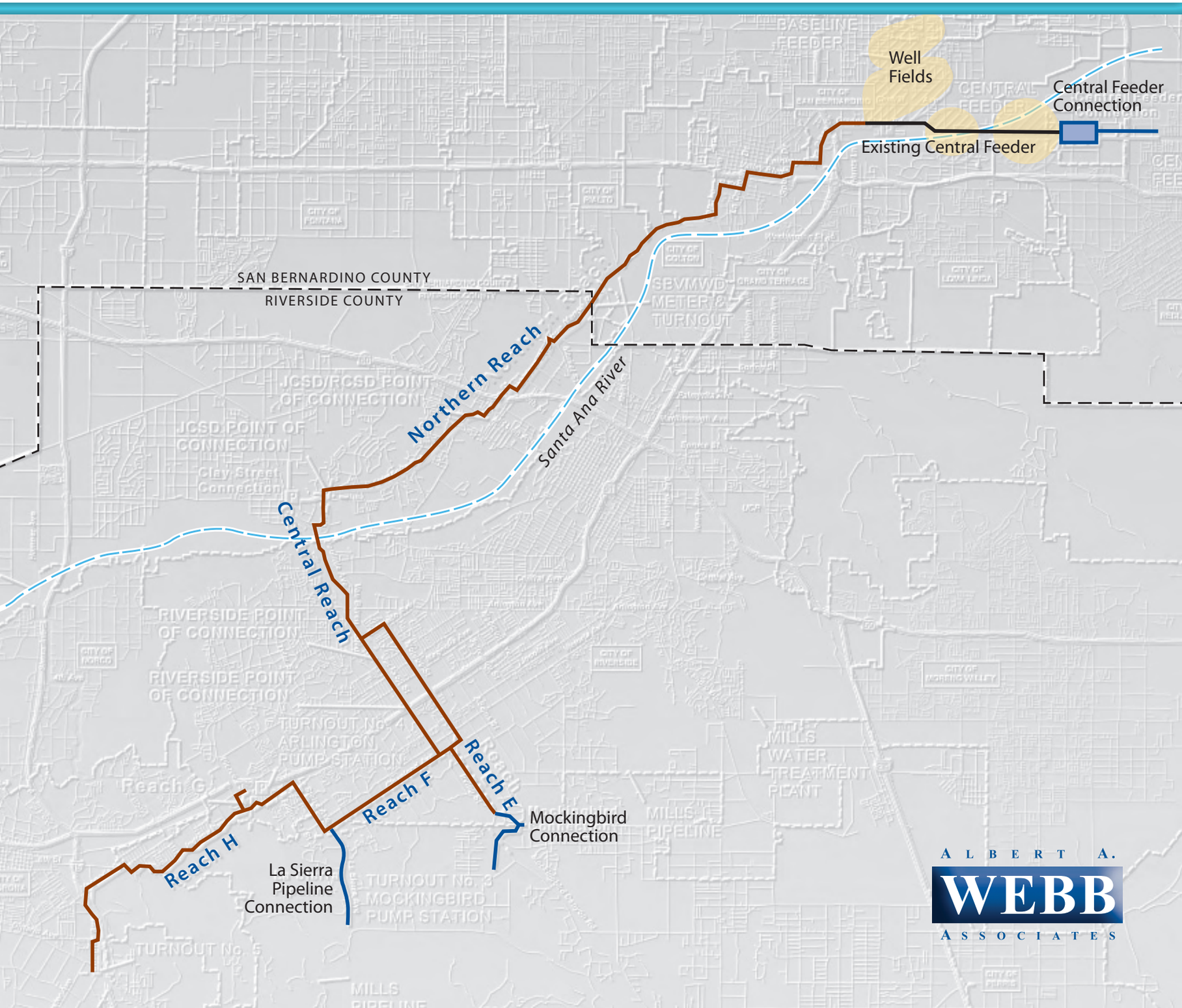
WESTERN MUNICIPAL WATER DISTRICT

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Draft
Supplemental Environmental Impact Report/ Environmental Impact Statement

Riverside-Corona Feeder Project

January 2011 SCH No. 2003031121



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.

