent orders of the Court made pursuant to the Court's continuing jurisdiction. The Watermaster is required to file with the Court annual reports which include, among other information,

summaries of extractions by all parties pumping water from the Basin Area, groundwater level measurements, and an accounting of all credits and obligations in the groundwater basin.

The Western Judgment provides that extractions may be made in addition to those determined by the Western Judgment, pursuant to agreement between SBVMWD and WMWD. The Western Judgment allowed extractions on an annual basis of 167,238 acre-feet by parties other than the plaintiffs and 64,862 acre-feet by the plaintiffs, for a total of 232,100 acre-feet. The Western Judgment further provides that nothing therein shall preclude SBVMWD, WMWD or any other party from exercising such rights as they may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of underground storage capacity of the Basin Area shall not interfere with any replenishment program of the Basin Area.

In addition to certain enumerated matters, the Western Judgment provides that the Court retains jurisdiction over other matters not specifically set forth which might occur in the future, and which would be of benefit to the parties in the utilization of groundwater within the Basin Area.

Chino Groundwater Basin

The Chino Groundwater Basin ("Chino Basin") is another groundwater basin within the SAR watershed to which the project will connect. The *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion* was completed in December 2008 (OBMP Expansion). The sufficiency of the Chino Basin includes the availability of recharge water and recharge capacity for purposes of maintaining the safe yield of the Chino Basin consistent with the OBMP Expansion and Chino Basin Judgment. (See Sections 4.6.1 for detailed descriptions of the Chino Basin.) Recharge water includes imported water supplied by the Metropolitan Water District of Southern California (MWD), recycled water and stormwater. The OBMP Expansion addresses the use of recharge water, including projections with respect to availability and recharge capacity.

The groundwater modeling prepared for the Chino Basin OBMP Expansion evaluated groundwater production requirements during "put" or "take" years with the latest groundwater pumping projections for the Chino Basin. The result of the groundwater modeling iterations was that the WMWD proposed maximum "take" was reduced from 10,000 acre-feet/year to 5,000 acre-feet/year.

The geographic area of the Santa Ana River (SAR) watershed that the OBPM Expansion is bounded by: the San Gabriel Mountains and the Cucamonga Basin on the north; the Rialto-Colton Basin, Jurupa Hills, and the Pedley Hills on the east; the La Sierra area and the Temescal basin on the south; and the Chino Hills, Puente Hills, and the Pomona and Claremont Basins on the west. This covers about 235 square miles, approximately 10 percent of the total Santa Ana River watershed, and is located in San Bernardino and Riverside counties. The climate in the area is characterized by relatively hot, dry summers and cool winters with intermittent precipitation.

Since 2000, total stormwater recharge in the Chino Basin has averaged approximately 3,700 acre-feet per year; with total storm water recharge during 2004 – 05 being approximately 1,400

acre-feet and during 2005 – 06 being approximately13,000 acre-feet. State Water Project (SWP) water for artificial recharge is currently available to the region from MWD. MWD delivers SWP water into the Chino Basin from the Foothill Feeder, flowing from east to west across the northern half of the Chino Basin. During fiscal years 2004 – 05 and 2005 – 06, total SWP recharge in the Chino Basin was approximately 12,300 and 34,600 acre-feet, respectively. The aggregate average SWP water recharge that has occurred since the OBMP was implemented is approximately 12,300 acre-feet per year. During fiscal years 2004-05 and 2005-06, total recycled water recharge in the Chino Basin was approximately 160 and 1,300 acre-feet, respectively. The aggregate average recycled water recharge that has occurred since the OBMP was implemented is approximately 440 acre-feet per year. The total supplemental water recharge, consisting of imported and recycled waters was approximately 12,500 acre-feet during fiscal year 2004 – 05 and 36,000 acre-feet during fiscal year 2005 – 06. The aggregate average supplemental water recharge that has occurred since the OBMP was implemented is approximately 12,800 acre-feet per year (OBMP 2006 State of the Basin Report, pp. 3-6, 3-7.)

The 1978 Chino Basin Judgment

The groundwater rights and storage capacity within the Chino Basin were established by San Bernardino Superior Court Case No. 164327 in *Chino Basin Municipal Water District v. City of Chino*, et al. in 1978, now designated No. RCV 51010 (Chino Basin Judgment). In the Chino Basin Judgment, the Chino Basin Watermaster was appointed to administer and enforce the provisions of the Judgment and any subsequent instructions or orders of the Court.

The Chino Basin Judgment declared that the safe yield of the Chino Basin is 140,000 acre-feet per year. The safe yield is allocated among three pools as follows:

(1) Overlying Agricultural Pool (dairy farmers and the State of California): 82,800 acre-feet per year

(2) Overlying Non-Agricultural Pool (industrial users): 7,366 acre-feet per year

(3) Appropriative Pool (water for municipalities and other government agencies): 49,834 acre-feet per year

An additional 5,000 acre-feet per year (200,000 acre-feet per year of controlled overdraft, averaged over 40 years) is allocated to the Appropriative Pool, which defines the safe yield per the Chino Basin Judgment as 145,000 acre-feet per year. Parties are allowed to pump in excess of the safe yield as needed, provided replenishment water is later purchased and restored to the basin. Groundwater not pumped by the agricultural users (Overlying Agricultural Pool) is re-allocated to the Appropriative Pool for municipal use.

The Superior Court mandated that the Chino Basin Watermaster develop an Optimum Basin Management Plan (OBMP). The OBMP, developed in 1998, established primary management goals to address issues, needs and interests of the water producers in Chino Basin, including four primary goals: (1) enhance basin water supplies, (2) protect and enhance water quality, (3) enhance management of the basin, and (4) equitably finance the OBMP (OBMP). In July 2000, the Watermaster's planning process culminated with the adoption of the Peace Agreement that

ended over 15 years of litigation within the Chino Basin. (See prior paragraphs for discussion of current the OBPM Expansion.

Global Climate Change and Water Conservation

The cumulative setting for global climate change is in fact, global; and 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. As a reasonable basis for cumulative analysis, the state will be used as a framework and setting.

Water systems in California do account for a measurable percentage of electricity use and the proposed project will incrementally contribute to this system. For water projects such as the Riverside Corona Feeder, energy used to pump water is the primary generator of GHG emissions. "Energy represents the largest controllable cost of providing water or wastewater services to the public. California water and wastewater agencies spend more than $500 million each year on energy costs."[1] Water systems are estimated to use approximately 7 percent of the state's total annual electricity usage. Metropolitan Water District (MWD) estimates that energy requirements to deliver water to residential customers in Southern California total as much as 33 percent of total average household electricity use.[2]

> Although there is considerable potential to improve the energy efficiency of water and wastewater utilities in California, California has the fourth lowest per capita rate of energy consumption as compared to other states (California Dept. of Energy 1999). Among the 19 most populous states – those with more than five million people – California ranks second lowest in per capita consumption, behind New York. [3]

The California Air Resources Board (CARB) Scoping Plan calls for a reduction in California's GHG emissions of approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. However, the majority of the reduction measures address areas such as Vehicle Efficiency, Low Carbon Fuel Standards, California Cap-and-Trade Program, High-Speed Rail, and Sustainable Forests, and as such, are not applicable to the project, and would not help reduce GHG emissions from the project. The CARB reduction measure for Water has the goal to "continue efficiency programs and use cleaner energy sources to move and treat water." In addition, WMWD addresses efficient use of water resources through implementation of its Updated Integrated Regional Water Management Plan (See Section 6.0 pgs 16-17 of this document for discussion of WMWD IRWMP.).

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[1] California Energy Commission Website. (Available at http://www.energy.ca.gov/process/water/index.html, accessed on 9-24-10)

[2] Awwa Research Foundation and California Energy Commission, *Water and Wastewater Industry energy Efficiency: A Research Roadmap*, prepared by McGuire Environmental Consusltants, 2004, pp. 1. (Available at http://www.energy.ca.gov/2004publications/CEC-500-2004-901/CEC-500-2004-901.PDF accessed on 9-24-10)

[3] Awwa Research Foundation and California Energy Commission, *Water and Wastewater Industry energy Efficiency: A Research Roadmap*, prepared by McGuire Environmental Consusltants, 2004, pp. 5. (Available at http://www.energy.ca.gov/2004publications/CEC-500-2004-901/CEC-500-2004-901.PDF accessed on 9-24-10)

Assessment of Cumulative Impacts

This section summarizes the cumulative impacts for each environmental topic that is evaluated in this SEIR/EIS resulting from implementation of the No Action/Project Alternative, the 2005 Project Alignment Alternative, the Realignment Alternative and the RCF Realignment Alternative with Additional Connections (Preferred Alternative), and to indicate the severity of the impacts and their likelihood of occurrence.

No Action/Project Alternative

Under the No Action/Project Alternative potential impacts associated with the construction the RCF project will be avoided. For this reason, this alternative will not contribute incremental impacts to any impacts, regarding the below-discussed issues, with the possible exception of groundwater. Therefore, this alternative will have no cumulative impacts and is not discussed below except in the Groundwater Levels and Groundwater Quality sections.

Aesthetics/Visual

2005 Project Alignment Alternative

The 2005 Project Alignment would potentially impact the Designed Landscaping along Victoria Avenue within the City of Riverside. Loss of the historic landscape along Victoria Avenue would be considered significant both aesthetically and historically. In addition, sensitive Vernacular Landscapes also exist adjacent to the proposed pipeline alignment. Such landscapes include palm rows and citrus trees within the California Citrus State Historic Park and other streets within the City of Riverside's Greenbelt area. Other jurisdictions that may have Vernacular Landscapes that include citrus trees and windrows adjacent to (sometimes within) road rights-of-way where this pipeline is proposed to be located include the County of Riverside in the Highgrove area and Grand Terrace. Loss of mature natural riparian vegetation within the Santa Ana River, at the proposed Santa Ana River crossing, would be considered potentially significant both aesthetically and biologically. However, the potential impacts will be temporary, occurring during project construction; and through implementation of the mitigation measures set forth in Section 4.1 (Aesthetics/Visual) of this SEIR/EIS which are designed to evaluate and replace existing trees and landscaping, as appropriate, potential significant scenic/aesthetic impacts due to the loss of trees and landscaping will be reduced to less than significant levels.

Other projects which may happen to be under construction at the time the RCF is being constructed could cause similar temporary impacts, but the 2005 Project Alignment Alternative would not contribute to any loss caused by other projects. Following construction of the 2005 Project Alignment, project-specific visual impacts will cease to exist. Therefore, this alternative will not contribute to an adverse cumulative impact on aesthetic/visual resources and there will be no cumulative impacts related to aesthetics.

Realignment Alternative

Construction of the Realignment Alternative consists primarily of the construction of pipelines within existing paved rights-of-way or utility rights-of-way and across some developed parking lots. Jack and bore construction technique will be used for the Central Feeder crossing of the Santa Ana River and thereby avoiding visual impacts upon the Santa Ana River. The most sensitive aesthetic resource that may be impacted by this alternative is the Designed Landscaping along Victoria Avenue within the City of Riverside. This alternative will cross Victoria Avenue at its intersection with either Jackson Street or Monroe Street. Loss of the historic landscape along Victoria Avenue would be considered significant both aesthetically and historically. In addition, sensitive Vernacular Landscapes also exist adjacent to the proposed pipeline alignment. Such landscapes include palm rows and citrus trees within the California Citrus State Historic Park and other streets within the City of Riverside's Greenbelt area. Other jurisdictions that may have Vernacular Landscapes that include citrus trees and windrows adjacent to (sometimes within) road rights-of-way where this pipeline is proposed to be located include the County of San Bernardino and City of Redlands. However, implementation of the mitigation measures set forth in Section 4.1 (Aesthetics/Visual) of this SEIR/EIS will reduce potential impacts to less than significant levels.

Other projects which may happen to be under construction at the time the RCF is being constructed could cause similar temporary impacts, but the Realignment Alternative would not contribute to any loss caused by other projects. Following completion, all of these pipelines will be located underground and therefore will have no impact upon the visual character or quality of the site and its surroundings. Therefore, this alternative will not contribute to an adverse cumulative impact on aesthetic/visual resources and there will be no cumulative impacts related to aesthetics.

Realignment Alternative with Additional Connections (Preferred Alternative)

The analysis of the potential aesthetics-related cumulative impacts of the Realignment Alternative with Additional Connections (Preferred Alternative) is the same as that described above for the Realignment Alternative.

In addition to the facilities described in that analysis above, the Preferred Alternative Mockingbird Connection includes the construction of a reservoir and related booster station in addition to proposed pipeline. The Clay Street Connection also includes a booster station. In order to reduce the visual impact of the reservoir, the reservoir will be buried by backfilling soil against the sides of the reservoir in order to recreate a natural hillside appearance to the reservoir. This design feature is required by the mitigation measures set forth in Section 4.1 (Aesthetics/Visual) of this SEIR/EIS, which also require pump/booster stations to be enclosed and/or screened with landscaping, walls or fencing. Implementation of the mitigation measures will reduce potential impacts to less than significant levels.

Other projects which may happen to be under construction at the time the RCF is being constructed could cause similar temporary impacts, but the Realignment Alternative would not contribute to any loss of landscaping caused by other projects. Following completion, all of the

pipelines will be located underground and therefore will have no impact upon the visual character or quality of the site and its surroundings. The less than significant aesthetic impacts of the reservoir and booster stations will not contribute to an adverse cumulative impact on aesthetic/visual resources and therefore this alternative will have no cumulative impacts related to aesthetics.

Air Quality/Climate Change

2005 Project Alignment Alternative

It was determined that the 2005 Project Alignment would contribute to a cumulatively considerable short-term impact during construction due to the scale of the 2005 Project Alignment (length, pipe sizes, and necessary construction techniques) even with the implementation of mitigation measures and a Statement of Overriding Considerations was adopted for significant air quality impacts when the 2005 PEIR was certified. However, it was determined that the 2005 Project Alignment would not result in a cumulatively considerable long-term impact once the project is operational because the Alignment is a pipeline and few automobiles that produce such pollutants will be used during project operation. Long-term air quality impacts were considered less than significant.

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.

Additionally, the 2005 Project Alignment Alternative's short-term and long-term emissions of GHG were found to be relatively small and not cumulatively considerable based on the AQMD screening threshold for industrial projects. Therefore, the project's contribution to cumulative GHG emissions is not considerable and impacts on global climate change are considered less than significant.

Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

As discussed in Section 4.2 (Air Quality/Climate Change) of this SEIR/EIS, the portion of the South Coast Air Basin within which the RCF project is located is designated as a non-attainment area for ozone, PM-10, and PM-2.5 under state and federal standards. In evaluating the cumulative effects of this alternative, Section 21100(e) of CEQA states that "previously approved land use documents including, but not limited to, general plans, specific plans, and

local coastal plans, may be used in cumulative impact analysis." In addressing cumulative effects for air quality, the AQMP utilizes approved general plans and, therefore, is the most appropriate document to use to evaluate cumulative impacts of the subject project. This is because the AQMP evaluated air quality emissions for the entire South Coast Air Basin using a future development scenario based on population projections and set forth a comprehensive program that would lead the region, including the project area, into compliance with all federal and state air quality standards. The project is in compliance with the AQMP and long-term project-generated emissions have been shown to be less than significant on a regional level. Even though the short-term construction of the project is shown to be significant on a regional level, these impacts are temporary and will no longer exist once the project is operational. Therefore, the project's cumulative impact to air quality is not cumulatively considerable and impacts are considered less than significant.

The Realignment Alternative's and Perferred Project Alternative's short-term emissions of GHG were found to be relatively small and not cumulatively considerable. Therefore, the project's short-term contribution to cumulative GHG emissions is not considerable and impacts on global climate change are considered less than significant.

The Realignment Alternative's long-term emissions of GHG were found to be relatively small and not cumulatively considerable based on the SCAQMD screening threshold for industrial projects. Therefore, the Realignment Alternative's long-term contribution to cumulative GHG emissions is not considerable and impacts on global climate change are considered less than significant. However, long-term emissions of GHG from the Realignment Alternative with Additional Connections (Preferred Alternative) exceed the AQMD screening threshold for industrial projects. (The threshold is 10,000 $MtCO_2$/yr at the Preferred Alternative's long-term emissions were estimated to be 14,082.12 $MtCO_2$/year without mitigation.)

The CARB Scoping Plan calls for a reduction in California's GHG emissions of approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. The project is consistent with the CARB reduction measure for Water which has the goal to "continue efficiency programs and use cleaner energy sources to move and treat water." WMWD addresses efficient use of water resources through implementation of its Updated Integrated Regional Water Management Plan (See Section 6.0 pgs 16-17 of this document for discussion of WMWD IRWMP.). The project is also consistent with this measure by its incorporation of the hydroelectric generation capabilities proposed with the Sterling Pump Station, which will generate an estimated 1,113 MWh per year, reducing the amount of project-generated CO_2 emissions by 381.89 $MtCO_2$/year to yield an estimated 14,082 $MtCO_2$/year, and MM Energy 1, MM Air 5, and MM Air 6 which require the pump stations which are designed in the future to include this same ability to produce electricity, require the use of energy efficient pumping equipment, and include solar generation for all non-pumping related uses. By reducing electricity demand, the project is consistent with the CARB Scoping Plan through hydroelectric generation; therefore, the project would not result in a conflict with a greenhouse gas emission reduction plan. However, as the project exceeds the threshold for industrial projects, the project's contribution to GHG emissions is considered cumulatively considerable and may have a significant impact on the environment.

Biological Environment

2005 Project Alignment Alternative

The 2005 Project Alignment was found to have potential direct impacts to: Santa Ana River woolly-star, slender-horned spineflower, arroyo southwestern toad, least Bell's vireo, southwestern willow flycatcher, San Bernardino kangaroo rat, and Santa Ana sucker Critical Habitat; and less than significant impacts to white-tailed kite, coastal California gnatcatcher, bald eagle, and Stephens' kangaroo rat. Sensitive riparian habitat was identified in several locations along the 2005 Project Alignment including southern willow scrub and mule-fat scrub. Where the alignment crosses under the Santa Ana River, the vegetation community was characterized by dense riparian thickets dominated by arroyo willow and red willow. However, segments of the proposed 2005 Project Alignment Alternative that extend across the Santa Ana River and other watered areas are planned to include jack and boring underneath the waterways where feasible. This would avoid impacts to the waterways, associated riparian vegetation, and habitat for sensitive species. The majority of pipelines will be constructed within the existing roadways, where feasible, thus avoiding impacts to biological resources which may be located adjacent to the roads such as habitats for Stephens' kangaroo rat, and California gnatcatcher.

The majority of the 2005 Project Alignment Alternative facilities would be underground and would not have long-term impacts on biological resources. Temporary impacts upon biological resources, as summarized in detail in Section 4.3, Biological Environment, herein, would be mitigated to below the level of significance through implementation of the mitigation measures set forth in that section. Through implementation of these mitigation measures, this alternative's contribution to potential cumulative impacts to the biological environmental would be fully mitigated. Therefore, this alternative's contribution to a cumulative biological environment impact would be less than considerable, and the cumulative biological impact would be less than significant.

Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

Several special-status plant species were found to have limited potential to occur within the various reaches of the Realignment Alternatives including California satintail, chaparral sand-verbena, Parry's spineflower, prairie wedge grass, Robinson's pepper-grass, and smooth tarplant. The California satintail and prairie wedge grass were determined to have limited occurrence potential at the proposed Santa Ana River crossing. No special-status animal species were observed within the proposed RCF realignment during field studies; however, 26 special-status animal species have the potential to occur within the study areas. These include the federally-listed coastal California gnatcatcher, Delhi Sands flower-loving fly, least Bell's vireo, Santa Ana sucker, and southwestern willow flycatcher. Other special-status species with potential to occur include the American badger, arroyo chub, burrowing owl, San Diego horned lizard, golden eagle, loggerhead shrike, long-eared owl, Los Angeles pocket mouse, northwestern San Diego pocket mouse, orange-throated whiptail, Santa Ana speckled dace, southern grasshopper mouse, southwestern pond turtle, two-striped garter snake, western yellow-billed cuckoo, yellowbreasted

chat, white-tailed kite, northern red-diamond rattlesnake, San Diego black-tailed jackrabbit, and yellow warbler.

The California Natural Diversity Database includes records of Delhi sands flower-loving fly within the immediate vicinity of the proposed project and the Northern Reach of the Realignment Alternatives supports approximately 70 acres of potentially suitable fly habitat. Stephens' kangaroo rats and coastal California gnatcatcher have the potential to occur on or adjacent to the Mockingbird Connection and the La Sierra Pipeline project areas. Segments of the proposed Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative) that extend across the Santa Ana River and other watered areas are planned to include jack and boring underneath the waterways where feasible. This would avoid impacts to the waterways, associated riparian vegetation, and habitat for sensitive species. The La Sierra pipeline will be constructed within the existing roadway all work, including staging areas and spoil storage, will occur within the existing roadway. This will avoid impacts to Stephens' kangaroo rat and California gnatcatcher habitat.

Based on the biological resource evaluations discussed in Section 4.3 (Biological Environment) and after implementation of the mitigation measures, avoidance, and minimization approaches set forth in that section are implemented, potential adverse impacts associated with special-status species; both plant and wildlife, as well as special-status communities/habitats, will be reduced to a less than significant level. Additionally, with the exception of the Mockingbird Connection's reservoir and booster station, the Clay Street Connection's booster station, and potential wells, the proposed Realignment Alternatives would consist mainly of temporary construction impacts. After construction, the disturbed area would be returned to level soil conditions and be allowed to return to its natural state. Through implementation of the mitigation measures set forth in Section 4.3, these alternatives' contribution to potential cumulative impacts to the biological environmental would be fully mitigated.

Other projects which may happen to be under construction at the time the RCF is being constructed could cause similar temporary impacts, but the Realignment Alternatives would not contribute to a net loss of conserved habitat or otherwise contribute considerably to significant biological impacts that might be caused by other projects. Therefore, these alternatives' contribution to cumulative biological environment impacts would be less than considerable, and the cumulative biological impact would be less than significant.

Cultural Resources/Paleontology

2005 Project Alignment Alternative

The 2005 Project Alignment would bisect, or lie within the immediate vicinity of a total of five historic sites. In addition, palm rows and citrus trees within the California Citrus State Historic Park and other streets in the City of Riverside Greenbelt area would be affected. Potential impacts to the Riverside Canal will be avoided because the alignment parallels the canal. Impacts related to the AT&SF Railroad and to the Southern Pacific Railroad are less than significant due to ineligibility for listing on both the state and federal levels. The relative significance of the historic Gage Canal where this alternative crosses in the cities of Colton and Grand Terrace has

not been established. In Riverside County, this alternative would cross under the Gage Canal at a point where the Canal is open and intact, rendering protection from adverse impacts necessary and potentially significant without mitigation. Impacts to the landscaping along Victoria Avenue, as well as other landscaping within the Riverside Greenbelt and California Citrus State Historic Park, are potentially significant without mitigation. The 2005 Project Alignment does not impact known archaeological resources, but the project area has a moderate likelihood of containing unknown archaeological resources. There are areas where native soils may be exposed, such as at the Santa Ana River crossing, Springbrook Wash, and in the Mockingbird Canyon area. Therefore this alternative could affect those unknown resources during construction and operation, especially in those areas, and impacts were considered significant without mitigation. There is a low potential for the discovery of unknown human remains. However, since human remains may become uncovered unexpectedly during construction, impacts were considered significant without mitigation.

Implementation of the mitigation measures set forth in Section 4.4 (Cultural Resources/Paleontology) of this SEIR/EIS would ensure that implementing this alternative would not incrementally contribute to any significant cumulative impacts upon important cultural resources in the project region and that this alternative's contribution to potential cumulative impacts to cultural resources would be fully mitigated. Therefore, this alternative's contribution to a cumulative cultural resources impact would be less than considerable, and the cumulative cultural resources impact would be less than significant.

Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

The proposed Realignment Alternatives would cross, or be within the immediate vicinity of five known historic resources. As discussed in Section 4.4 of this SEIR/EIS, seven additional cultural resources in the vicinity of the Realignment Alternatives facilities were identified during cultural resource surveys of the project area. Segments of the Realignment Alternatives have been designed to avoid potential project impacts to historic resources by requiring construction at certain canal and railway crossings (UPRR and Rancho Avenue, Riverside Canal and Agua Mansa Road, Riverside Canal and Jackson Street and Monroe Street and Riverside Canal) to be done using jack-and-bore tunneling, rather than traditional surface trenching.

These Realignment Alternatives will not impact known archaeological resources. Other areas where previously and newly recorded sites have been identified within the Area of Potential Effect, as well as the Santa Ana River crossing and the southernmost section of these alternative's central reach have also been identified as having high to moderate potential for buried cultural resources. Due to the expected presence of unknown archaeological resources within the project area, these alternatives have the potential to have an adverse effect in the significance of an archaeological resource. These alternatives could affect unknown resources during construction and impacts would be considered significant without mitigation. There is a low potential for the discovery of unknown human remains. However, since human remains may become uncovered unexpectedly during construction, impacts were considered significant without mitigation. There is also the potential for impacts related to unique paleontological

resources during construction of facilities associated with the Realignment Alternative with Additional Connections (Preferred Alternative).

Implementation of the mitigation measures set forth in Section 4.4 (Cultural Resources/Paleontology) of this SEIR/EIS would ensure that implementing these alternatives would not incrementally contribute to any significant cumulative impacts upon important cultural/paleontological resources in the project region and that either of these alternatives' contribution to potential cumulative impacts to cultural resources would be fully mitigated. Therefore, these alternatives' contribution to a cumulative cultural resources impact would be less than considerable, and the cumulative cultural resources impact would be less than significant.

Energy

2005 Project Alignment Alternative

The energy-consuming components of the 2005 Project Alignment consist of a 2,500 horsepower (hp) pump station designed to lift water from the City of Riverside's Waterman Pipeline into the 2005 Project Alignment Alternative which operates at an hydraulic gradient line (HGL) of 1250±, and up to twenty (20) 350 HP x 2,200 gallons per minute (GPM) new or existing groundwater production wells to be located within the San Bernardino Basin Area.

The estimated annual electricity consumption from the 2005 Project Alignment Alternative is approximately 19,664 MWh per year. This estimated level of consumption represents approximately 1.76 percent of the electricity used in San Bernardino and Riverside Counties by utilities for agriculture and water pumps (0.065 percent of the total electricity consumed in Riverside/San Bernardino Counties). The increase in electricity consumption from the 2005 Project Alignment Alternative is not a considerable increase and is not expected to result in adverse cumulative impacts to the existing power supply.

The 2005 Project Alignment does not cause a substantial increase in energy consumed compared to regional use for similar purposes or consumption in the region as a whole, therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power. This alternative will not have a significant project-related energy impact and the potential increase in electricity usage within Riverside and San Bernardino Counties in not cumulatively considerable. Therefore, this alternative's cumulative energy impacts are less than significant.

Realignment Alternative

The Realignment Alternative includes the Pump Station and 20 wells already included as part of the 2005 Project Alignment, and an additional pump station and hydroelectric station. The Realignment Alternative is estimated to consume approximately 20,973 MWh per year. Due to the electricity generated by the Sterling Hydroelectric Station, the electricity consumption from the Realignment Alternative is similar to the electricity consumption from the 2005 Project Alignment Alternative and only results in an additional 226 MWh per year. The total estimated

electricity consumption during 2007 within the Riverside County and San Bernardino County for utilities, including the uses proposed by this alternative, was 1,115,629.206 megawatt hours. Total electricity use for the two counties in 2007 was approximately 30,149,990 megawatt hours. (www.ecdms.energy.ca.gov/utilbynaicselec.aspx) The estimated increase in the use of electricity as a result of this alternative would be approximately 1.78 percent of the total electricity used by utilities for agricultural and water pumping and 0.066 percent of the total energy used in Riverside and San Bernardino Counties.

The Realignment Alternative does not cause a substantial increase in energy consumed compared to the 2005 Project Alignment Alternative, regional use for similar purposes, or consumption in the region as a whole, therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power. This alternative will not have a significant project-related energy impact and the potential increase in electricity usage within Riverside and San Bernardino Counties in not cumulatively considerable. Therefore, this alternative's cumulative energy impacts are less than significant.

Realignment Alternative with Additional Connections (Preferred Alternative)

Sources of energy use by WMWD for the Realignment Alternative with Additional Connections (Preferred Alternative) include electrically driven pump stations and wells. The Sterling Hydroelectric Station which will be constructed as part of this alternative will generate electricity contributing approximately 1,113 MWh per year to the electrical grid. The electricity demand for the Realignment Alternative with Additional Facilities (Preferred Alternative) is 42,154.38 MWh per year which is not expected to result in adverse impacts related to electricity in the long term. The total estimated electricity consumption during 2007 within the Riverside County and San Bernardino County for utilities, including the uses proposed by this alternative, was 1,115,629.206 megawatt hours. Total electricity use for the two counties in 2007 was approximately 30,149,990 megawatt hours. (www.ecdms.energy.ca.gov/utilbynaicselec.aspx) The estimated increase in the use of electricity as a result of this alternative would be approximately 3.68 percent of the total electricity used by utilities for agricultural and water pumping and 0.14 percent of the total energy used in Riverside and San Bernardino Counties.

The increase in electricity consumption from the Preferred Alternative is not a considerable increase when considered with other reasonably foreseeable projects and is not expected to result in adverse cumulative impacts to the existing power supply. The Preferred Alternative does not cause a substantial increase in energy consumed compared to regional use for similar purposes or consumption in the region as a whole, therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power.

Groundwater Levels

No Project/No Action Alternative

Groundwater levels in the Basin area will be at similar or slightly higher levels with the implementation of the project than without the project. In other words, there is less of a change in Total Inflow minus Total Outflow generated by the project than with the No Project scenario.

In general, lower storage conditions tend to reduce concerns about water levels being too high in the Area of Historic High Groundwater (AHHG) but cause pumping problems for wells located up-slope from the AHHG. High storage conditions have the opposite effect. Water agencies in the Basin Area have generally agreed on an approach whereby water levels in the forebay areas should be stabilized at acceptable elevations by management of recharge of local and imported water while water levels in the AHHG should be controlled to acceptable elevations by pumping, including when necessary, pumping in excess of local water supply needs. The proposed project alternatives would help to implement that approach and contribute positively in the cumulative response to water level issues in the basin but the No Project/No Action Alternative would not.

As there would be no recharge or extraction associated with the No Project/Action Alternative, no effects would result to groundwater levels from this alternative. Water reliability would not be improved without the project however, and imported supplies may not be available to some water agencies located north of the Santa Ana River.

Although the Western Judgment would allow for the management activities outlined above, without the project, the No Project/No Action Alternative would result in fewer options about how water is moved out of the forebay area to reduce water levels in the AHHG.

2005 Project Alignment Alternative

As discussed in detail in Section 4.6 (Groundwater Levels) of this SEIR/EIS, the 2005 Project Alignment Alternative includes additional replenishment of State Water Project water in amounts which are substantially less than the historical range of storage fluctuations in the San Bernardino Groundwater Basin Area (Basin Area). Annual rates of recharge at any time by the proposed project will be limited by State Water Project water availability as well as coordinated efforts to manage the basin. The replenished water would be extracted by wells located in or near the Area of Historic High Groundwater (AHHG) at a rate of up to 40,000 ac-ft per year, which is about 15% of the current rates of extraction in the basin, with actual rates depending upon the need for the water as well as upon Basin Area conditions.

A hydrologic analysis was completed to analyze the groundwater impacts of this alternative. The modeling takes into account the known operations of the basin and at the time (i.e. all cumulative groundwater operations-related projects). This analysis shows that the combined recharge and extraction operations described as part of the 2005 Project Alignment Alternative, when combined with cumulative groundwater extraction and recharge in the Basin Area, could help stabilize water levels in the upper part of the Basin Area, where recharge occurs, and help prevent undesirably high water levels in the AHHG. The 2005 Project Alignment Alternative, if operated under the modeled conditions, will not result in significant adverse impacts to groundwater levels. Since such modeling is based on assumptions regarding water availability which are speculative and cannot be guaranteed due to weather and SWP water availability, mitigation measures are necessary to require ongoing modeling, planning and reporting of operating plans as cumulative conditions change and shall be implemented as operating actions associated with this and other future projects are adjusted and created over time. In addition, all actions within the Basin Area are subject to the Western Judgment. With mitigation and actions in accordance with the Western Judgment, potential impacts to groundwater levels (safe yield)

from the proposed project would not be significant. Therefore, this alternative will not contribute to a cumulative adverse impact upon groundwater levels and the cumulative water level impacts will be less than significant.

Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

Section 4.6 (Groundwater Levels) of this SEIR/EIS discusses in detail the potential impacts of the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative). A hydrologic analysis was completed to analyze the groundwater impacts of these alternatives. The modeling takes into account the known operations of the basin and at the time (i.e. all cumulative groundwater operations-related projects). This analysis shows that during the model period 2007-2032, the cumulative groundwater pumping for the baseline run range from 206,100 acre-ft to 308,300 acre-ft, with an average of 258,600 acre-ft/yr. The baseline recharge consists of Santa Ana River diversions and the Valley District's Replenishment Obligations. The baseline artificial recharge ranges from 8,200 acre-ft to 144,000 acre-ft, with an average of 87,700 acre-ft. Groundwater level fluctuations reflect hydrological wet and dry cycles. The results of recharge and extraction modeling show that the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative) will have a lower level of groundwater pumping and artificial recharge than that projected for the 2005 Project Alignment Alternative. As a result, there total changes in groundwater storage within the Basin Area will be less than previously projected. Additionally, the total reduction in groundwater storage will be less under both Realignment Alternatives than would occur under Baseline (No Project) conditions. Therefore, it can be concluded that under these alternatives, if operated under the modeled conditions, there will be no significant impact on groundwater levels within the Basin Area. Since such modeling is based on assumptions regarding water availability which are speculative and cannot be guaranteed due to weather and SWP water availability, mitigation measures are necessary to require ongoing modeling, planning and reporting of operating plans as cumulative conditions change and shall be implemented as operating actions associated with this and other future projects are adjusted and created over time. In addition, all actions within the Basin Area are subject to the Western Judgment. With mitigation and actions in accordance with the Western Judgment, potential impacts to groundwater levels (safe yield) from the proposed project would not be significant.

Additionally, these Realignment Alternatives include a maximum groundwater extraction of 5,000 AF/YR from the Chino Basin. However, as described in Section 4.6 of this SEIR/EIS, this extraction would be consistent with the provisions of the Chino Basin Watermaster's Optimum Basin Management Plan and in accordance with the analysis contained within the *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume I.* Pursuant to that analysis, no significant effects related to groundwater levels within the Chino Basin are anticipated as a result of implementation of the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative). In addition, all actions within the Chino Basin are subject to the Chino Judgment. With mitigation and actions in accordance with the Chino Judgment, potential impacts to groundwater levels (safe yield) from the proposed project would not be significant.

Because these alternatives will have no significant effects related to groundwater levels based upon groundwater modeling that analyzed cumulative impacts upon groundwater levels, and because mitigation measures require ongoing modeling, planning and reporting of operating plans, and the stipulations of the Chino Judgment, these alternatives will not contribute to a cumulative adverse impact upon groundwater levels and the cumulative water level impacts will be less than significant.

Groundwater Quality

No Project/No Action Alternative

Due to the increased groundwater gradient resulting from the project alternatives' recharge and extraction, the rate of subsurface flow is increased and the Newmark and Muscoy plumes are cleaned up more quickly under RCF Project conditions than under No Project conditions. The footprint of the Newmark and Muscoy plumes was smaller at the end of the forecast period for the RCF Project operation than for the No Project condition. Seven wells that would be contaminated under No Project Condition would avoid contamination due to project implementation. Therefore, the No Project/No Action Alternative would contribute to adverse impacts to the water quality of the basin. Cumulatively, these impacts are not considerable.

2005 Project Alignment Alternative

The potential impact of the 2005 Project Alignment Alternative is discussed in Section 4.7 (Groundwater Quality) of this SEIR/EIS. The recharge water to be used for this alternative is generally of an equal or better quality than that of the receiving water resulting in, through dilution, water within the Basin Area of generally equal or higher quality than presently exists. Therefore, no water quality standards will be exceeded by the proposed direct addition of the imported water and direct environmental effects to groundwater quality will be less than significant due to the quality of the water being used for recharge being similar or better than the quality of the receiving water.

A hydrologic analysis was completed to analyze the groundwater quality impacts of this alternative. The modeling takes into account the known operations of the basin and at the time (i.e. all cumulative groundwater operations-related projects). The transport model results indicated that operation of 2005 Project Alignment Alternative could result in a small lateral movement of the Newmark and Muscoy plumes which is different than for the No Project condition. The model predicts that such differences in movement would cause five additional wells for a brief period of time to degrade to values greater than 5 µg/l of PCE, and 7 additional wells to improve in quality to less than 5 µg/l.

The indirect effect of this alternative's replenishment and extraction of water to/from the Basin Area is its potential effect on existing groundwater pollution plumes. Water added to the Basin Area (recharge) and extracted from the Basin Area has the potential to move the polluted groundwater depending on timing and location of recharge or extraction. Although project-related recharge and/or extraction may cause changes in the pollution plumes, it is not possible to predict where, when or to what extent those changes might occur due to the programmatic level

of the project operations. Future unknowns such as natural recharge and extraction unrelated to this alternative would also have potential impacts on pollution plumes. The lack of specific details concerning the amount and location of pumping and recharge activities associated with this alternative makes it speculative to try to predict how significant these activities may be for the water quality of the basin. Nevertheless, if operated under the modeled conditions and in compliance with the mitigation measures set forth in Section 4.7 and the Western Judgment, potential adverse impacts upon groundwater quality would be reduced to less than significant levels.

Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

Section 4.7 (Groundwater Quality) of this SEIR/EIS discusses in detail the potential groundwater quality impacts of the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative). The quality of imported State Water Project water remains of equal or better quality than the existing Basin Area water quality and therefore, the potential direct groundwater quality impacts for these alternatives will be less than significant.

A hydrologic analysis was completed to analyze the groundwater quality impacts of these alternatives. The modeling takes into account the known operations of the basin and at the time (i.e. all cumulative groundwater operations-related projects). The results of hydrologic modeling show that these alternatives, will not adversely impact the contamination plumes within the Basin Area. This modeling also shows no change in the Norton and Redland-Crafton TCE plume areas as a result of project construction. Therefore, if operated under the modeled conditions, indirect groundwater quality impacts related to these alternatives will be less than significant. Since such modeling is based on assumptions regarding water availability which are speculative and cannot be guaranteed due to weather and SWP water availability, mitigation measures are necessary to require ongoing modeling, planning and reporting of operating plans as cumulative conditions change and shall be implemented as operating actions associated with this and other future projects are adjusted and created over time. In addition, all actions within the Basin Area are subject to the Western Judgment. With mitigation and actions in accordance with the Western Judgment, potential impacts to groundwater quality from the proposed project would not be significant.

Additionally, these Realignment Alternatives include a maximum groundwater extraction of 5,000 AF/YR from the Chino Basin. However, as described in Section 4.7 of this SEIR/EIS, this extraction would be consistent with the provisions of the Chino Basin Watermaster's Optimum Basin Management Program and in accordance with the analysis contained within the *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume I*. Pursuant to that analysis, no significant impacts related to groundwater quality within the Chino Basin are anticipated as a result of implementation of the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative). In addition, all actions within the Chino Basin are subject to the Chino Judgment. Since operations will be in accordance with the OBMP Expansion and Chino Judgment, potential impacts to groundwater quality from the proposed project would not be significant.