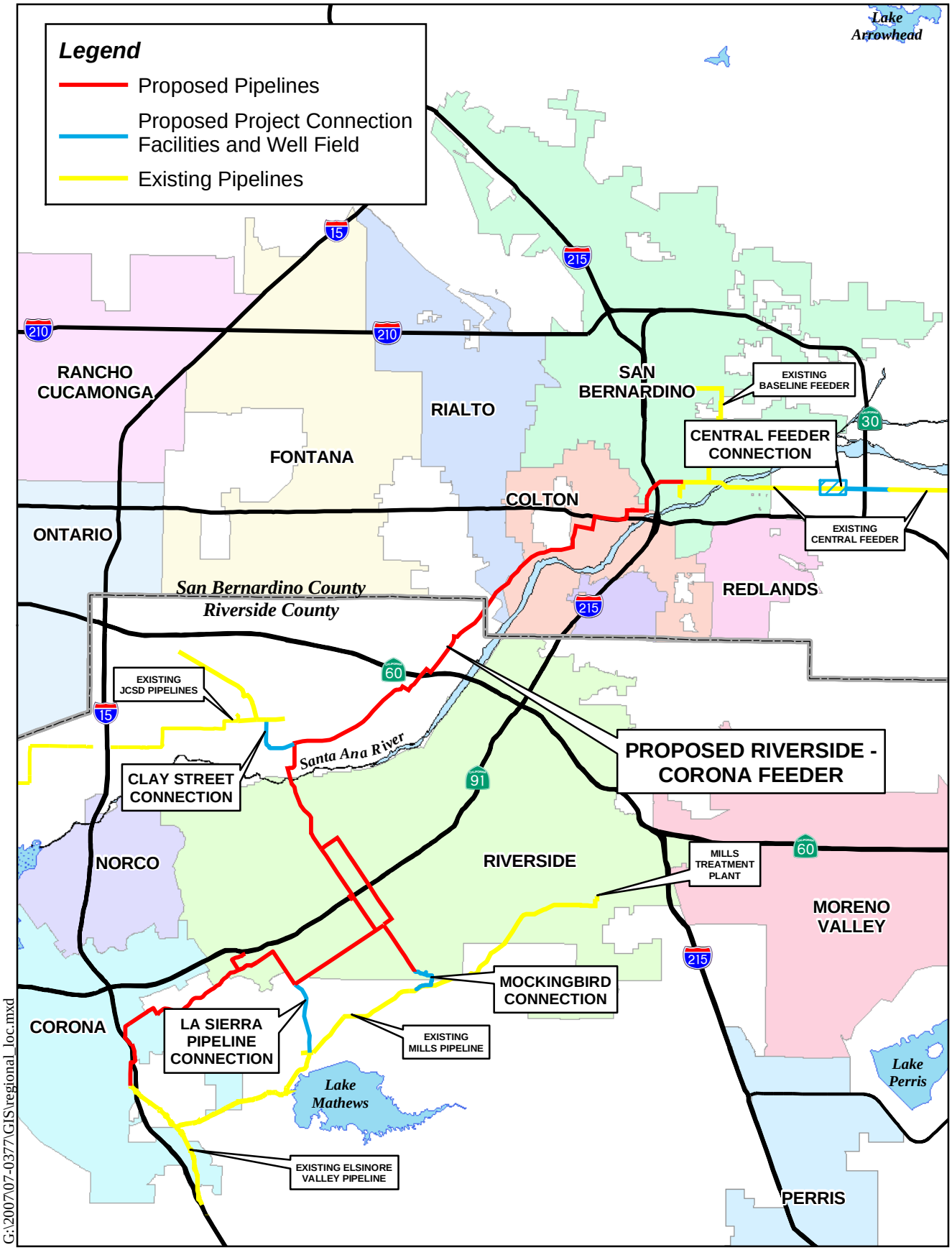


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Figure 1

Draft Supplemental Environmental Impact Report/ Environmental Impact Statement

Riverside-Corona Feeder Project

State Clearinghouse No. 2003031121

Prepared For:

Western Municipal Water District
Jack Safely
14205 Meridian Parkway
Riverside CA 92518
Phone (951) 571-7100

U.S. Department of Interior
Bureau of Reclamation
Amy Witherall
27708 Jefferson Avenue, Suite 202
Temecula CA 92590-2641
Phone (951) 695-5310

Prepared By:

Albert A. Webb Associates
Cathy Perring
3788 McCray Street
Riverside CA 92506
Phone (951) 686-1070

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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 groundwater supply to water users. The project will also include a new water pipeline to 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 replenishes excess State Water Project (SWP) water supplied by Metropolitan Water District of Southern California (MWD) into the San Bernardino Groundwater Basin, and extracts 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 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 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.