Because these alternatives can be shown to have no significant effects related to groundwater quality based upon groundwater modeling that analyzed cumulative impacts upon groundwater quality and these alternatives are subject to mitigation measures that require ongoing monitoring, planning and reporting; the IRWMP and OBMP Expansion; and both the Western and Chino Judgments, these alternatives will not contribute considerably to a cumulative adverse groundwater quality impact and the cumulative groundwater quality impacts will be less than significant.

Hazards and Hazardous Waste/Materials

2005 Project Alignment Alternative

The 2005 Project Alignment will pass across or will be within the vicinity of 26 hazardous materials sites under various regulatory statutes. Current conditions at these sites do not pose a threat to human health or the environment. With the exception of the currently closed Corona Disposal Site, the 2005 Project Alignment will not cross any of the above sites. Rather, it would be constructed in road rights-of-way, avoiding the hazardous materials sites. Although no significant impacts related to the 26 sites were anticipated, common types of contamination could be encountered during construction of the 2005 Project Alignment resulting from leaking underground storage tanks (LUST), poor chemical handling, and accidental or intentional unauthorized chemical releases. However, these impacts would be reduced to less than significant levels through the implementation of the mitigation measures set forth in Section 4.8 (Hazards and Hazardous Waste/Materials) and through compliance with federal, state and local regulations governing the removal and transportation of hazardous soils. Because the effects of this alternative will be fully mitigated, it will not have a cumulatively considerable contribution to cumulative impacts associated with hazards and hazardous waste/materials and cumulative impacts will be less than significant.

Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

The Realignment Alternatives will pass across or will be within the vicinity of approximately 160 hazardous materials sites under various regulatory statutes. Although no significant impacts related to these sites) are anticipated, common types of contamination could be encountered during construction of the proposed project resulting from LUST, poor chemical handling, and accidental or intentional unauthorized chemical releases. However, these impacts would be reduced to less than significant levels through the implementation of the mitigation measures set forth in Section 4.8 (Hazards and Hazardous Waste/Materials) and through compliance with federal, state and local regulations governing the removal and transportation of hazardous soils.

A portion of the Northern Reach in unincorporated Riverside County and most of the Central Reach and the Clay Street Connection of the Realignment Alternatives are located within proximity to Riverside Municipal Airport. Depending on the elevation at individual construction sites, the distance from Riverside Municipal Airport runways, and the height of construction equipment; future development of portions of the Realignment Alternatives may encroach into Federal Aviation Regulations Part 77 imaginary surfaces, creating a potential hazard to aircraft.

However, these impacts would be reduced to less than significant levels through the implementation of the mitigation measures set forth in Section 4.8 (Hazards and Hazardous Waste/Materials) and through compliance with FAA regulations.

Because the effects of these alternatives will be fully mitigated, they will not have cumulatively considerable contributions to cumulative impacts associated with hazards and hazardous waste/materials and cumulative impacts will be less than significant.

Land Use

2005 Project Alignment Alternative, Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

The proposed 2005 Project Alignment Alternative, Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative) will be constructed primarily within existing road rights-of-way. Therefore, pursuant to paragraphs (d) and (e) of Section 53091 of the California Government Code, the proposed project is exempt from county and city building and zoning ordinances. The proposed RCF facilities will not be inconsistent with existing General Plan land use designations, goals, or policies. Therefore, the proposed project will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; no impact/effect will result from the action.

Future growth within the unincorporated areas of San Bernardino and Riverside counties and the cities of San Bernardino, Colton, Corona, Grand Terrace, Redlands, Rialto, and Riverside has been anticipated in these jurisdictions' general plans, as discussed in Section 4.9 (Land Use) of this SEIR/EIS. The significant of the cumulative environmental impacts of growth in these jurisdictions were addressed in the general plans and their respective CEQA compliance documents and were considered when those general plans were adopted. The proposed RCF facilities are regional facilities that will be used to deliver water from the San Bernardino Groundwater Basin and the Chino Groundwater Basin to communities throughout western Riverside and San Bernardino counties during drought and emergency periods and when water is otherwise available. These facilities will not extend water service into areas not currently served by water purveyors within the project area, and therefore will not affect any existing impediments to growth within the local jurisdictions. These alternatives will have less than significant impacts upon land use and therefore would have a less than considerable contribution to cumulative land use impacts. Because additional growth in the unincorporated areas of San Bernardino and Riverside counties and the cities of San Bernardino, Colton, Corona, Grand Terrace, Redlands, Rialto, and Riverside has been planned for by local general plans and because these alternatives will not have cumulatively considerable contributions to cumulative impacts, there will not be a significant cumulative impact on land use.

Noise

2005 Project Alignment Alternative, Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

As discussed in Section 4.10 (Noise) of this SEIR/EIS, implementation of the 2005 Project Alignment Alternative, Realignment Alternative or the Realignment Alternative with Additional Connections (Preferred Alternative) could result in temporary and intermittent construction-related noise levels that would exceed the applicable standards at nearby sensitive receptors. Construction of any of the alternatives would be temporary in nature and exempt from noise regulations in all seven of the affected jurisdictions. Current research suggests there will not be additional major construction projects in the vicinity. Potential construction-related noise impacts will be fully mitigated to less than significant levels through implementation of the mitigation measures set forth in Section 4.10, which require notification of potentially impacted sensitive receivers, and limit the hours of construction required by regulations and practices within the affected jurisdictions.

Ambient noise levels tend to increase over time as areas urbanize bringing more vehicles and people. The project's pipeline component will be placed entirely underground and inherently does not generate noise. Additionally, the reservoir component, once operational, also inherently does not generate noise. The two pump stations (at the Clay Street and Mockingbird Connections) will be fully contained within masonry block enclosures. Therefore, no contribution to cumulative ambient noise increases, if they occur, will result from the project.

Because the construction noise effects of these alternatives will be fully mitigated and there are no significant sources of operational noise, the alternatives will not have cumulatively considerable contributions to cumulative noise impacts and cumulative noise impacts will be less than significant.

Stormwater/Water Quality

2005 Project Alignment Alternative, Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

Project-related construction activities will be short-term in nature and limited geographically to each construction project that implements each alternative. As discussed in Section 4.11 (Stormwater/Water Quality) of this SEIR/EIS, the potential water quality impacts of construction activities will be minimized through compliance with established regulatory programs, requiring control of erosion and sedimentation at construction sites (State General NPDES permit and Regional Board Order 99-08 for construction-period stormwater discharges). The program will require the development of a Stormwater Pollution Prevention Plan (SWPPP), which requires installation of erosion control and sedimentation control devices throughout the project area for the entire construction phase. This will serve to protect water resources throughout the project area from pollution caused by project construction. Consequently, the construction-related water quality impacts of the 2005 Project Alignment Alternative, the Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative) will be less than

significant and will not result in a cumulatively considerable impact upon water quality. Cumulative water quality impacts will be less than significant.

Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access

2005 Project Alignment Alternative, Realignment Alternative and Realignment Alternative with Additional Connections (Preferred Alternative)

These alternatives to the RCF Project would result in potentially significant impacts due to construction-related traffic increases related to construction worker vehicles and trucks hauling dirt or delivering materials and due to disruptions in existing traffic patterns during construction within road rights-of-way. The numbers of vehicles varies somewhat depending on the type of construction being performed, tunneling/boring or traditional trenching. The proposed project's traffic will represent a small increase in relation to the existing traffic in some areas and a larger increase in relation to existing traffic in other locations. In general, however, impacts to traffic from the project will consist of minor (less than 100 trips per day) short-term increases in vehicle trips which will be a less than significant increase in traffic. Furthermore, these impacts will be reduced to less than significant levels through compliance with the mitigation measures set forth in Section 4.12 (Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access) of this SEIR/EIS, which require the preparation of a Traffic Control and Safety Plan each construction project associated with these alternatives, construction during non-peak traffic hours, and notification to landowners, tenants, business operators, and residents along the right-of-way of the construction schedule. Through implementation of these mitigation measures, these alternatives' contribution to potential cumulative traffic-related impacts will be fully mitigated. Therefore, these alternatives' contribution to cumulative impacts would be less than considerable, and the cumulative traffic impacts would be less than significant.

5.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) EVALUATION

5.1 COASTAL BARRIER RESOURCES ACT

The Coastal Barrier Resources Act, Public Law 97-348 (96 Stat. 1653; 16 U.S.C. 3501 et seq.), enacted October 18, 1982, designated various undeveloped coastal barrier islands, depicted by specific maps, for inclusion in the Coastal Barrier Resources System. Areas so designated were made ineligible for direct or indirect federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities.[1] According to the United States Fish and Wildlife Services, Coastal barriers are unique land forms that provide protection for diverse aquatic habitats and serve as the mainland's first line of defense against the impacts of severe coastal storms and erosion. Located at the interface of land and sea, the dominant physical factors responsible for shaping coastal land forms are tidal range, wave energy, and sediment supply from rivers and older, pre-existing coastal sand bodies.

At its nearest point, the current adopted pipeline alignment for the Riverside-Corona Feeder Reach H, which is consistent for all Alternatives, is located approximately 35 linear miles from the closest coastline. Therefore, since the project is not located within a Coastal Zone, the Coastal Barrier Resources Act is not applicable.

5.2 COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act became law on October 27, 1972 (Public Law 92-583, 16 U.S.C. 1451-1456). The Coastal Zone Management Act encourages states/tribes to preserve, protect, develop, and where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats.[2]

At its nearest point, the project is located approximately 35 linear miles from the closest coastline. Therefore, since the project is not located within a Coastal Zone Management Area, the Coastal Zone Management Act is not applicable.

[1] Accessed at http://www.fws.gov/laws/lawsdigest/coasbar.html on 12/3/2009.
[2] Accessed at http://www.nps.gov/history/local-law/FHPL_CstlZoneMngmt.pdf and http://www.epa.gov/agriculture/lzma.html#Summary%20of%20Coastal%20Zone%20Management%20Act%20and%20Amendments on 12/3/09.

5.3 FARMLAND PROTECTION POLICY ACT

Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the Farmland Protection Policy Act (FPPA), Subtitle I of Title XV, Section 1539-1549. According to the United States Department of Agriculture, the Farmland Protection Policy Act is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that—to the extent possible—federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland.[3]

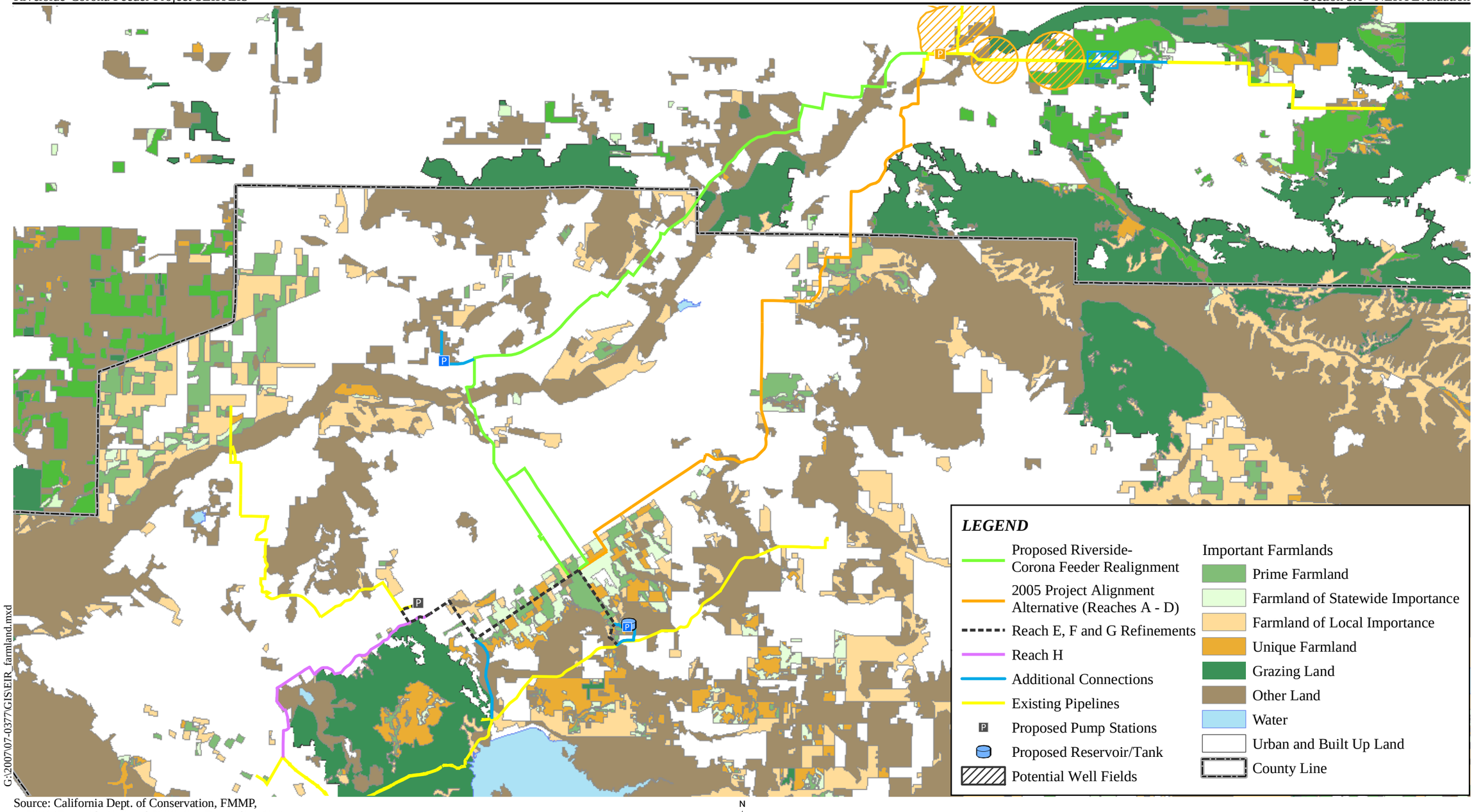
The linear pipeline and the rights-of-way within which the pipeline will be contained will traverse through or adjacent to several scattered portions of land designated by the California Department of Conservation as being considered Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance and Unique Farmland, as indicated on **Figure 5.3-1, Farmlands**. However, being located underground, and within established and already disturbed rights-of-way, this component of the project will not permanently disturb or occupy surface area in a way that it could not be used for farming purposes once the project is operational. Other portions of pipeline that will fall outside of road rights-of-way will be installed either underground or in a manner that will likewise not negate future farming uses.

Permanent aboveground components of the project will include pump stations, a reservoir/tank and potential wells. The pump stations are anticipated to occupy a maximum area of one acre each; however, as indicated on **Figure 5.3-1**, the four proposed pump stations are located on land designated as Other Land, and Urban and Built Up Land. Additionally, the reservoir/tank site, located at the south end of Reach E, is within land designated as Other Land. Therefore, these sites will not cause any unnecessary or irreversible conversion of farmland to non-agricultural uses, as required by the Farmland Protection Policy Act.

Some of the land within the well field sites, located on the northeast end of the alignment in San Bernardino County and the cities of San Bernardino and Redlands, is designated as Prime Farmland. A completed well will occupy a maximum surface area of 50 feet by 50 feet. Therefore, even if a well site were to be located within Prime Farmland, the amount of land converted to non-agricultural uses will be negligible.

Therefore, the project will not convert farmland to non-agricultural uses pursuant to the Farmland Protection Policy Act.

[3] Accessed at http://www.nrcs.usda.gov/programs/fppa/ on 12/3/09.



Source: California Dept. of Conservation, FMMP, 2004 (Riverside Co.) and 2006 (San Bernardino Co.)

Figure 5.3-1
Farmlands

5.4 FLOODPLAINS

Pursuant to Executive Order 11988 (42 F.R. 26951), as described below, an evaluation of the proposed project's potential effects due to encroachment into a floodplain is discussed in this section.

In addition to the 2005 Program EIR (2005 PEIR) and its reference documents, and other reference documents; the following references were used in the preparation of this section of the SEIR/EIS:

- FEMA Flood Insurance Rate Maps, *Riverside County, California and Incorporated Areas, Panels 45, 65, 702, 705, 706, 715, 720, 726 and 728 of 3805, Map Numbers 06065C0045G, 06065C0065G, 06065C0702G, 06065C0705G, 06065C0706G, 06065C0715G, 06065C0720G, 06065C0726G, and 06065C0728G, Effective Date August 28, 2008*. (Available at http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1, accessed on November 25, 2009.)
- FEMA Flood Insurance Rate Maps, *San Bernardino County, California and Incorporated Areas, Panel 8683, 8686 and 8687 of 9400, Map Numbers 06071C8683H, 06071C8686H and 06071C8687H, Maps Revised August 28, 2008*. (Available at http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1, accessed on November 25, 2009.)
- Executive Order 11988, *Floodplain Management*, 42 F.R. 26951, 3 CFR, 1997 Comp., p. 117. (Available at http://www.fema.gov/library/viewRecord.do?id=1395, accessed on December 4, 2009.)
- FEMA, *Definitions*. (Available at http://www.fema.gov/business/nfip/19def2.shtm#E, accessed on December 4, 2009.)
- National Oceanic and Atmospheric Administration, Definitions. (Available at http://www.weather.gov/glossary/index.php?letter=f, accessed on December 4, 2009.)

5.4.1 Setting/Affected Environment

The project site is located in the Santa Ana River Watershed, which is under the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). The Santa Ana River is the major surface water body within the Santa Ana Watershed. It conveys water approximately 69 miles from the San Bernardino Mountains to the Pacific Ocean through San Bernardino, Riverside, and Orange Counties. The river drains between the Chino Hills and the rugged Santa Ana Mountains, through the narrow Santa Ana Canyon, southwest of the project site. It then emerges from the canyon and flows through the coastal plain to empty into the Pacific Ocean.

The Federal Emergency Management Agency (FEMA) defines a floodplain as, "any land area susceptible to being inundated by flood waters from any source," this includes areas around a stream or river that frequently flood during heavy rain. The 100-year floodplain is the area around the streams and rivers that will be under water whenever the 100-year storm occurs. In

hydrologic terms, the National Oceanic and Atmospheric Administration defines a floodway is "the channel of a river or stream and those parts of the flood plains adjoining the channel, which are reasonably required to carry and discharge the floodwater or flood flow of any river or stream." The principal floodplain within the project area is associated with the Santa Ana River and its tributaries. (**Figure 5.4-1, FEMA Floodplains**)

5.4.2 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Thresholds of Significance

Western Municipal Water District (WMWD) has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, WMWD's "Environmental Checklist" for the proposed project (see Appendix A of this document) indicates that impacts related to floodplains may be considered potentially significant if the project would:

- expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or place within a 100-year flood hazard area structures which would impede or redirect flood flows.

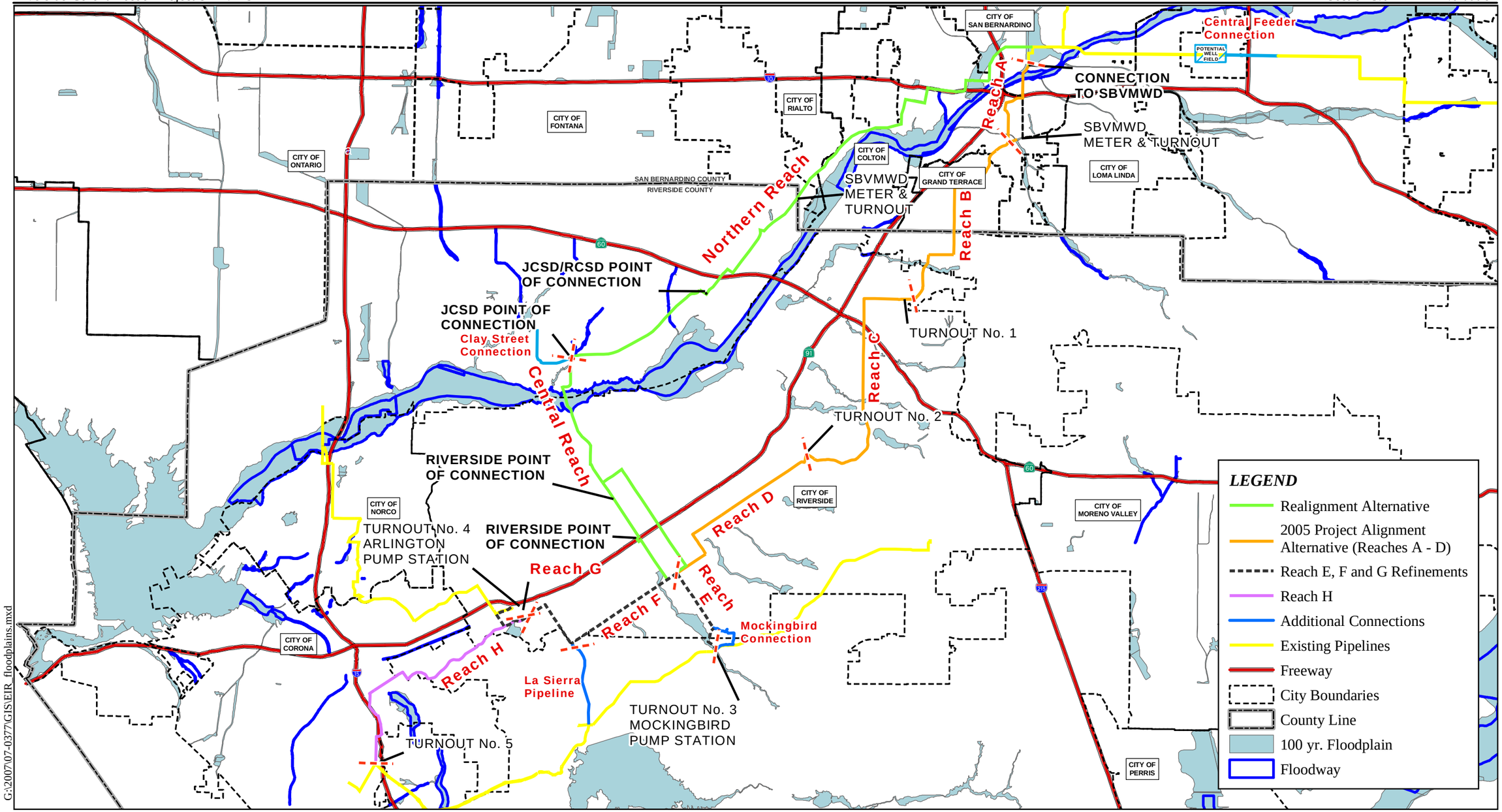
Related Regulations

Executive Order 11988

Executive Order 11988 entitled "Floodplain Management" dated May 24, 1977, directs federal agencies to enhance floodplain values, to avoid development in floodplains whenever there is a practicable alternative, and to avoid to the extent possible adverse impacts associated with occupancy or modification of floodplains.

Design Considerations/Avoidance

Segments of the 2005 Project Alignment Alternative, the Realignment Alternative, and the Realignment Alternative with Additional Connections (Preferred Alternative) that extend across the Santa Ana River and other watered areas are planned to include jack and boring underneath the waterways where feasible. The location where boring techniques will be utilized for construction of the 2005 Project Alignment Alternative are described in Section 3.0 (Project Alternatives) of this SEIR/EIS and the location where jack and bore techniques will be used in the two Realignment Alternatives are listed in **Table 3.0-C, Summary of Major Pipeline Crossings North to South**. This would avoid impacts to the floodways and associated floodplains.



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Source: FEMA DFIRM, 2008

Figure 5.4-1
FEMA Floodplains

Potential Significant Impacts/Environmental Consequences

Threshold*: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or place within a 100-year flood hazard area structures which would impede or redirect flood flows.*

2005 Project Alignment Alternative

Reach A of the 2005 Project Alignment encroaches into the 100-year floodplain where it crosses the Santa Ana River. The Santa Ana River crossing would begin near a point north of the Santa Ana River, near the intersection of Warm Creek Bypass maintenance road and the City of Riverside's, Rice-Thorne Pipeline, in the City of San Bernardino and would extend southerly across the Santa Ana Riverbed. Although micro-tunneling construction techniques have been identified for this crossing; due to the preliminary nature of the 2005 Project Alignment, geologic conditions under the Santa Ana River are not known in detail for the proposed crossing location in Reach A. Should micro-tunneling techniques become infeasible due to geologic conditions under the Santa Ana River; open trench construction methods would be used for this Reach at the Santa Ana River crossing location. The Reach A pipeline and potentially the related bore pits would be within the floodway at this location. Use of boring techniques to cross under the Santa Ana River will avoid construction-related impacts upon the floodways and 100-year floodplain. If open trench technique is used due to geologic conditions, the trenches will temporarily impact the floodway and floodplain and will be restored to its original condition following pipeline construction. This temporary impact will be less than significant.

Reach B of the 2005 Project Alignment crosses under Spring Brook Wash and its associated 100-year floodplain where the alignment crosses the Spring Brook drainage along the Gage Canal siphon south of Spring Street in the City of Riverside (FEMA Map No. 06065C0065G). At this location, boring techniques will be utilized to avoid impacts to this drainage.

That portion of Reach C of the 2005 Project Alignment located within Chicago Avenue in the City of Riverside crosses three drainages with identified 100-year floodplains. These drainages are located south of Massachusetts Avenue (University Wash), north of Prince Albert Drive (Box Springs Wash) and north of Central Avenue (Tequesquite Arroyo) (FEMA Map No. 06065C0726G and FEMA Map No. 06065C0728G). Open trench construction is planned for these portions of Reach C. However, although the trenches will temporarily impact the floodplains, they will be restored to their original conditions following pipeline construction. These temporary impacts will be less than significant.

Reach D of the 2005 Project Alignment is not located within proximity to designated floodways or floodplains. Therefore, construction of this reach will have no floodplain-related impacts.

A small portion of the southern section of Reach E of the 2005 Project Alignment within Firethorn Avenue crosses the 100-year floodplain for Mockingbird Canyon Wash south of where the wash crosses under Van Buren Boulevard. That portion of Reach E located within Van Buren Boulevard north of Mockingbird Canyon Road parallels, but is outside of, the Mockingbird

Canyon Wash floodplain (FEMA Map No. 06065C0720G).Open trench construction is planned for these portions of Reach E. However, although the trenches will temporarily impact the floodplains, they will be restored to their original conditions following pipeline construction. These temporary impacts will be less than significant.

Reaches F and G of the 2005 Project Alignment are not located within proximity to designated floodways or floodplains. Therefore, construction of these reaches will have no floodplain-related impacts.

Additionally, although not located within a 100-year floodplain, a portion of Reach H located within Indiana Avenue between Fillmore Street and Pierce Street is immediately north of an identified 100-year floodplain (FEMA Map No. 06065C0715H); thus, construction of Reach H will not impact floodplains or floodways.

Where construction of the 2005 Project Alignment Alternative utilizes micro-tunneling/boring techniques to cross identified floodways and 100-year floodplains (Reaches A and B), excavation and use of the bore pits would be temporary and the bore pit sites would be restored to their original condition immediately following construction of the pipeline. Use of boring techniques for portions of this alternative will avoid construction-related impacts upon floodways and/or 100-year floodplains.

Where open trench construction techniques are utilized, the trenches will temporarily impact the above-described floodplains, all of which will be restored to their original condition following pipeline construction. This temporary impact will be less than significant.

The proposed 2005 Project Alignment Alternative pipeline will not add any structures or fill to the floodplain that will increase the 100-year water surface elevations. Implementation of Reach A of the 2005 Project Alignment Alternative will not raise the existing base flood elevations, and will not result in any significant change in flood risks or damage. No long-term effects from the construction or operation of these facilities are anticipated. Therefore, this alternative will not expose people or structures to a significant risk of loss, injury or death involving flooding and will not place structures within a 100-year flood hazard area (100-year floodplain) which would impede or redirect flood flows.

Realignment Alternative

The Realignment Alternative's Northern Reach pipeline crosses or is in close proximity to the 100-year flood plain in four locations as discussed in the following paragraphs.

A portion of the Northern Reach pipeline is located within the 100-year floodplain associated with Warm Creek where the pipeline crosses Warm Creek within Fairway Drive in the City of Colton. Boring techniques will be used to construct the pipeline under Warm Creek. The bore pits and the proposed pipeline for this crossing are located within the floodway at this location, as are the portions of the pipeline within Fairway Drive, both east and west of Warm Creek. (FEMA Map No. 06071C8683H). Use of boring techniques to cross under Warm Creek will avoid construction-related impacts upon the floodways and 100-year floodplain. If the open

trench technique is used due to geologic conditions, the trenches will temporarily impact the floodway and floodplain and will be restored to its original condition following pipeline construction. This temporary impact will be less than significant.

A portion of the Northern Reach located within Agua Mansa Road west of Rancho Avenue and east of Riverside Avenue within the City of Colton is located along the edge of the 100-year floodplain associated with the Santa Ana River (FEMA Map No. 06071C8687H and FEMA Map No. 06071C8686H). This segment of the pipeline is located outside of the Santa Ana River floodway and its construction and operation will not impact this floodway. Open trench construction is planned for a segment of the Northern Reach. However, the trench will only temporarily impact the edge of the floodplain and the trench will be restored to its original condition following pipeline construction. This temporary impact will be less than significant.

The portion of the Northern Reach pipeline within Limonite Avenue in unincorporated Riverside County crosses the Sunnyslope channel just east of Pacific Avenue. This flood control facility is identified as a floodway (FEMA Map No. 06065C706G). Boring techniques will be used to construct the under the channel and avoid potential impacts thereto.

The Northern Reach pipeline within Limonite Avenue east of Clay Street and the Realignment Alternative's Central Reach pipeline in Clay Street south of Limonite Avenue are adjacent to the drainage identified by FEMA as the "1001 Ranch Drain West Tributary." North of Limonite Avenue, this drainage is identified as floodway and adjacent 100-year floodplain, while west of Clay Street the drainage is identified as only having a 100-year floodplain. The 100-year discharge at this location is contained within a culvert under Limonite Avenue and Clay Street (FEMA Map No. 06065C702G). Construction of this portion of the Northern Reach will be located within the Limonite Avenue and Clay Street rights-of-way and outside of the identified floodway and floodplain. Therefore, construction of these portions of the Northern and Central Reaches will have no floodplain-related impacts.

The Central Reach crosses under the Santa Ana River near Van Buren Boulevard. At this location, boring techniques will be utilized to construct the proposed pipeline and avoid impacts at this location. According to the Flood Insurance Rate Map (FIRM) for this area (FEMA Map No. 06065C0705G), the bore pits and the proposed pipeline for this crossing, including the pipeline along the north side of Van Buren Boulevard are located within the Santa Ana River floodway. Use of boring techniques to cross under the Santa Ana River will avoid construction-related impacts upon the floodways and 100-year floodplain, although the construction and use of the bore pits will temporarily impact the floodway and floodplain and will be restored to its original condition following pipeline construction. This temporary impact will be less than significant. Use of open trench construction for the pipeline along the north side of Van Buren Boulevard will temporarily impact the floodplains, however, the trench will be restored to its original condition following pipeline construction. This temporary impact will be less than significant.

In addition to the Northern and Central Reaches, the Realignment Alternative includes refinements for Reaches E, F, and G, and the original alignment of Reach H from the 2005 Project Alignment. The potential floodplain impacts associated with Reach E and Reach H are

discussed above as part of the 2005 Project Alignment Alternative discussion. That analysis is also applicable to the potential impacts related to those reaches as part of the Realignment Alternative.

Where the Realignment Alternative utilizes boring techniques for construction to cross identified floodways and 100-year floodplains, the excavation and use of the bore pits would be temporary and the bore pit sites would be restored to their original condition immediately following pipeline construction. Use of boring techniques for the above-described portions of the Northern and Central Reaches, this alternative will avoid construction-related impacts upon floodways and 100-year floodplains. Where open trench construction techniques are utilized, the trenches would temporarily impact the above-described floodplains*;* which would be restored to their original condition following pipeline construction. The proposed Realignment Alternative's pipeline will not add any structures or fill to the floodplain that will increase the 100-year water surface elevation. Implementation of the Realignment Alternative will not raise the existing base flood elevation and will not result in any significant change in flood risks or damage. No long-term effects from the construction or operation of the Realignment Alternative facilities are anticipated. Therefore, the Realignment Alternative will not expose people or structures to a significant risk of loss, injury or death involving flooding and will not place structures within a 100-year flood hazard area (100-year floodplain) which would impede or redirect flood flows.

Realignment Alternative with Additional Connections (Preferred Alternative)

The analysis of the potential floodplain-related impacts of the Realignment Alternative with Additional Connections (Preferred Alternative) is the same as that described above for the Realignment Alternative. In addition to the facilities described in that analysis, the proposed Mockingbird Connection will avoid the small encroachment into a 100-year floodplain of that portion of Reach E within Firethorn Avenue. However, the Mockingbird Connection will cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station, which is located within the mapped 100-year floodplain for Mockingbird Canyon Wash (FEMA Map No. 06065C0720G). Micro-tunneling or other boring techniques will be used to install that portion of the Mockingbird Connection that crosses under Van Buren Boulevard. Regarding the Mockingbird Connection, the excavation and use of the bore pits would be temporary and the bore pit sites would be restored to their original condition immediately following pipeline construction. Use of boring techniques for portions of this alternative will avoid construction-related impacts upon floodways and/or 100-year floodplains.

Implementation of the Realignment Alternative with Additional Connections (Preferred Alternative) will not raise the existing base flood elevation, and will not result in any significant change in flood risks or damage. No long-term effects from the construction or operation of these facilities are anticipated. Therefore, the Realignment Alternative with Additional Connections will not expose people or structures to a significant risk of loss, injury or death involving flooding and will not place structures within a 100-year flood hazard area (100-year floodplain) which would impede or redirect flood flows.

Realignment Alternatives Proposed Mitigation Measures/Minimization

Since there are impacts to floodplains are less than significant, no mitigation is required.

Realignment Alternatives Determination of Significance under CEQA

None of the alternatives analyzed will expose people or structures to a significant risk of loss, injury or death involving flooding and will not place structures within a 100-year flood hazard area (100-year floodplain) which would impede or redirect flood flows. Therefore, there will be no significant impacts related to floodplains.

5.4.3 No Action/Project Alternative

Under the No Action/Project Alternative, none of the proposed pipelines and related facilities will be constructed. Local drainage within the project area will remain unchanged. Therefore, this alternative will not expose people or structures to a significant risk of loss, injury or death involving flooding and will not place structures within a 100-year flood hazard area (100-year floodplain) which would impede or redirect flood flows.

5.5 INDIAN TRUST LANDS

Indian Trust Lands are areas for which the United States holds title in trust for the benefit of a federally recognized American Indian tribe (tribal trust land) or for an individual American Indian (individual trust land). The USBR is a water management agency with numerous programs, initiatives, and activities, to help the Western States, Native American Tribes, and others meet new water needs and balance the multitude of competing uses of water in the West. The Bureau of Reclamations' (BOR) mission is to assist in meeting the increasing water demands of the West while protecting the environment and the public's investment in these structures through water delivery obligations, water conservation, water recycling and reuse, and developing partnerships with our customers, states, and Indian Tribes.[4] At its nearest point, the project is located approximately three linear miles from the closest Tribal Land identified by the Bureau of Land Management. Additional Tribal Lands are located approximately 22 miles to the east of the project site. The San Bernardino Basin is adjudicated and no tribal water rights are held under the judgment.[5]

Therefore, since the project is not located on land for which the United States holds title in trust for the benefit of an American Indian tribe, and no tribal water rights are held in the basin that will be utilized for conjunctive use, the project will have no effect on Indian Trust Land or water rights.

[4] Accessed at http://www.epa.gov/region09/nepa/bru-rec.html on 12/4/09.
[5] Annual Report of the Western-San Bernardino Watermaster for Calendar Year 2002.

5.6 SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. SDWA authorizes the United States Environmental Protection Agency (US EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. US EPA, states, and water systems then work together to make sure that these standards are met. Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach ensures the quality of drinking water by protecting it from source to tap. SDWA applies to every public water system in the United States.[6] The responsibility for making sure these public water systems provide safe drinking water is divided among U.S. EPA, states, tribes, water systems, and the public. SDWA provides a framework in which these parties work together to protect this valuable resource. U.S. EPA sets national standards for drinking water based on sound science to protect against health risks, considering available technology and costs. The National Primary Drinking Water Regulations set enforceable maximum contaminant levels for particular contaminants in drinking water or requires ways to treat water to remove contaminants. Each standard also includes requirements for water systems to test for contaminants in the water to make sure standards are achieved. States, or U.S. EPA acting as a primacy agent, make sure water systems test for contaminants, review plans for water system improvements, conduct on-site inspections and sanitary surveys, provide training and technical assistance, and take action against water systems not meeting standards.

To ensure that drinking water is safe, SDWA sets up multiple barriers against pollution. These barriers include: source water protection, treatment, distribution system integrity, and public information. Public water systems are responsible for ensuring that contaminants in tap water do not exceed the standards. Water systems treat the water, and must test their water frequently for specified contaminants and report the results to states. If a water system is not meeting these standards, it is the water supplier's responsibility to notify its customers. Many water suppliers now are also required to prepare annual reports for their customers.[7] The City of San Bernardino is subject to such EPA SDWA requirements with respect to the Newmark contamination plume, therefore, the operation of the project is very important with respect to groundwater quality in the Basin Area.

Section 4.7, Groundwater Quality, includes an analytical discussion on potential groundwater-related issues associated with the project site. Five pollution plumes have been identified within the San Bernardino Groundwater Basin and eleven pollution plumes within the Chino Groundwater Basin; these pollution plumes are detailed in Section 4.7. The section concludes

[6] Accessed at http://www.nps.gov/ncrc/programs/rtca/nri/states/ca2.html on 12/3/09.
[7] Accessed at http://www.epa.gov/ogwdw000/sdwa/pdfs/fs_30ann_sdwa_web.pdf on 12/3/09.

that impacts related to groundwater quality are less than significant because: a) the quality of imported water from the State Water Project remains of equal or better quality than that of the existing San Bernardino Groundwater Basin Area water quality; b) a 2009 hydrologic analysis found that the project would not have a significant impact on groundwater quality; c) the potential impacts that new well sites might have on the environment will be addressed through normal well permitting procedures and subsequent CEQA compliance; d) WMWD's extraction from the Chino Basin would be consistent with the provisions of the Chino Basin Watermaster's Optimum Basin Management Program and in accordance with the analysis contained within the *Optimum Basin Management Program, Chino Basin Dry-Year Yield Program Expansion, Project Development Report, Volume I*; and e) mitigation measure MM GWQ 1 requires operating strategies to be tested and an operating plan to be developed that defines parameters of replenishment and extraction, while MM GWQ 2 requires project operation modifications (including mitigation measures) to reduce impacts if MM GWQ 1's modeling suggests that the replenishment and pumping regime of the project would result in significant impacts.

Therefore, with adherence to existing regulations and the mitigation measures detailed in Section 4.7, the project's water system will meet the requirements of the SWDA.

5.7 ENVIRONMENTAL JUSTICE

An evaluation of the potential effects upon environmental justice due to the relocation of the 2005 Project Alignment Project is discussed in this section pursuant to Executive Order 12898.

In addition to the 2005 Certified PEIR (2005 PEIR) and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Council on Environmental Quality, *Environmental Justice, Guidance Under the National Environmental Policy Act*, December 10, 1997. (Available at http://www.epa.gov/compliance/resources/policies/ej/index.html, accessed on November 25, 2009.) (CEQ 1997)
- Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, February 11, 1994. (Available at www.epa.gov/fedreg/eo/eo12898.pdf, accessed on November 20, 2009.)
- U.S Census Bureau, *Poverty Thresholds for 2008 by Size of Family and Number of Related Children Under 18 Years.* (Available at http://www.census.gov/hhes/www/poverty/threshld.html, accessed on November 24, 2009.)