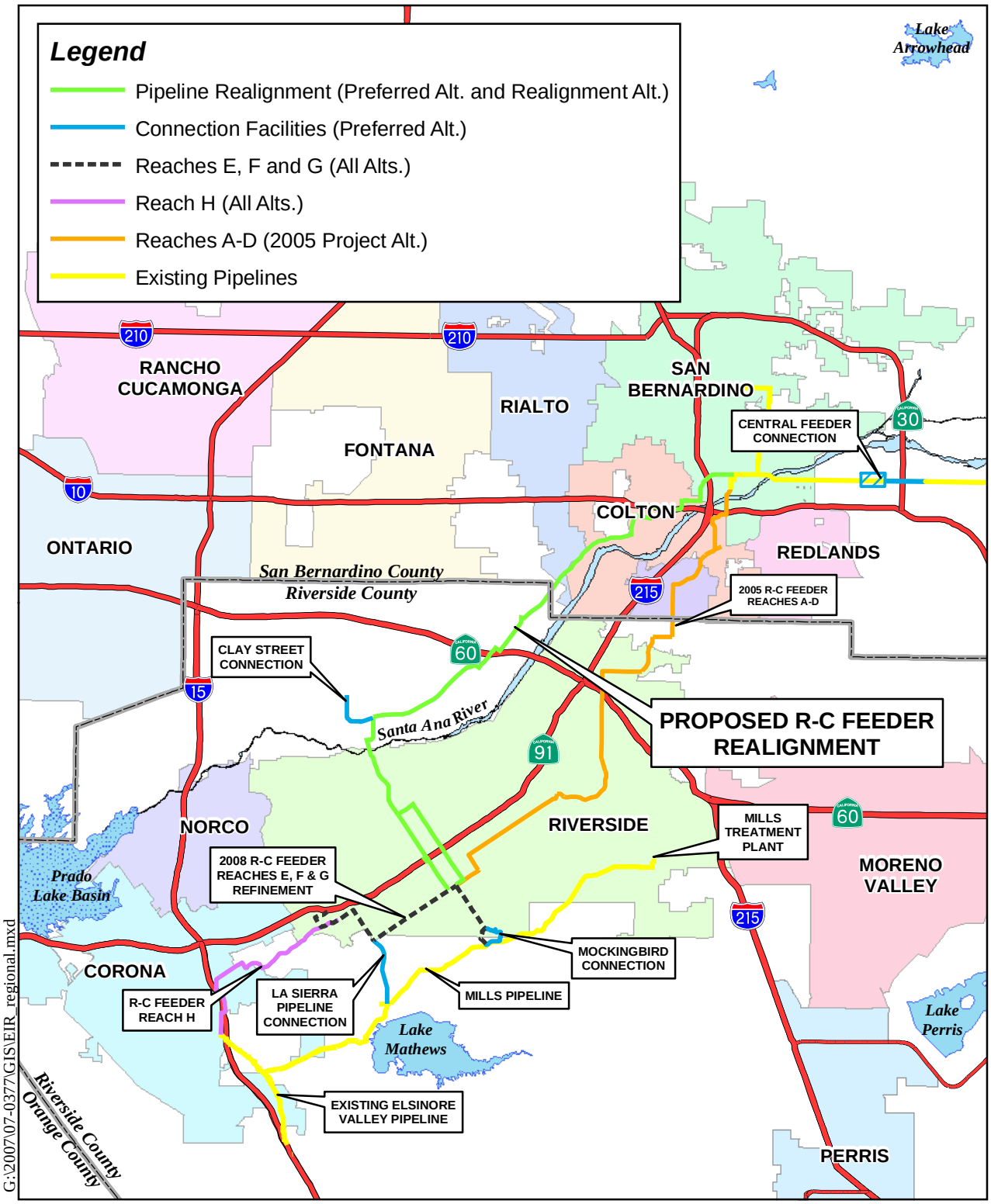


Figure 1.0-1
Regional Location

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."