5.7.1 Setting/Affected Environment

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low Income Population (1994), includes the following agency responsibilities in regard to addressing environmental justice in minority and low income populations:

> To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands. (Section 1-101)

The specific populations identified under EO 12898 are examined here along with the potential of effects on these populations from construction and operation of the proposed project. Minorities are defined as individuals who are members of the following population groups: Native American or Alaska Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. To classify as a minority population, an area must have a population of these groups that exceeds 50 percent of the total population, or the minority population percentage of the affected area should be meaningfully greater than the minority population percentage in the general population or appropriate unit of geographical analysis (CEQ 1997).

The Council on Environmental Quality (CEQ) guidance recommends that low-income populations in an affected area be identified using data on income and poverty from the U.S. Census Bureau (CEQ 1997). Low-income populations are groups with an annual income below the poverty threshold, which was s $22,025 for a family of four for calendar year 2008.

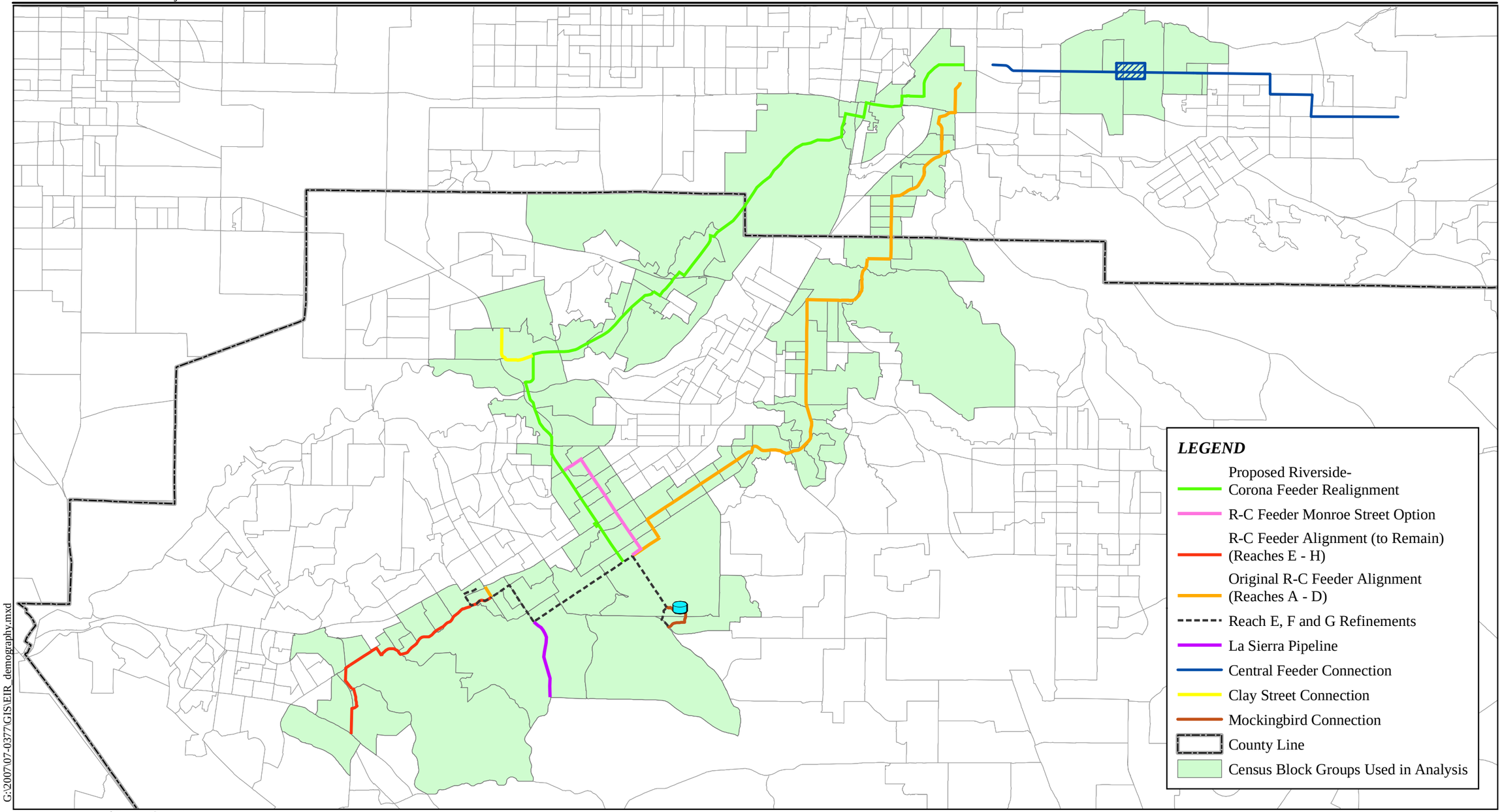
Methods and Assumptions

Demographic data from the U.S. Census Bureau 2000 census was collected to characterize the minority populations that are adjacent to the 2005 Project Alignment and the Project Alternatives. The low-income data was collected from the U.S. Census Bureau for the 2009 fiscal year and is displayed as the total number of persons below the moderate income threshold. Census data are compiled at different levels based on geographic location ranging from individual states, counties, census tracts, block groups, and blocks. For the analysis of the 2005 Project Alignment and the Project Alternatives, block group data was used to determine the minority and low-income populations, and is shown in **Figure 5.7-1, Census Block Groups**. The data presented in **Table 5.7-A**, below, shows the overall composition and makeup of both minority and non-minority populations, and low-income populations for the affected counties, as well as statewide and national populations.

Table 5.7-A
County, State, and National Population and Low-Income Distributions

Location	Total Population	White (percent)	Black (percent)	American Indian/ Alaska Native (percent)	Asian (percent)	Native Hawaiian/ Pacific Islander (percent)	Hispanic or Latino (percent)	Low-Income (percent)
San Bernardino Co.	1,709,434	58.9	9.1	1.2	4.7	0.3	39.2	43.12
Riverside Co.	1,545,387	65.6	6.2	1.2	3.7	0.3	36.2	41.53
California	33,871,648	59.5	6.7	1.0	10.9	0.3	32.4	43.16
U.S.	281,180,438	75.1	12.2	0.8	3.6	< 0.1	12.5	41.80

Note: Percentage values do not equal 100 % of the population due to multi-race reporting.



Sources: County of Riverside, 2008; ESRI, 2008

Figure 5.7-1
Census Block Groups

5.7.2 Potential Significant Impacts/Environmental Consequences

2005 Project Alignment Alternative

Table 5.7-B shows the population and low-income distribution for the 2005 Project Alignment. Under the 2005 Project Alignment Alternative, minority and low-income populations are located in proximity to these facilities. All of the minority population percentages are below the 50 percent threshold, as defined in the Guidance for EO 12898 (CEQ 1997). The low-income population percentage is lower than the averages from the county, state, and national data. Therefore, no disproportionately high or adverse impacts are anticipated to minority or low-income populations. Construction activities may cause temporary aesthetic, air quality, water quality, noise, and transportation impacts to the general population. However, after implementation of the mitigation measures, avoidance, and minimization approaches identified in Section 4.0 of this SEIR/EIS, short-term impacts to aesthetics, water quality, noise, and transportation will be reduced to less than significant levels. Short-term beneficial impacts from the project may include an increase in employment opportunities and/or supplemental income through job creation during the construction process.

Table 5.7-B
2005 Project Alignment Alternative
Population and Low-Income Distributions

Population and Low-Income Distribution	Percentage
White	60.5
Black	7.8
American Indian/Alaska Native	0.9
Asian	6.5
Native Hawaiian/Pacific Islander	0.3
Hispanic or Latino	35.9
Low-Income	34.7

Note: Percentage values do not equal 100 % of the population due to multi-race reporting.

Realignment Alternative

Table 5.7-C shows the population and low-income distribution for the Realignment Alternative. Under the Realignment Alternative, minority and low-income populations are located in proximity to these facilities. All of the minority population percentages are below the 50 percent threshold as defined in the Guidance for EO 12898 (CEQ 1997). The low-income population is not substantially different from the county, state, or national data. Therefore, no disproportionately high and adverse impacts are anticipated to minority or low-income populations. Construction activities may cause temporary aesthetic, air quality, water quality, noise, and transportation impacts to the general population. However, after the mitigation measures, avoidance, and minimization approaches identified In Section 4.0 of this SEIR/EIS are implemented, short-term impacts to aesthetics, water quality, noise, and transportation will be reduced to less than significant levels. Short-term beneficial impacts from the project may include an increase in employment opportunities or supplemental income through job creation during the construction process.

Table 5.7-C
Realignment Alternative Population and Low-Income Distributions

Population and Low-Income Distribution	Percentage
White	57.4
Black	6.5
American Indian/Alaska Native	1.4
Asian	3.1
Native Hawaiian/Pacific Islander	0.3
Hispanic or Latino	47.7
Low-Income	47.2

Note: Percentage values do not equal 100 % of the population due to multi-race reporting.

Realignment Alternative with Additional Connections (Preferred Alternative)

Table 5.7-D shows the population and low-income distribution for the Realignment Alternative with Additional Connections. Under the Realignment Alternative with Additional Connections, minority and low-income populations are located in proximity to these facilities. All of the minority population percentages are below the 50 percent threshold as defined in the Guidance for EO 12898 (CEQ 1997). The low-income population percentages are similar to the county, state, or national data. Therefore, no disproportionately high or adverse impacts are anticipated to minority or low-income populations. Construction activities may cause temporary aesthetic, air quality, water quality, noise, and transportation impacts to the general population. However, after implementation of the mitigation measures, avoidance, and minimization approaches identified in Section 4.0 of this SEIR/EIS, short-term impacts to aesthetics, water quality, noise, and transportation will be reduced to less than significant levels. Short-term beneficial impacts from

the project may include an increase in employment opportunities and/or supplemental income through job creation during the construction process.

Table 5.7-D
Realignment Alternative with Additional Connections Population and Low-Income Distributions

Population and Low-Income Distribution	Percentage
White	59.5
Black	6.4
American Indian/Alaska Native	1.2
Asian	4.0
Native Hawaiian/Pacific Islander	0.3
Hispanic or Latino	43.7
Low-Income	42.5

Note: Percentage values do not equal 100 % of the population due to multi-race reporting.

No Action Alternative

Under the No Action Alternative, no physical changes to the environment would occur. The proposed facilities would not be constructed, and existing WMWD facilities and sources of water would continue to be operated as under current conditions. Potential effects related to environmental justice would be avoided.

5.8 WILD AND SCENIC RIVERS ACT

The passage of Public Law 90-542 (the Wild and Scenic Rivers Act of 1968) by Congress called for the identification of potential wild, scenic, and recreational river areas within the nation. In partial fulfillment of Section 5(d), National Park Service maintains the Nationwide Rivers Inventory as a national listing of potentially eligible river segments. A river segment may be listed on the National Rivers Inventory if it is free-flowing and has one or more "outstandingly remarkable values."[8] The project alternatives cross the Santa Ana River, however, the four Santa Ana River segments listed on the United States Department of Interior National Rivers Inventory, are located in the mountainous region to the northeast of the project and are not in the project vicinity.[9]

Therefore, because the project is not located on or near a body of water listed in the United States Department of the Interior National Rivers Inventory, the Wild and Scenic Rivers Act is not applicable.

[8] http://www.ncrc.nps.gov/rtca/nri/hist.html
[9] http://www.nps.gov/ncrc/programs/rtca/nri/states/ca2.html

6.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EVALUATION

6.1 DETERMINING SIGNIFICANCE UNDER CEQA

Section 9112 of the Omnibus Public Land Management Act of 2009 (Public Law 111-11, 123 Stat. 991), signed by the President on March 30, 2009, authorized the Secretary of the Interior, in cooperation with Western Municipal Water District (WMWD), to participate in the planning, design, and construction of the RCF project. This authority has been delegated to the U.S. Bureau of Reclamation (USBR). Therefore, the RCF project is subject to federal as well as and state environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The USBR is the Lead Agency under NEPA for the EIS, while WMWD is the Lead Agency for the SEIR/EIS under CEQA.

One of the differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Study (EIS) or some lower level of environmental documentation will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." (42 U.S.C. sec 4332(C)) The determination of significance is based on the context and intensity of the impact (40.CFR sec 1508.27). Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, requires the CEQA lead agency (WMWD) to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report (EIR) must be prepared. [Public Resources Code, section 21080(d)]. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. (CEQA Guidelines, section 15126.2) In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR (CEQA Guidelines, section 15065). There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA.

6.2 DISCUSSION OF SIGNIFICANCE OF IMPACTS

The scope of this SEIR/EIS covers the issues of Aesthetics/ Visual, Air Quality/Climate Change, Biological Environment, Cultural Resources/Paleontology, Energy, Groundwater Levels, Groundwater Quality, Hazards and Hazardous Waste/Materials, Land Use, Noise, Stormwater/Water Quality, Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access. An analysis of each project alternative was conducted to determine if there would be an impact related to each of these environmental issues. This review included a determination as to whether an impact occurring from the implementation of an

alternative would be rated as significant under CEQA. The following discussion summarizes the significance of the temporary, long-term, and cumulative environmental impacts of the RCF project alternatives under CEQA, based on the full analysis provided in Section 4.0 of this SEIR/EIS.

6.3 SIGNIFICANCE OF IMPACTS UNDER CEQA

6.3.1 No Action/Project Alternative

Aesthetics/ Visual: No effect.

Air Quality/Climate Change: No effect.

Biological Environment: No effect.

Cultural Resources/Paleontology: No effect.

Energy: No effect.

Groundwater Levels: No effect.

Groundwater Quality: No effect.

Hazards and Hazardous Waste/Materials: No effect.

Land Use: No effect.

Noise: No effect.

Stormwater/Water Quality: No effect.

Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access: No effect.

6.3.2 2005 Project Alignment Alternative

Aesthetics/ Visual: This alternative has the potential to result in the loss or significant damage to existing Designed, Vernacular Landscapes, and/or natural riparian vegetation that function as scenic resources. However, with the implementation of mitigation measures set forth in Section 4.1 (Aesthetics/Visual) of this SEIR/EIS, which are designed to evaluate and replace existing trees and landscaping, as appropriate, potential significant scenic/aesthetic impacts due to the loss of mature trees and landscaping will be reduced to **less than significant levels**.

Air Quality/Climate Change: The 2005 Project Alignment Alternative is consistent with the Air Quality Management Plan (AQMP) and thus, **less than significant** without mitigation.

The 2005 Project Alignment Alternative would have **significant** short-term air impacts during construction due to the scale of the 2005 Project Alignment (length, pipe sizes, and necessary construction techniques) even with the implementation of mitigation measures set forth in Section 4.2 (Air Quality/Climate Change) of this SEIR/EIS.

The 2005 Project Alignment would not result in a cumulatively considerable long-term impact related to criteria pollutants once the project is operational because the Alignment is a pipeline and few automobiles that produce the majority of such pollutants will be used during project operation. Long-term air quality impacts were considered **less than significant** without mitigation.

For purposes of the EIS, the Preferred Alternative was evaluated for conformity with the federal Clean Air Act and was found to have de minimus effects. The 2005 Project Alignment Alternative has lower construction emissions and less operational energy use than the Preferred Alternative, therefore this alternative would have **de minimus effects** also.

Although not originally evaluated in the 2005 PEIR, greenhouse gas (GHG) emissions were evaluated in this SEIR. Due to the short-term nature of construction and the relatively small quantity of construction-related CO_2 emissions, the resulting impacts on global climate change from construction are considered **less than significant**.

Long-term emissions of GHG were found to be consistent with the California Air Resources Board (CARB) scoping plan which results in **less than significant** impacts associated with that threshold.

The 2005 Project Alignment includes one pump station and up to 20 wells (only 5 operating at one time). The total CO_2 emissions for this alternative would not exceed the CARB and SCAQMD draft GHG thresholds for industrial projects resulting in **less than significant** GHG impacts.

Biological Environment: The majority of the 2005 Project Alignment Alternative facilities would be underground and would not have long-term impacts on biological resources. Temporary and cumulative impacts upon biological resources would be mitigated to **below the level of significance** through implementation of the mitigation measures set forth in Section 4.3 (Biological Environment) of this SEIR/EIS.

Cultural Resources/Paleontology: The 2005 Project Alignment Alternative would bisect, or lie within the immediate vicinity of a total of five historic sites. In addition, palm rows and citrus trees within the California Citrus State Historic Park and other streets in the City of Riverside Greenbelt area would be affected. The 2005 Project Alignment does not impact known archaeological resources, but the project area has a moderate likelihood of containing unknown archaeological resources and a low potential of containing fossil remains. However, with implementation of the mitigation measures set forth in Section 4.4 (Cultural Resources/Paleontology) of this SEIR/EIS, impacts to historical resources and to previously

unknown potentially-significant archaeological and paleontological resources would be less than significant. This alternative's cumulative cultural resources impact would be **less than significant**.

Energy: The level of consumption by the 2005 Project Alignment Alternative is small, substantially less than one (1) percent of total consumption in the two-county region. The implementation of MMs Air 5 and 6 will reduce the projected level of consumption of this alternative further. Neither the City of Riverside nor SCE commented on possible shortages in electricity supplies with respect to the proposed project during the NOP/NOI comment period. Based on the varied sources and level of power supplies available to SCE and City of Riverside, and WMWD's implementation of its IRWMP, it is anticipated that the estimated levels of consumption will result in a less than significant adverse effect on local and regional energy supplies and less than significant amounts of fossil fuels will be consumed. . Therefore, the 2005 Project Alignment Alternative will have **less than significant project-related or cumulative impacts** related to energy.

Groundwater Levels: Groundwater levels in the Basin Area will be at similar or slightly higher levels with the implementation of the 2005 Project Alignment Alternative than without the project. In other words, there is less of a change in Total Inflow minus Total Outflow generated by the project than with the No Project scenario. In general, lower storage conditions tend to reduce concerns about water levels being too high in the Area of Historic High Groundwater (AHHG) but cause pumping problems for wells located up-slope from the AHHG. High storage conditions have the opposite effect. Water agencies in the Basin Area have generally agreed on an approach whereby water levels in the forebay areas should be stabilized at acceptable elevations by management of recharge of local and imported water while water levels in the AHHG should be controlled to acceptable elevations by pumping, including, when necessary, pumping in excess of local water supply needs. The proposed project would help to implement that approach. The 2005 Project Alignment Alternative's direct and cumulative impacts related to groundwater levels would **not be significant**. No mitigation measures are necessary. However the implementation of the mitigation measures required for potentially significant water quality impacts will ensure that future impacts to groundwater levels are avoided. Therefore, with implementation of mitigation measure MM GWL 2 (Revised), impacts to groundwater levels (safe yield) from the 2005 Project Alignment Alternative would be **less than significant**.

Groundwater Quality: Direct project-related environmental effects to groundwater quality will be **less than significant** due to the quality of the water being used for recharge being similar or better than the quality of the receiving water. No mitigation measures are required.

Indirect project-related environmental effects to groundwater quality result through changes in the location and/or speed of migration of pollution plumes. Operation of 2005 Project Alignment Alternative could result in a small lateral movement of the Newmark and Muscoy plumes. Such differences in movement would cause five additional wells for a brief period of time to degrade to values greater than 5 µg/l of PCE, and 7 additional wells to improve in quality to less than 5 µg/l. Nevertheless, compliance with the mitigation measures set forth in Section 4.7 (Groundwater Quality) of this SEIR/EIS would reduce the potential impacts upon groundwater quality to **less than significant** levels.

Hazards and Hazardous Waste/Materials: The 2005 Project Alignment will pass across or will be within the vicinity of 26 hazardous materials sites under various regulatory statutes. Although no significant impacts related to the 26 sites are anticipated, common types of contamination could be encountered during construction of the 2005 Project Alignment resulting from leaking underground storage tanks (LUST), poor chemical handling, and accidental or intentional unauthorized chemical releases. However, these impacts would be reduced to **less than significant levels** through the implementation of the mitigation measures set forth in Section 4.8 (Hazards and Hazardous Waste/Materials) and through compliance with federal, state and local regulations governing the removal and transportation of hazardous soils.

Land Use: The 2005 Project Alignment will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. The 2005 Project Alignment facilities will not extend water service into areas not currently served by water purveyors within the project area, and therefore will not eliminate any existing impediments to growth associated with lack of water service within the local jurisdictions. This alternative will have **no effect** upon land use and therefore would have a less than considerable contribution to cumulative land use impacts.

Noise: Because the RCF Project is exempt from regulatory compliance in all of the affected jurisdictions, it was not analyzed in the 2005 PEIR. Implementation of the 2005 Project Alignment Alternative would result in similar noise impacts as those discussed below under the Realignment Alternatives which result in **less than significant** noise impacts.

Stormwater/Water Quality: Potential water quality impacts of construction activities were not analyzed within the 2005 PEIR other than to acknowledge that they would be minimized through compliance with established regulatory programs, requiring control of erosion and sedimentation at construction sites (e.g., NPDES, SWPPP). Through compliance with regulation, the 2005 Project Alignment Alternative's construction-related water quality impacts were determined to be **less than significant**.

Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access: The 2005 Project Alignment Alternative would result in potential temporary significant impacts to transportation services and sensitive uses due to construction-related traffic increases and due to disruptions in existing traffic patterns during construction within road rights-of-way. These project-related and cumulative impacts will be reduced to **less than significant** levels through compliance with the mitigation measures set forth in Section 4.12 (Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access) of this SEIR/EIS.

6.3.3 Realignment Alternative (Jackson Street or Monroe Street options)

Aesthetics/ Visual: The most sensitive aesthetic resource that may be impacted by this alternative is the Designed Landscaping along Victoria Avenue within the City of Riverside. This alternative will cross Victoria Avenue at its intersection with either Jackson Street or Monroe Street. Loss of the historic landscape along Victoria Avenue would be considered significant both aesthetically and historically. However, implementation of the mitigation

measures set forth in Section 4.1 (Aesthetics/Visual) of this SEIR/EIS will reduce potential impacts to **less than significant levels.** Following completion, all of the RCF pipelines will be located underground and therefore will have **no long-term or cumulative impact** upon the visual character or quality of the site and its surroundings.

Air Quality/Climate Change: Less than significant air impacts without mitigation due to consistency with the Air Quality Management Plan (AQMP).

The short-term construction emissions from the Realignment Alternative will exceed the applicable SCAQMD daily regional significance thresholds for NO_X and PM-10. Short-term construction will also exceed applicable LST thresholds for NO_X, PM-10 and PM-2.5. Therefore, the air quality impacts from construction of the Realignment Alternative are considered regionally and locally **significant.** Even though the short-term construction of the project is shown to be significant on a regional level, these impacts are temporary and will no longer exist once the project is operational.

The Realignment Alternative would not result in a cumulatively considerable long-term impact once the project is operational because the Alignment is a pipeline and few automobiles that produce such pollutants will be used during project operation. Long-term air quality impacts were considered **less than significant**.

For purposes of the EIS, the Preferred Alternative was evaluated for conformity with the federal Clean Air Act and was found to have de minimus effects. The Realignment Alternative has lower construction emissions than the Preferred Alternative, therefore this alternative would have **de minimus effects** also.

Although not originally evaluated in the 2005 PEIR, greenhouse gas (GHG) emissions were evaluated in this SEIR. Due to the short-term nature of construction and the relatively small quantity of construction-related CO_2 emissions, the resulting impacts on global climate change are considered **less than significant**. Long-term emissions of GHG were found to be consistent with the California Air Resources Board (CARB) scoping plan which results in **less than significant impacts** associated with that threshold. The Realignment Alternative includes two pump stations and up to 20 wells (only 5 operating at one time). The total CO_2 emissions for this alternative would not exceed the CARB and SCAQMD draft GHG thresholds for industrial projects resulting in **less than significant** GHG impacts.

Biological Environment: Based on the biological resource evaluations discussed in Section 4.3 (Biological Environment) of this SEIR/EIS and after implementation of the mitigation measures, avoidance, and minimization approaches identified set forth in that section are implemented, potential adverse impacts associated with candidate, sensitive, or special-status species; both plant and wildlife, as well as special-status communities/habitats, including wetlands, will be reduced to a **less than significant level**. After construction, the disturbed area would be returned to level soil conditions and be allowed to return to its natural state. Through implementation of the mitigation measures set forth in Section 4.3, this alternative's contribution to potential cumulative impacts to the biological environmental would be fully mitigated and the cumulative biological impacts would be **less than significant.** Due to the nature and location of the project (primarily underground), and mitigation established to avoid nesting birds, etc., potential adverse

impacts to the movement of native resident or migratory fish or wildlife species or corridors and nursery sites will be **less than significant**.

The project traverses both Riverside and San Bernardino counties. Riverside County has an adopted the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), San Bernardino County has not. The project does not conflict with the MSHCP although it does cross three criteria cells in the vicinity of the Santa Ana River. The project is also located within the Stephens' kangaroo rat (SKR) HCP in Riverside County, but is not located within a core reserve area. After mitigation, the project is consistent with both HCPs in Riverside County so impacts are **less than significant**.

Cultural Resources/Paleontology: The Realignment Alternative (Jackson Street or Monroe Street options) would bisect, or lie within the immediate vicinity of known historic sites. In addition, palm rows within San Bernardino County and palm rows and citrus trees within the City of Riverside would potentially be affected. This alternative will not impact known archaeological resources or disturb human remains, but the project area has a moderate likelihood of containing unknown archaeological resources and a moderate to high potential of containing fossil remains. However, with implementation of the mitigation measures set forth in Section 4.4 (Cultural Resources/Paleontology) of this SEIR/EIS, impacts to historical resources and to previously unknown potentially-significant archaeological and paleontological resources or human remains would be **less than significant**. This alternative's contribution to a cumulative cultural resources impact would be less than considerable, and the cumulative cultural resources impact would be **less than significant**.

Energy: The level of consumption by the Realignment Alternative (Jackson Street or Monroe Street options) is small, substantially less than one (1) percent of total consumption in the two-county region. Due to the electricity generated by the Sterling Hydroelectric Station, the electricity consumption from the Realignment Alternative is similar to the electricity consumption from the 2005 Project Alignment Alternative, with a difference of only an additional 226 MWh per year. The implementation of MM Air 5 and 6 will reduce the projected level of consumption of the Preferred Alternative further. Neither the City of Riverside nor SCE commented on possible shortages in electricity supplies with respect to the proposed project during the NOP/NOI comment period. Based on the varied sources and level of power supplies available to SCE and City of Riverside, and WMWD's implementation of its IRWMP, it is anticipated that the estimated levels of consumption will result in a less than significant adverse effect on local and regional energy supplies and energy The Realignment Alternative does not cause a substantial increase in energy consumed compared to the 2005 Project Alignment Alternative, regional use for similar purposes, or consumption in the region as a whole, therefore, it does not result in a substantial increase in the use of fossil fuels such as coal and natural gas which are used to produce the power; therefore the Realignment Alternative (Jackson Street or Monroe Street options) will have **less than significant project-related or cumulative impacts** related to energy.

Groundwater Levels: The Realignment Alternative is substantially the same as the 2005 Project Alignment Alternative with respect to groundwater recharge and extraction. Implementation of this alternative would have substantially the same **less than significant impacts** upon groundwater levels as those described above for the 2005 Project Alignment Alternative. In light

of the updated groundwater modeling prepared as part of this SEIR/EIS (Appendix F), it can be concluded that with implementation of mitigation measure MM GWL 2 (Revised) as described in Section 4.6, impacts to groundwater levels will be **less than significant**.

Groundwater Quality: The Realignment Alternative includes project-related extraction and recharge facilities which are substantially the same as the 2005 Project Alignment Alternative. Implementation of this alternative would have substantially the same **less than significant impacts** upon groundwater quality as those described above for the 2005 Project Alignment Alternative.

Hazards and Hazardous Waste/Materials: The Realignment Alternative (Jackson Street or Monroe Street options) will pass across or will be within the vicinity of approximately 160 hazardous materials sites under various regulatory statutes. Although no significant impacts related to these sites are anticipated, common types of contamination could be encountered during construction of the proposed project resulting from LUST, poor chemical handling, and accidental or intentional unauthorized chemical releases. However, these impacts would be reduced to **less than significant levels** through the implementation of the mitigation measures set forth in Section 4.8 (Hazards and Hazardous Waste/Materials) and through compliance with federal, state and local regulations governing the removal and transportation of hazardous soils.

A portion of the Northern Reach in unincorporated Riverside County and most of the Central Reach are located within proximity to Riverside Municipal Airport. However, construction-related impacts due to proximity to the airport would be reduced to **less than significant levels** through the implementation of the mitigation measures set forth in Section 4.8 and through compliance with FAA regulations.

Land Use: The Realignment Alternative (Jackson Street or Monroe Street options) will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. The Realignment Alternative (Jackson Street or Monroe Street options) facilities will not extend water service into areas not currently served by water purveyors within the project area, and therefore will not eliminate any existing impediments to growth due to lack of water service within the local jurisdictions. This alternative will have **no effects** upon land use and therefore would have a less than considerable contribution to cumulative land use impacts.

Noise: Implementation of the Realignment Alternative (Jackson Street or Monroe Street options) could result in temporary and intermittent construction-related noise levels that would exceed the applicable standards at nearby sensitive receptors. Although the project would create temporary noise, the project is exempt from regulatory compliance in all seven of the affected jurisdictions and because construction noise is temporary, it is considered **less than significant**. However, implementation of mitigation measures **MM Noise 1** through **MM Noise 3,** and **MM Trans 6** will help to minimize construction-related noise impacts upon sensitive receptors.

Impacts will come from construction noise only; ongoing operation of the proposed project will not result in adverse noise impacts. Although the design of the project proposes to use concrete

block structures to house pump stations which would reduce potential noise impacts adequately, **MM Noise 4** requires that whatever the construction of such housings, that noise attenuation is incorporated to ensure that operations of the Realignment Alternative will have **no long-term or cumulative noise impacts**.

Stormwater/Water Quality:
Construction of the RCF facilities could release substantial discharge during construction. If unmitigated, these temporary impacts to water quality associated with RCF project construction would be potentially significant**.** However, through compliance with the General Construction NPDES permit and implementation of mitigation measure MM Water Qual 1a – 1e, water quality standards and waste discharge requirements will not be violated, and water quality will not otherwise be degraded, by the proposed project and therefore, impacts are considered **less than significant.** Long-term and cumulative water quality impacts will be **less than significant**.

Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access: The Realignment Alternative (Jackson Street or Monroe Street options) would result in potential temporary significant impacts to transportation services and sensitive uses due to construction-related traffic increases and due to disruptions in existing traffic patterns during construction within road rights-of-way. These project-related and cumulative impacts will be reduced to **less than significant** levels through compliance with the mitigation measures set forth in Section 4.12 (Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access) of this SEIR/EIS.

6.3.4 Realignment Alternative with Additional Connections (Preferred Alternative)

Aesthetics/ Visual: The potential impacts of this alternative are substantially the same as those described above for the Realignment Alternative (Jackson Street or Monroe Street options). Following completion, all of the RCF pipelines will be located underground and therefore will have **no impact** upon the visual character or quality of the site and its surroundings. Potential visual impacts related to the Clay Street Connection's booster station and the Mockingbird Connection's reservoir and booster station will be subject to design considerations and mitigation measures that reduce their potential impact to **less than significant levels**.

Air Quality/Climate Change: Less than significant air impacts without mitigation due to consistency with the Air Quality Management Plan (AQMP) would result. Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same regionally and locally **significant** construction-related air quality impacts, **less than significant** long-term and cumulative air quality impacts as those described above for the Realignment Alternative (Jackson Street or Monroe Street options). However, it should be noted that the level of impact will be minimally greater (e.g., higher potential daily construction emissions) due to the addition of a reservoir, booster stations and wells as part of this alternative.

For purposes of the EIS, the Preferred Alternative was evaluated for conformity with the federal Clean Air Act and was found to have de minimus effects. The Realignment Alternative has lower

construction emissions than the Preferred Alternative, therefore this alternative would have **de minimus effects** also.

Although not originally evaluated in the 2005 PEIR, greenhouse gas (GHG) emissions were evaluated in this SEIR. Due to the short-term nature of construction and the relatively small quantity of construction-related CO_2 emissions, the resulting impacts on global climate change are considered **less than significant**. Long-term emissions of GHG were found to be consistent with the California Air Resources Board (CARB) scoping plan which results in **less than significant impacts** associated with that threshold. The Preferred Alternative includes four pump stations and up to 20 wells (only 5 operating at one time). The total CO_2 emissions for this alternative would exceed the CARB and SCAQMD draft GHG thresholds for industrial projects; although there are no thresholds for infrastructure projects of this nature. The exact reductions in energy consumption provided by the mitigation measures is not known so to be conservative GHG impacts are evaluated against the industrial threshold and considered **significant** and unavoidable.

Biological Environment: The Realignment Alternative with Additional Connections (Preferred Alternative) has the same potential biological impacts as the Realignment Alternative (Jackson Street or Monroe Street options) in locations where it is the same as the Realignment Alternative (Jackson Street or Monroe Street options) which result in **less than significant** impacts as described above and in Section 4.3. The Additional Connections portions of the Preferred Project result in additional impacts including the potential to adversely affect Stephens' kangaroo rats and coastal California gnatcatcher which have the potential to occur on or adjacent to the Mockingbird Connection and the La Sierra Pipeline Connection areas. With mitigation measures implemented, these potential impacts will be mitigated to **less than significant levels**.

Cultural Resources/Paleontology: Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same **less than significant** impacts to cultural resources, paleontological resources or human remains as those described above for the Realignment Alternative (Jackson Street or Monroe Street options). One archaeological site is known to exist near the Mockingbird Connection facilities, but it will not be adversely impacted by the project as described in Section 4.4 with **less than significant** effects resulting after mitigation.

Energy: The Realignment Alternative with Additional Facilities Preferred Alternative) includes the Sterling hydroelectric station, which will convert the potential energy of an elevated water supply to electricity. With incorporation of mitigation measures MM Energy 1, and MMs Air 5 and 6, hydroelectric energy will be generated at the Mockingbird and Clay Street pump stations, solar power will be produced, and efficient pumps are required. This generation of electricity by the project contributes to meeting the energy conservation goals of decreasing reliance on fossil fuels and increasing reliance on renewable energy sources. Additionally, the level of consumption by this alternative is small, substantially less than one (1) percent of total consumption in the two-county region. Neither the City of Riverside nor SCE commented on possible shortages in electricity supplies with respect to the proposed project during the NOP/NOI comment period. Based on the varied sources and level of power supplies available to SCE and City of Riverside, and WMWD's implementation of its IRWMP, it is anticipated that

the estimated levels of consumption will result in a **less than significant** adverse effect on local and regional energy supplies and fossil fuels..

Groundwater Levels: The results of recharge and extraction modeling show that the Realignment Alternative with Additional Connections will have a lower level of groundwater pumping and artificial recharge than that projected for the 2005 Project Alignment Alternative. As a result, the total changes in groundwater storage within the Basin Area will be less than previously projected. This alternative will have **no significant impacts** related to groundwater levels based upon groundwater modeling that analyzed project-related and cumulative impacts upon groundwater levels. However the mitigation measures required for potentially significant water quality impacts will ensure that future impacts to groundwater levels are avoided. Therefore, with implementation of mitigation measure MM GWL 2 (Revised) impacts to groundwater levels (safe yield) from the proposed project **would be less than significant**

Groundwater Quality: Direct project-related environmental effects to groundwater quality will be **less than significant** due to the quality of the water being used for recharge being similar or better than the quality of the receiving water. No mitigation measures are required.

A hydrologic analysis was completed to analyze the project-related and cumulative groundwater quality impacts of the Realignment Alternative with Additional Connections. The results of hydrologic modeling show that this alternative, will not adversely impact the contamination plumes within the Basin Area. This modeling also shows no change in the Norton and Redland-Crafton TCE plume areas as a result of project construction. Therefore, indirect groundwater quality impacts related to this alternative will be **less than significant** following implementation of the mitigation measures set forth in Section 4.7 (Groundwater Levels) of this SEIR/EIS.

Hazards and Hazardous Waste/Materials: Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same **less than significant impacts** related to hazards and hazardous waste/materials as those described above for the Realignment Alternative (Jackson Street or Monroe Street options). It is noted that in addition to the Central Reach, the Clay Street Connection of this alternative is also within proximity to the Riverside Airport.

Land Use: Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same effect on land use designations as those described above for the Realignment Alternative (Jackson Street or Monroe Street options) , which result in **no effect.**

Noise: Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same **less than significant impacts** construction-related noise impacts and **no long-term or cumulative noise impacts** as those described above for the Realignment Alternative (Jackson Street or Monroe Street options), with mitigation measures described in Section 4.10 implemented.

Stormwater/Water Quality: Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same **less than significant** stormwater/water quality impacts after mitigation as those described above for the Realignment Alternative (Jackson Street or Monroe Street options).

Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access: Because the Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options), implementation of this alternative would have substantially the same **less than significant** transportation and traffic-related impacts as those described above for the Realignment Alternative (Jackson Street or Monroe Street options).

6.4 MITIGATION MEASURES FOR SIGNIFICANT IMPACTS UNDER CEQA

As discussed above, a number of avoidance, minimization, and mitigation measures were developed to address the potential adverse impacts of the 2005 Project Alignment Alternative, the Realignment Alternative and the Realignment Alternative with Additional Connections. Most impacts can be reduced below a level of significance with mitigation while short-term air quality will still be significant and unavoidable after mitigation. Impacts associated with greenhouse gas emissions remain significant for the Preferred Alternative, as well. Section 1.0, Summary, and Section 4.0, Affected Environment, Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures provide the complete language of each avoidance, minimization, and mitigation measure applicable to these three alternatives, and provides the environmental mitigation measures that will be adopted by WMWD at the time it certifies the Final SEIR/EIS. Those measures are listed below by environmental topic.

- Aesthetics/ Visual: Mitigation Measures **MM Aes 1** through **MM Aes 6**
- Air Quality/Climate Change: Mitigation Measures **MM Air 1** through **3, MM Air 3a** and **4a,** and **MM Air 5** and **6** and implementation of local, state, and federal regulations
- Biological Environment: Mitigation Measures **MM Bio 1** through **MM Bio 24** and implementation of local, state, and federal regulations
- Cultural Resources/Paleontology: Mitigation Measures **MM Cult 1** through **MM Cult 13** and implementation of local, state, and federal regulations
- Energy: Mitigation Measure **MM Energy 1**
- Groundwater Levels: Mitigation Measures **MM GWL 2 (Revised)** and compliance with legal judgments and contractual requirements
- Groundwater Quality: Mitigation Measures **MM GWQ 2 Revised** and compliance with legal judgments and contractual requirements
- Hazards and Hazardous Waste/Materials: Mitigation Measures **MM Haz 1** through **MM Haz 10** and implementation of local, state, and federal regulations
- Land Use: No mitigation measures required

- Noise: Mitigation Measures **MM Noise 1** through **MM Noise 4** and **MM Trans 6** Stormwater/Water Quality: Mitigation Measure **MM Water Qual 1a** through **MM Water Qual 1e** and compliance with local, state, and federal regulations
- Traffic and Transportation/Pedestrian and Bicycle Facilities/Emergency Access: Mitigation Measures **MM Trans 1, 1a, 2, 2a** and **3** through **14.**

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines, Section 15126.6(e)(2), requires the identification of the environmentally superior alternative compared to the "proposed project." From a CEQA perspective, the "proposed project" is the Realignment Alternative with Additional Connections (Preferred Alternative). Of the alternatives evaluated herein, the No Action/Project Alternative is the environmentally superior alternative with respect to reducing impacts created by the proposed RCF project. The CEQA Guidelines also require the identification of another environmentally superior alternative if the No Action/Project Alternative is selected as the environmentally superior alternatives.