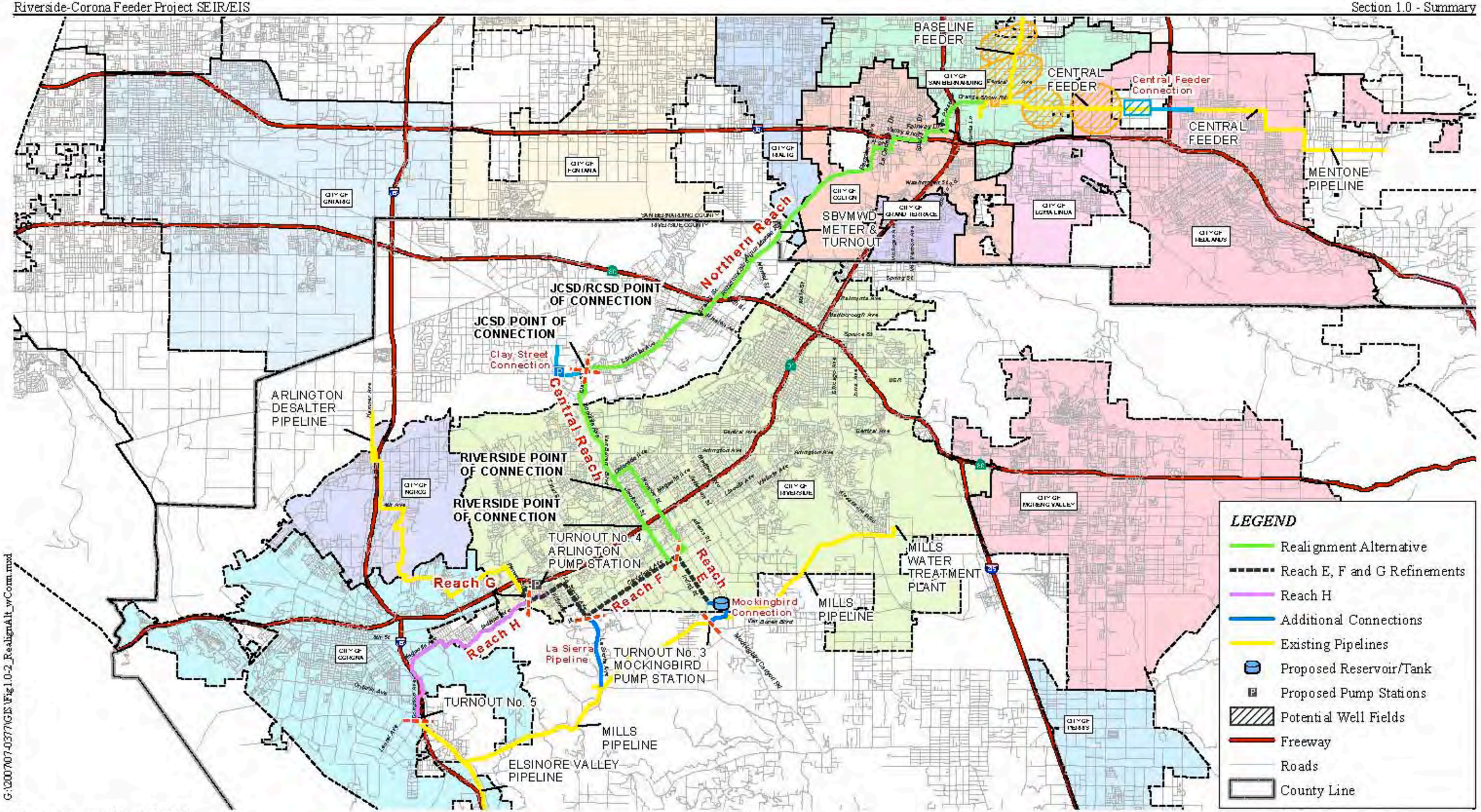
To address this concern, WMWD has preliminarily evaluated the suggested alignment and has some concerns. Since this portion of the project is in Phase 2, there will be time to coordinate further with the City to resolve any issues associated with construction in the Van Buren area, and come to a satisfactory 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