The 2005 Project Alignment Alternative would have slightly greater aesthetics/visual and historic resource impacts than the Realignment Alternative (Jackson Street or Monroe Street options) or Realignment Alternative with Additional Connections (Preferred Alternative) due to its greater impact upon Victoria Avenue (listed on the National Register) in the City of Riverside. Although determined to be less than significant with mitigation, the 2005 Project Alignment would also have slightly greater groundwater quality impacts than the Realignment Alternative with Additional Connections (Preferred Alternative), due to minor changes in the pollution plumes within the San Bernardino Groundwater Basin. The 2005 Alignment Alternative would have fewer potential impacts regarding the biological environment because it does not traverse areas with Delhi soils which could be potential Delhi Sands flower-loving fly habitat, however, all potential impacts can be avoided or mitigated. The 2005 Project Alignment Alternative is located further from the Riverside Airport, and therefore would present less than significant impacts related to airport proximity. However, because this alternative: does not have the ability to meet the broader project objectives of connecting to JCSD, the Chino Basin, and other regional water facilities that assist with conjunctive use management strategies; includes well locations and operations which have a greater chance of impacting groundwater quality than the proposed project; and has aesthetic impacts which could be greater; it is not considered the environmentally superior or preferred alternative.

The Realignment Alternative would have slightly lesser aesthetics/visual and historic resource impacts than the 2005 Project Alignment Alternative and the same as the Realignment Alternative with Additional Connections (Preferred Alternative) due to its lesser impact upon Victoria Avenue (listed on the National Register) in the City of Riverside. Although determined to be less than significant with mitigation, the Realignment Alternative would have slightly greater groundwater quality impacts than the Realignment Alternative with Additional Connections (Preferred Alternative), due to minor changes in the pollution plumes within the San Bernardino Groundwater Basin which are avoided in the Preferred Alternative with the option to use the proposed new well field located adjacent to the Central Feeder Connection. The Realignment Alternative would have the same potential impacts as the proposed

project/Preferred Alternative regarding the portion of the alignment where it traverses areas with Delhi soils which could be potential Delhi Sands flower-loving fly habitat, however, all potential impacts can be avoided or mitigated. The Realignment Alternative has lesser potential biological resource impacts associated with above-ground facilities (i.e., reservoir/tank and pump stations) than the proposed project. The Realignment Alternative and the Realignment Alternative with Additional Connections (Preferred Alternative) are located adjacent to the Riverside Airport, and therefore would present greater less than significant impacts related to airport proximity than the 2005 Project Alignment, but the same as each other. This alternative meets some aspects of the broader project objectives of connecting to JCSD, the Chino Basin, and other regional water facilities but not to the full extent that the proposed project does. Solely based on potential environmental impacts, the Realignment Alternative could be considered the environmentally superior. However, because potential impacts associated with the Realignment Alternative are basically the same as the proposed project and it includes well locations and operations which have a greater chance of impacting groundwater quality than the proposed project/Preferred Alternative, it is not considered the preferred alternative.

The Realignment Alternative with Additional Connections (Preferred Alternative) is substantially the same as the Realignment Alternative (Jackson Street or Monroe Street options); therefore these two alternatives would have substantially the same environmental impacts, except the Realignment Alternative with Additional Connections would have slightly greater (less than significant) aesthetic/visual, biological, and energy impacts due to the inclusion of additional reservoir, booster station and well facilities; but would reduce potential groundwater quality issues compared to either of the other two action alternatives. Therefore, because the Realignment Alternative with Additional Connections meets all project objectives; creates no additional potential significant adverse impacts which cannot be avoided or reduced to less than significant levels; and reduces potential impacts to groundwater quality, it is considered the Preferred Alternative.

Due to the fact that the 2005 Project Alignment Alternative will have greater aesthetics/visual and groundwater quality impacts than the Realignment Alternatives, it is not considered to the environmentally superior alternative. However, since the Realignment Alternative (Jackson Street or Monroe Street options) will have slightly fewer impacts than the Realignment Alternative with Additional Connections (Preferred Alternative), it is considered to be the most environmentally superior alternative.

6.6 CONSISTENCY WITH REGIONAL PLANS

California Environmental Quality Act, Section 15125(d), requires an Environmental Impact Report to discuss any inconsistencies between the proposed project and applicable general and regional plans. Consistencies and inconsistencies of the Riverside-Corona Feeder Project (2005 Project Alignment) with existing regional water plans were addressed in Section I-5 (pp. I-5-1 through I-5-2) of the 2005 Certified Program EIR (2005 PEIR) for the 2005 Project Alignment, which are hereby incorporated by reference.

A discussion of the proposed project's consistency with applicable city and county general plans is contained in Section 4.8 (Land Use and Planning) of this SEIR/EIS. Consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) is contained in Section 4.3 (Biological Resources) of this SEIR/EIS. The Air Quality Section of this SEIR/EIS (Section 4.2) discusses consistency with the applicable Air Quality Management Plan. The purpose of this section is to discuss the proposed project's consistency with applicable regional water plans.

In addition to the 2005 PEIR and its reference documents, and other reference documents, the following references were used in the preparation of this section of the SEIR/EIS:

- Upper Santa Ana Water Resources Association, *Upper Santa Ana River Watershed Integrated Regional Water Management Plan*, November 2007. (Available at San Bernardino Valley Municipal Water District.)
- Western Municipal Water District, *Updated Integrated Regional Water Management Plan Report*, May 2008. (Available at http://www.wmwd.com/irwmp-weump.htm, accessed on July 30, 2009.)

6.6.1 Summary of 2005 Certified Program EIR for Riverside-Corona Feeder Project

The 2005 PEIR reviewed the consistency of the Riverside-Corona Feeder Project (2005 Project Alignment) with the San Bernardino Valley Municipal Water District Regional Water Facilities Master Plan and California's Colorado River Water Use Plan (California 4.4 Plan). The following discussion is a summary of the 2005 PEIR as it relates to project consistency with those documents.

San Bernardino Valley Municipal Water District Regional Water Facilities Master Plan

As part of the Riverside-Corona Feeder (RCF) Project, WMWD is proposing to recharge water purchased from the Metropolitan Water District into the San Bernardino Basin Area and then withdraw it as needed. The water would be extracted from the San Bernardino Basin Area via 20 new or existing wells and would be delivered into the RCF Project. This pipeline would bring water to areas located south and west of the San Bernardino Basin Area.

The RCF Project is a part of a larger conjunctive use and management plan for the San Bernardino Basin Area which is outlined in the San Bernardino Valley Municipal Water District

(SBVMWD) Regional Water Facilities Master Plan. As presented below, the 2005 Project Alignment is also consistent with the SBVMWD Master Plan water resource management objectives and strategies regarding water supply reliability, controlling high ground water, optimizing the use of imported water, and groundwater management.

Improve Water Supply Reliability

Availability of water in the region is subject to the impacts of drought, contamination, natural disasters, political and institutional differences, and regulatory actions. Coordinated use of multiple sources would increase the reliability of the water supply system.

Control High Groundwater

The San Bernardino Basin provides an excellent opportunity to increase the capture of local water, as well as optimize the use of imported water through increased replenishment in the groundwater basin. However, to take full advantage of the replenishment potential, the adverse impacts associated with high groundwater levels in the lower end of the basin must be controlled through an effective groundwater level management strategy.

The RCF Project can be utilized to transport water out of the area of historic high groundwater, thus providing an additional outlet for water when groundwater levels become too high in the lower end of the basin.

Optimize Use of Imported Water

Imported water supplies can be halted or severely cut back as a result of drought, natural disaster, aqueduct maintenance or repairs. Reliance on imported water to meet immediate or instantaneous demands renders local purveyors vulnerable to these external factors. Using imported water to supplement the overall long-term water supply for an area as opposed to relying solely on imported water to meet peak demands will reduce the vulnerability to these outside factors.

As part of the RCF Project, imported water will be used to replenish the Basin when available, and extracted when needed.

Groundwater Management

Groundwater production has been, and will continue to be, the principal means by which many of the local water purveyors meet demand in SBVMWD. Currently, over 80 percent of the total annual supply in SBVMWD's service area consists of groundwater production. Effective management of the groundwater basins to maximize yield, while minimizing the impacts of high groundwater and addressing water quality, requires the implementation of sometimes conflicting operating objectives including: 1) those oriented towards maximizing water levels and storage volumes; 2) those geared to preserving and improving water quality; and 3) those aimed at increasing the basin yield and maximizing groundwater production. Depending on the objective, different strategies may be proposed under specific conditions and basin management must achieve a balance between objectives.

In support of this policy, WMWD intends to conduct replenishment and extraction operations in cooperation with other water agencies who recharge water in and/or extract water from groundwater basins located within the San Bernardino Basin Area, including the parties to the Judgment in the case of Western Municipal Water District of Riverside County, et al. v East San Bernardino County Water District, et al., Riverside Superior Court No. 78426 ("Judgment"), and in compliance with that Judgment.

California's Colorado River Water Use Plan (California 4.4 Plan)

In late 1996 the Secretary of the Interior, Bruce Babbitt, issued a strongly worded directive to California to reduce its over-reliance on the Colorado River. Noting that other lower basin states such as Arizona and Nevada would soon be using their full entitlements, California was urged to come up with a strategy to live with its legal allotment of 4.4 million acre feet per year. A framework for that strategy, formally known as California's Colorado River Water Use Plan (California 4.4 Plan), was drafted and released in 1997. The plan laid out an array of programs and actions to wean California from its reliance on surplus Colorado River water without major disruption to local economies or to the state's water supply. The RCF Project is consistent with the following goals outlined in the draft 4.4 Plan:

- Develop water replenishment and conjunctive use programs to increase normal and dry year water supplies;
- Encourage water exchanges;
- Implement administrative actions necessary for effective use and management of water supplies;
- Encourage improved reservoir management and operations;
- Develop drought and surplus water management plans; and
- Encourage coordinated project operations for increased water supply yield and groundwater management.

2005 Project Alignment Determination under CEQA

The 2005 PEIR prepared for the 2005 Riverside-Corona Feeder Project Alignment found that the RCF Project was consistent with the San Bernardino Valley Municipal Water District Regional Water Facilities Master Plan and California's Colorado River Water Use Plan (California 4.4 Plan).

6.6.2 Analysis of the Riverside-Corona Feeder Project Realignment Alternatives

Relation of the Realignment Alternatives to the 2005 Project Alignment

The impacts and findings discussed in the 2005 PEIR related to consistency with regional plans are applicable to both the 2005 Project Alignment and the current realignment project, as appropriate. The proposed project will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 PEIR. The analysis of

regional water plans contained within the 2005 PEIR does not specifically address regional plans adopted since completion of the 2005 PEIR. However, the analysis conducted in this section of the SEIR/EIS will be provided to make the previous EIR adequate for the entire Riverside-Corona Feeder Project.

Thresholds of Significance

Western Municipal Water District (WMWD) has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. However, WMWD's "Environmental Checklist" for the subject project (see Appendix A of this document) indicates that impacts to consistency with regional plans may be considered potentially significant if the project would:

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

Environmental Impacts before Mitigation

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

As described above, the proposed project's consistency with applicable city and county general plans is contained in Section 4.9 (Land Use and Planning) of this SEIR/EIS. Consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) is contained in Section 4.3 (Biological Resources) of this SEIR/EIS. The Air Quality Section of this SEIR/EIS (Section 4.2) discusses consistency with the applicable Air Quality Management Plan. The purpose of this section is to discuss the proposed project's consistency with applicable regional water plans.

WMWD's Updated Integrated Regional Water Management Plan

WMWD completed an Integrated Regional Water Management Plan (IRWMP) in October 2006. Since that time there have been many developments related to regional water planning. These developments include preparation of a Draft Water Conservation Master Plan for WMWD, release of a Drought Shortage Allocation Plan by the Metropolitan Water District of Southern California (MWD), judicial decisions affecting availability of State Water Project (SWP), and the publication of Integrated Regional Water Management Plans for neighboring regions. Furthermore, in November 2006, California voters passed Proposition 84, a bond measure specifically addressing Integrated Regional Management Plans. In response to these events, an update of the IRWMP was completed in May 2008.

The purpose of the IRWMP for the WMWD service area is to continue to address long range water quantity, quality, and environmental planning needs within WMWD's service area. The

essence of the IRWMP is the identification and evaluation of water management strategies that could increase local water supply, thereby improving water supply reliability. Additionally, the IRWMP addresses local and regional water quality, environmental and disadvantaged community issues. The IRWMP also includes discussion of other regional planning efforts that impact water management within the WMWD service area as well as compilation of estimates of water demands by member agencies, water supplies (e.g., local groundwater, recycled water, surface water, and imported water) available to the agencies, and means to coordinate investments in water management, as appropriate, between agencies.

The objectives of the IRWMP are to prepare a comprehensive document to describe WMWD, its member agencies and the local and regional water planning issues; identify and evaluate programs on a regional basis that provide water supply reliability for dry periods as well as short-term MWD outages, address regional surface water, groundwater quality, and environmental concerns particularly as they intersect with water supply, and provide operational redundancy especially for MWD outages; and provide an on-going process with which to evaluate and compare water supply and other water management strategies.

Consistency of the Riverside-Corona Feeder Project with the IRWMP

The IRWMP identifies approximately 90 proposals for evaluation and inclusion in the IRWMP. The RCF Project was evaluated and included in the IRWMP. The IRWMP recognizes that the RCF Project will reduce the WMWD dependency on imported water by banking water in the upper areas of the Santa Ana River basin as well as by facilitating conveyance of desalted groundwater from the Arlington and Chino Basin Desalters to WMWD's service area. In addition, the project could convey desalted water from the City of Riverside Downtown Groundwater Treatment Plant Project which will provide desalted water from the Riverside South Basin. The Chino Basin Dry Year Yield Study and Chino II Desalter Expansion will augment the Chino Desalter supplies to the Riverside-Corona Feeder.

Table 5-2 in the IRWMP shows that the RCF Project meets the California Water Plan strategy of "Improve Operational Efficiency and Transfers" as a "conveyance" project; and the "Increase Water Supply" strategy as a "Conjunctive Management & Groundwater Storage" and "Desalination – Brackish and Seawater" project. IRWMP Table 5-3 shows that the RCF Project meets the IRWMP objectives of "New Water Supply," "Basin Water Quality" and "Operational Flexibility (potable)."

IRWMP also determined that the RCF project incorporates the IRWMP strategies of water supply reliability, groundwater management in the San Bernardino Basin Area (SBBA), use of imported water for aquifer storage in the SBBA to increase the yields for State Water Project water, and the provision of the opportunity to better utilize existing/expanded desalters.

Based upon the inclusion of the RCF project within the list of projects evaluated by the IRWMP and the IRWMP determination that the RCF Project meets IRWMP objectives and strategies, it can be concluded that the proposed project is consistent with the IRWMP.

Upper Santa Ana Watershed Integrated Regional Water Management Plan

In 2005, the Upper Santa Ana Water Resources Association (Association) agreed to develop an Integrated Regional Water Management Plan (IRWM Plan) to address major water management issues for the communities of the Upper Santa Ana River Watershed. The main benefit of the plan was the development of a process for managing the San Bernardino Basin Area (SBBA). A secondary benefit was to identify regional projects and to receive grant funding for these projects. The plan was developed through the participation of water managers and stakeholders and was finalized in November 2007.

The IRWM Plan Area (Region) covers 852 square miles, approximately 32 percent of the total Santa Ana River watershed, and is primarily located in San Bernardino and Riverside Counties. The Region includes Big Bear Lake, the cities and communities of San Bernardino, Yucaipa, Redlands, Highland, Rialto, Mentone, Colton, Grand Terrace, Loma Linda, Beaumont, and Riverside.

The primary purpose of the IRWM Plan is to assist local agencies with developing tools for optimizing the management and use of the region's water resources while protecting the groundwater basins from water quality degradation and the threat of liquefaction. The implemented IRWM Plan will reduce reliance on imported water during the drought periods and optimize the use of both native and imported supplies to help meet water demands even during extended periods of below-average precipitation. The IRWM Plan sets forth three principal objectives: Water Supply Reliability Improvement, Water Quality Protection, and Ecosystem Restoration and Environmental Improvement.

<u>Water Supply Reliability Improvement</u>

Improving water supply reliability is the primary objective of the IRWM Plan. This objective was formulated to ensure that a reliable water supply is available for the region through 2030. Given the variability of the State Water Project (SWP) supplies, one of the region's water supply reliability goals as set forth in the IRWM Plan is to optimize the use of SWP supplies to be able to reduce its reliance on the SWP during drought periods. Various water management strategies and projects are identified and evaluated in the IRWM Plan to achieve water supply reliability objectives. Because surface water management and groundwater resources management of the region are critical and inseparable components of water supply reliability**,** "surface water management and groundwater management" are considered a subset of the broader water supply reliability objective.

Protect and Enhance Water Quality Objective

The goal of this objective is to protect the quality of the region's surface water and groundwater resources. To ensure reasonable protection, the water management strategies for the basin should be consistent with and contribute to the water quality objectives for the region, such as the Santa Ana Regional Water Quality Control Plan and the SAWPA IRWM Plan. The water quality objective is designed to address issues specific to the region. Groundwater management is currently influenced by the presence of contamination plumes. Most of these plumes resulted from historic military and industrial operations in the region.

Ecosystem Restoration and Environmental Improvement Objective

Protecting and restoring, where possible, the ecological functions of the watershed is an objective for the region. The IRWM Plan provides a framework for the integration and coordination of ecosystem and environmental improvement strategies relating to flood management, recreation and public access, and land use planning. The purpose of this framework is to enable stakeholders to coordinate and advance strategies to improve the ecological health of the watershed and, in the process, improve public awareness, access, stewardship, and enjoyment of this region's most valued water resources.

Consistency of the Riverside-Corona Feeder Project with the IRWM Plan

The IRWM Plan identifies and evaluates over 100 projects proposed to implement the water management strategies identified in the IRWM Plan. The Riverside-Corona Feeder Project was evaluated and was identified as a Tier 1a project that addresses two of the plan's objectives. Table 5-2 in the IRWM Plan shows that the Riverside-Corona Feeder project meets the IRWM Plan objective of "Water Supply Reliability" as a primary objective and meets the IRWM Plan objective subset of "Surface Water and Groundwater Management" as a secondary objective. Additionally, the RCF Project was identified as supporting "conveyance and intertie", and water supply strategies.

As discussed in more detail in Section 4.6 (Groundwater Quality) of this SEIR/EIS, it is the intent to operate the RCF Project (water replenishment and extraction), in order to assure that recharge and extraction operations maintain but do not exacerbate water level or water quality problems.

Due to the recognition of the RCF Project as an implementing project in the IRWM Plan and the intent to assure that water level or water quality problems are not exacerbated by the RCF Project, it can be concluded that the proposed project is consistent with the IRWM Plan.

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). It is determined that the proposed project is consistent with applicable regional water plans; and therefore, potential impacts related to consistency with regional plans will be less than significance. Consequently, mitigation measures specifically related to this issue are not required.

Summary of Environmental Effects after Mitigation Measures are Implemented

The proposed project is consistent with all applicable regional water plans and therefore potential impacts of the project related to consistency with regional plans will be less than significant. Mitigation measures are not required to reduce potential impacts from the proposed project to a level that is less than significant.

7.0 LONG-TERM IMPLICATIONS OF THE PROJECT

7.1 SIGNIFICANT IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES IF THE PROPOSED ACTION SHOULD BE IMPLEMENTED

The NEPA, Section 102(2)(c)(v) and 40 CFR 1502.16 require that an EIS include a discussion of the irreversible and irretrievable commitments of resources which may result, should the project be implemented. Similarly, the State CEQA (21158(a) and the CEQA Guidelines (Section 15126.2(c)) require a discussion of the significant irreversible environmental changes which would be involved if the project should be implemented.

A resource commitment is considered *irreversible* when direct and indirect impacts from its use limit future use options. Irreversible commitments apply primarily to the use of nonrenewable resources, such as fossil fuels, manufactured structural materials, and land converted to long-term use for structures or other human activities. The proposed above-ground facilities and the energy and materials required to build and operate all project facilities represent irreversible commitments of resources.

A resource commitment is considered *irretrievable* when it causes lost production or use of renewable resources such as timber, rangeland or wildlife habitat. For this project, the temporary disturbance of chaparral and riparian habitats will not result in irretrievable commitments of resources because the areas of disturbance will be relatively small and during construction of pipelines only which will be short in duration in any given location. Agricultural production may be affected by construction of the Mockingbird Connection through an existing citrus grove, but replacement of citrus trees, if necessary, is required by **MM Aes 1** and **MM Aes 2** so no long-term loss will result. A maximum of 40,000 acre feet of water per year could be consumed as drinking water, but this may allow for the production and use of recycled water for other purposes.

For the proposed alternatives, most resource commitments are neither irreversible nor irretrievable and none result in significant irreversible environmental changes. Most impacts are short-term and temporary. Others that may have a longer effect can be reduced through appropriate measures. The project alternatives, with the exception of the No-Project alternative, would make use of approximately the same types and quantities of resources. Those resources that may have a possible irreversible or irretrievable commitment are discussed below.

The project and alternatives, with the exception of the No-Project alternative, would result in the irreversible and irretrievable commitment of energy and material resources during project construction, operation and maintenance, and would include the following:

- construction materials such as sands, gravels, concrete, asphalt, steel and glass;
- human labor for project construction, operation and maintenance;
- land area committed to above-ground project facilities (approx. 5 acres); and

- energy expended in the form of electricity, gasoline, diesel fuel and oil for equipment and transportation vehicles that would be needed for project construction, operation and maintenance.
- water resources could be consumed during construction, although water for construction use would be temporary and largely limited to on-site concrete mixing and dust abatement activities.

In general, the impact to biological resources from project construction and operation would not constitute an irreversible and irretrievable commitment of resources. Site-specific and species-specific analyses and mitigation conducted for the project can be found in Section 4.3 and indicate that the project would not result in adverse effects to entire populations.

Clearing of rights-of-way within designated alternatives corridors and on other lands outside of rights-of-way will result in the direct loss of vegetation which will be replanted as required by the local jurisdiction and by mitigation measures. While habitat would be impacted during construction within the rights-of-way under all but the No Project/Action Alternative, implementation of the mitigation measures (such as habitat avoidance or restoration) identified in this SEIR/EIS would further reduce or avoid ecological impacts.

7.2 GROWTH INDUCING IMPACTS OF THE PROPOSED ACTION

The project alternatives vary in terms of the location of constructed facilities, but the purpose and need for the action remain consistent among the alternatives. The only potential growth inducing aspect of the project is related to water delivery, which is consistent among all the alternatives except the No Project/Action Alternative. Therefore, the discussion of growth inducing impacts from the 2005 Alignment PEIR generally applies to all the alternatives. It is hereby incorporated by reference and summarized below (see Section III-4 of the 2005 Alignment PEIR).

Consistent with the stated purposes of the RCF, the proposed project alignment and/or any alternatives presented herein are/is expected to result in water supply reliability for beneficial uses in WMWD's service area as well as other jurisdictions which may transport water via the RCF. Redundancy in WMWD's distribution system will be increased by the project.

Although such a water storage, conveyance, and distribution project may have the potential to remove obstacles to growth and/or provide water service to areas not previously served, it will not result directly in population or economic growth. Actual growth is approved at the local level where land use policies and decisions are made by local elected and appointed officials. In an area where growth occurs, such environmental factors are considered within the framework of local land use and regulatory decisions. Future development in any jurisdiction is influenced by many factors, only one of which is the reliability of the water supply. Other factors include such things as General Plan policies and zoning ordinances; the availability of community services and infrastructure, such as sewers, streets and libraries; employment opportunities; and maintenance costs.

This proposed project is not required for any specific development proposal or even a particular level of development in any given area. Growth is projected to occur throughout the region with

or without this project. WMWD looks at local agency projections for growth when formulating its long-term plans, which include the reliability provided by this project.

8.0 CONSULTATION AND COORDINATION

Western Municipal Water District (WMWD) and the Bureau of Reclamation (USBR) have engaged and consulted with agencies, stakeholders, and the general public. These consultations assisted in determining the scope of the SEIR/EIS, identifying the range of alternatives and mitigation measures, and defining the potential environmental impacts and their significance. Consultation included informal agency communications, formal interagency meetings and public meetings. WMWD and USBR will continue to solicit public and agency input on the project by encouraging review of this SEIR/EIS. As noted earlier, WMWD is the lead agency pursuant to CEQA and USBR is the lead agency pursuant to NEPA.

This section of the SEIR/EIS summarizes public and agency involvement activities undertaken by WMWD and USBR that have been conducted to date for this project, which satisfy NEPA and CEQA requirements for public scoping and agency consultation and coordination. Appendix A, "Notices and Distribution List" presents the federal, state, and local agencies, organizations and individuals receiving a copy of the draft SEIR/EIS.

8.1 NOTICE OF PREPARATION AND NOTICE OF INTENT

The potential environmental impacts of the 2005 Project Alignment were analyzed in the *Final Programmatic Environmental Impact Report for the Western Municipal Water District Riverside-Corona Feeder Project*, SCH: 2003031121 (2005 PEIR) which was certified on May 18, 2005. The Notice of Preparation (NOP) for the 2005 PEIR was circulated in March of 2003. The 2005 Project Alignment NOP was distributed directly to over 150 public agencies, property owners and interested parties. A notice advising the availability of that NOP was posted with both the Riverside County Clerk and San Bernardino County Clerk on March 28, 2003 and the State Clearinghouse on March 27, 2003 for a 30-day comment period.

An Initial Study was prepared by WMWD to assess the potential for the proposed RCF Realignment Project to result in significant environmental impacts. An NOP, which included the Initial Study, was circulated to 169 responsible agencies and interested parties and nine public libraries on or about July 30, 2008. A notice advising of the availability of that NOP was posted by the Riverside County Clerk and the San Bernardino County Clerk from July 31, 2008 until August 29, 2008. The NOP was posted at the California State Clearinghouse on July 31, 2008. Pursuant to Section 15082 of the State CEQA Guidelines, recipients of the NOP were requested to provide responses within 30 days after their receipt of the NOP. Copies of the NOP (including the Initial Study) and the NOP distribution list are located in Appendix A. Copies of comments regarding the NOP received by WMWD are also included in Appendix A.

The following is a summary of the comments regarding the NOP for the proposed RCF Realignment Project received by WMWD and a description of the issues to be resolved. Reference is provided to where the issue is addressed in this SEIR/EIS. The thresholds used to determine whether or not effects are significant are included in the "Thresholds of Significance" section for each topic discussion in this SEIR/EIS.

a. July 31, 2008 South Coast Air Quality Management District

This letter states that any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project be identified. The SCAQMD identifies appropriate methodology for evaluating air quality impacts and requests that when circulated to the SCAQMD, that electronic versions of any air quality modeling and air quality technical documents be included. Potential air quality impacts are addressed in Section 4.2 (Air Quality/Climate Change) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

b. August 5, 2008 Soboba Band of Luiseño Indians

This letter requests further government to government consultation, copies of archaeological and/or cultural resource documentation and the presence of cultural resource monitor(s) during any ground disturbance activities. The issues raised in this letter are addressed in Section 4.4 (Cultural Resources/Paleontology) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

c. August 8, 2008 Morongo Band of Mission Indians

The Morongo Band of Mission Indians requested that, should human remains be encountered during grading and other construction excavation, work in the vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code Section 7050.5. This letter also requested a cessation of work in the immediate vicinity of any Native American cultural resources discovered during project development/construction and consultation with a qualified archaeologist; and, if significant Native American cultural resources are discovered, that the Morongo Band of Mission Indians be consulted. The issues and procedures raised in this letter are addressed in Section 4.4 (Cultural Resources/Paleontology) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

d. August 12, 2008 Caltrans Division of Aeronautics

The Caltrans Division of Aeronautics identified that a portion of the proposed project is within Van Buren Boulevard, adjacent to the west end of the Riverside Municipal Airport. The Division of Aeronautics identifies Federal Aviation Regulation, Part 77 (regarding structural hazards on or near airports) as potentially being applicable to the proposed project. The issues related to construction in proximity to the airport are addressed in Section 4.8 (Hazards and Hazardous Materials) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

e. August 15, 2008 Riverside Transit Agency (RTA)

The RTA letter acknowledged attendance and discussion of their concerns regarding interference with transit stops and transit service at the August 11, 2008 Scoping Session. RTA requested that it be informed of the construction schedule and precise location of the pipeline within the affected roadways and coordination regarding closure and temporary relocation of bus stops. An analysis of this issue and appropriate mitigation measures are discussed in Section 4.12 (Transportation and Traffic) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

f. August 18, 2008 Riverside County Fire Department

The Riverside County Fire Department acknowledged receipt of the NOP and had no comments.

g. August 18, 2008 Jurupa Area Recreation and Park District

The Jurupa Area Recreation and Park District identified several trails that may be impacted by the proposed project. The identification of trails in proximity to the proposed project and any potential impacts to those trails are discussed in Section 4.12 (Transportation and Traffic) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

h. August 18, 2008 San Bernardino Municipal Water Department

The San Bernardino Municipal Water Department (SBMWD) states that there have been "significant developments in the water supply landscape" including multiple dry years in California, court decisions affecting delivery of state project water deliveries and increasing attention to global climate change, since the programmatic EIR was certified. SBMWD requested that the SEIR/EIS review the underlying concept of withdrawing water supply in the San Bernardino Basin Area and moving it to Riverside County. SBMWD also wanted be sure that withdrawals from the groundwater basin would have no negative impact to the "Western non-Plantiffs and the Newmark Groundwater Superfund Site." To the extent possible at the programmatic level, these issues are addressed in Section 4.6 (Groundwater Levels), Section 4.7 (Groundwater Quality) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

i. August 21, 2008 City of Fontana Community Development Department – Planning Division

The City of Fontana Community Development Department – Planning Division acknowledged receipt of the NOP and had no comments.

j. August 21, 2008 San Bernardino Development Services Department

The San Bernardino Development Services Department's letter identified potential detrimental impacts to circulation on City of San Bernardino streets, as well as access to the city from Interstate 215. The city stated that traffic and circulation impacts of this project require a full analysis of traffic and circulation impacts during construction and as needed for maintenance and repairs. A discussion of alternative routes though the City of San Bernardino was requested. To the extent possible at the programmatic level, these issues are addressed in Section 4.10 (Transportation and Traffic) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

k. August 26, 2008 Colton Engineering Department

The Colton Engineering Department requested that the SEIR/EIS evaluate the potential for the project to affect traffic and the city's proposed Capital Improvement Projects. The Engineering Department also advised that a Traffic Control Plan will be required as part of the city's permitting process. To the extent possible at the programmatic level, these issues are addressed

in Section 4.10 (Transportation and Traffic) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

l. August 26, 2008 Riverside County Flood Control District

This letter states that the SEIR/EIS should fully evaluate any potential impacts to Riverside County Flood Control District facilities. For the purposes of procuring an encroachment permit from the District, the District requires demonstration of compliance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The Flood Control District requests that the SEIR include a MSHCP consistency assessment. Impacts related to the Flood Control District's facilities are addressed in Section 1.0 (Summary) and Section 3.0 (Project Alternatives) and issues related to the MSHCP are addressed in Section 4.3 (Biological Environment) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

m. August 27, 2008 City of Riverside Planning Department

The City of Riverside Planning Department requested that the SEIR/EIS analyze short-term construction-related air quality impacts and the project's potential traffic impacts due to lane closures during construction. This letter also requested that all references to the City of Riverside's plans and documents reflect the most recently adopted documents. General Plan land use designations are discussed in Section 4.8 (Land Use) of this SEIR/EIS. Potential air quality impacts are addressed in Section 4.2 (Air Quality/Climate Change) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS. Potential traffic-related impacts are discussed at a project level for the Central Reach and at programmatic level for the Northern Reach in Section 4.10 (Transportation and Traffic) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

n. August 29, 2008 Southern California Edison

In their letter, Southern California Edison (SCE) requests notification should the project impact SCE facilities or its related land use rights. This letter does not identify any environmental issues that require analysis within the SEIR/EIS.

o. September 2, 2008 City of Colton Planning Department

The City of Colton Planning Department requested that the SEIR/EIS provide aerial photos, exhibits, and site plans at large enough scales, so that Colton's staff can review the pipeline's impacts on existing land uses. This letter requested that the EIR discuss potential impacts and provide mitigation measures affecting traffic flows within the city, construction-related noise impacts, biological issues relevant to Colton, and impacts to Colton's groundwater resources. The City of Colton Planning Department also requested that the EIR contain a discussion of the City of Colton General Plan designations. A discussion of alternatives and coordination with the city were also requested. These issues are addressed in Section 3.0 (Project Alternatives), Section 4.3 (Biological Environment), Section 4.6 (Groundwater Levels), Section 4.9 (Land Use), Section 4.10 (Noise), Section 4.12 (Transportation and Traffic) and Section 8.0 (Consultation and Coordination) of this SEIR/EIS.

p. September 2, 2008 County of San Bernardino Department of Public Works

This letter identifies that permits may be required if there is any encroachment on San Bernardino County Flood Control District facilities. The Department of Public Works recommended that the project be constructed to avoid placement of obstructions within any drainage course and to avoid altering the direction, elevation, or capacity of any existing drainage course. This letter also recommended that impacts upon identified biological resources be addressed. Impacts related to Flood Control District facilities are addressed in Section 1.0 (Summary) and Section 3.0 (Project Alternatives) and issues related to biological resources are addressed in Section 4.3 (Biological Environment) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

q. September 10, 2008 State Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) requested that the project alignment be reviewed for potentially contaminated sites, the applicable databases be investigated, and that appropriate remediation, if any is required, be conducted in compliance with state laws. These issues are addressed in Section 4.8 (Hazards and Hazardous Materials) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

r. September 19, 2008 Pechanga Band of Luiseño Indians

The Pechanga Band asserts that portions of the project area are part of the northern portion of its aboriginal territory. In this letter, the Pechanga Band indicates that there is a strong likelihood that subsurface resources may be discovered during ground disturbing activities. The Pechanga Band believes that a thorough cultural resources assessment be required as part of the SEIR/EIS process. The Pechanga Band requests that it continue to be involved in all assessment and evaluation of potential cultural resources within the SEIR/EIS. The issues and procedures raised in this letter are addressed in Section 4.4 (Cultural Resources/Paleontology) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

USBR published the Notice of Intent (NOI) in the Federal Register on February 24, 2010. An electronic version of the NOI and a scoping document that described the proposed project and alternatives and the range of issues to be evaluated, were made available for agency and public review at http://www.usbr.gov/lc/socal/envdocs.html. Copies of comments regarding the NOI received by USBR are also included in Appendix A.

The following is a summary of the comments regarding the NOI for the proposed RCF Realignment Project received by USBR and a description of the issues to be resolved. Reference is provided to where the issue is addressed in this SEIR/EIS.

s. March 26, 2010 City of Riverside Planning Department

Comments were previously provided to WMWD on August 27, 2008 which the City of Riverside Planning Department indicated are still valid and effective in addition to comments provided in supplemental letter dated March 26, 2010. The city requested that the SEIR/EIS analyze both short-term construction-related air quality impacts and the project's potential traffic

impacts due to lane closures during construction, and that all references to the City of Riverside's plans and documents reflect the most recently adopted documents. The city also indicated that an alternative alignment be analyzed as well as impacts to emergency services resulting from construction of the project in the SEIR/EIS. General Plan land use designations are discussed in Section 4.8 (Land Use) of this SEIR/EIS. Potential air quality impacts are addressed in Section 4.2 (Air Quality/Climate Change) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS. Potential traffic and emergency services related impacts are discussed in Section 4.12 (Transportation and Traffic) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS. Alternative alignments are discussed in Section 1.0 (Summary) and Section 3.0 (Project Alternatives).

t. March 23, 2010 County of San Bernardino Department of Public Works

This letter identifies that permits may be required if there is any encroachment on San Bernardino County Flood Control District facilities and that U.S. Army Corps of Engineers (ACOE) approval may be required for any work near the Santa Ana River. The Department of Public Works also recommended that the project be constructed to avoid altering the direction, elevation, or capacity of any existing drainage course and that adequate provisions for intercepting and conducting drainage around or through the site areas not adversely affect adjacent or downstream properties. This letter also recommended that the most recent FEMA floodplain regulations be incorporated. Impacts related to Flood Control District facilities are addressed in Section 1.0 (Summary), Section 3.0 (Project Alternatives), Section 4.11 (Stormwater/Water Quality) and impacts related to ACOE are discussed in Section 4.3 (Biological Resources), of this SEIR/EIS.

u. March 8, 2010 Soboba Band of Luiseño Indians

This letter requests government to government consultation, the presence of Native American Monitor(s) from Soboba Band Luiseño Indians during any ground disturbance activities and that proper procedures be taken and requests of the tribe be honored. The issues raised in this letter are addressed in Section 4.4 (Cultural Resources/Paleontology) of this SEIR/EIS.

v. March 9, 2010 South Coast Air Quality Management District

This letter states that any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project be identified. The SCAQMD identifies appropriate methodology for evaluating air quality impacts and requests that when circulated to the SCAQMD, that electronic versions of any air quality modeling and air quality technical documents be included. Potential air quality impacts are addressed in Section 4.2 (Air Quality/Climate Change) and Section 4.13 (Cumulative Impacts) of this SEIR/EIS.

8.2 PUBLIC SCOPING MEETINGS

A Scoping meeting was held for the 2005 Project Alignment as recommended in Section 15083 of the CEQA Guidelines to which all NOP recipients were invited. Two responsible agencies, Riverside Transit Agency and Elsinore Valley Municipal Water District, attended the meeting held on April 9, 2003. Issues raised included impacts on public transportation and groundwater.

Subsequent to the circulation of the NOP for the proposed RCF Realignment Project and in accordance with Section 15082(c)(1) and Section 15083 of the CEQA Guidelines, a public scoping meeting was held on Monday, August 11, 2008 at 4:00 p.m. at the Western Municipal Water District Administrative Offices. One responsible agency, Riverside Transit Agency, attended the meeting and raised concerns regarding potential impacts on public transportation and requested coordination of construction activities with RTA's Bus Operations Section.

In the NOI published by the USBR, acknowledgement of the prior CEQA Scoping meeting was given with no additional scoping meetings planned to avoid duplication with State and local procedures.

8.3 ADDITIONAL STEPS IN THE ENVIRONMENTAL REVIEW PROCESS

In accordance with CEQA and NEPA review requirements, this SEIR/EIS will be circulated for public and agency review and comment for a 45-day period following the publication of the Notice of Availability (NOA) of the SEIR/EIS in the *Federal Register* and the filing of the Notice of Completion (NOC) with the California State Clearinghouse. As required by CEQA Section 21092.3, a copy of the NOC will also be posted with the Riverside and the San Bernardino County Clerks. Written comments from the public, reviewing agencies, and stakeholders will be accepted during the 45-day comment period. Following consideration of these comments by WMWD and USBR, a Final SEIR/EIS will be prepared, noticed, and circulated per CEQA and NEPA requirements. The Final SEIR/EIS will include responses to all comments. WMWD and USBR will use the Final SEIR/EIS when considering approval of the proposed project/action and will issue a Notice of Determination (NOD)/Record of Decision (ROD) documenting that decision. The NOD/ROD will be posted with the California State Clearinghouse, the Riverside County Clerk and the San Bernardino County Clerk.

9.0 REFERENCES

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