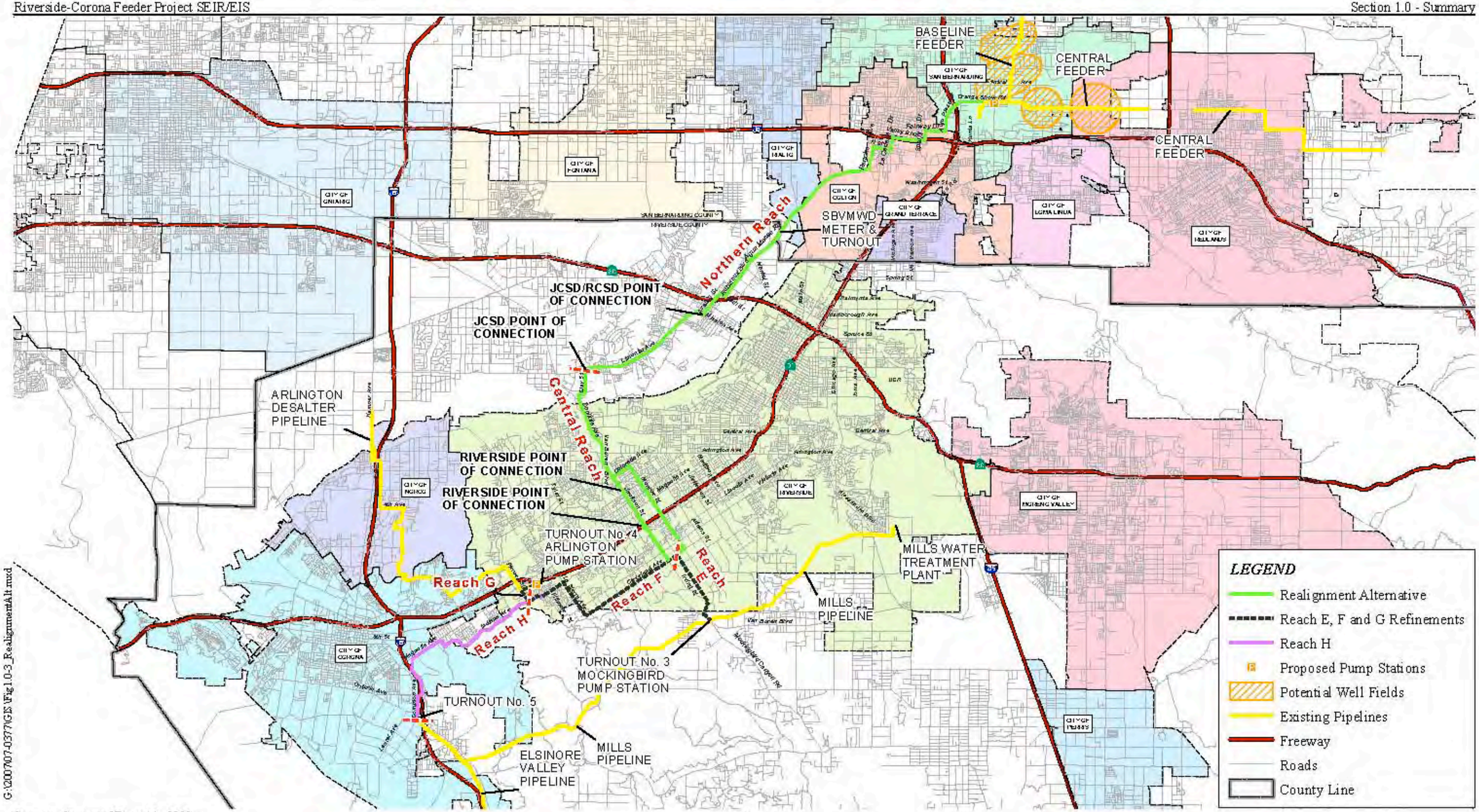
Project engineers have preliminarily reviewed space availability for the pipe and determined that, although tight, there is room in the proposed alignment assuming abandoned underground facilities are removed during construction. MM Trans 2 requires completion of a Traffic Control Plan for each phase 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.



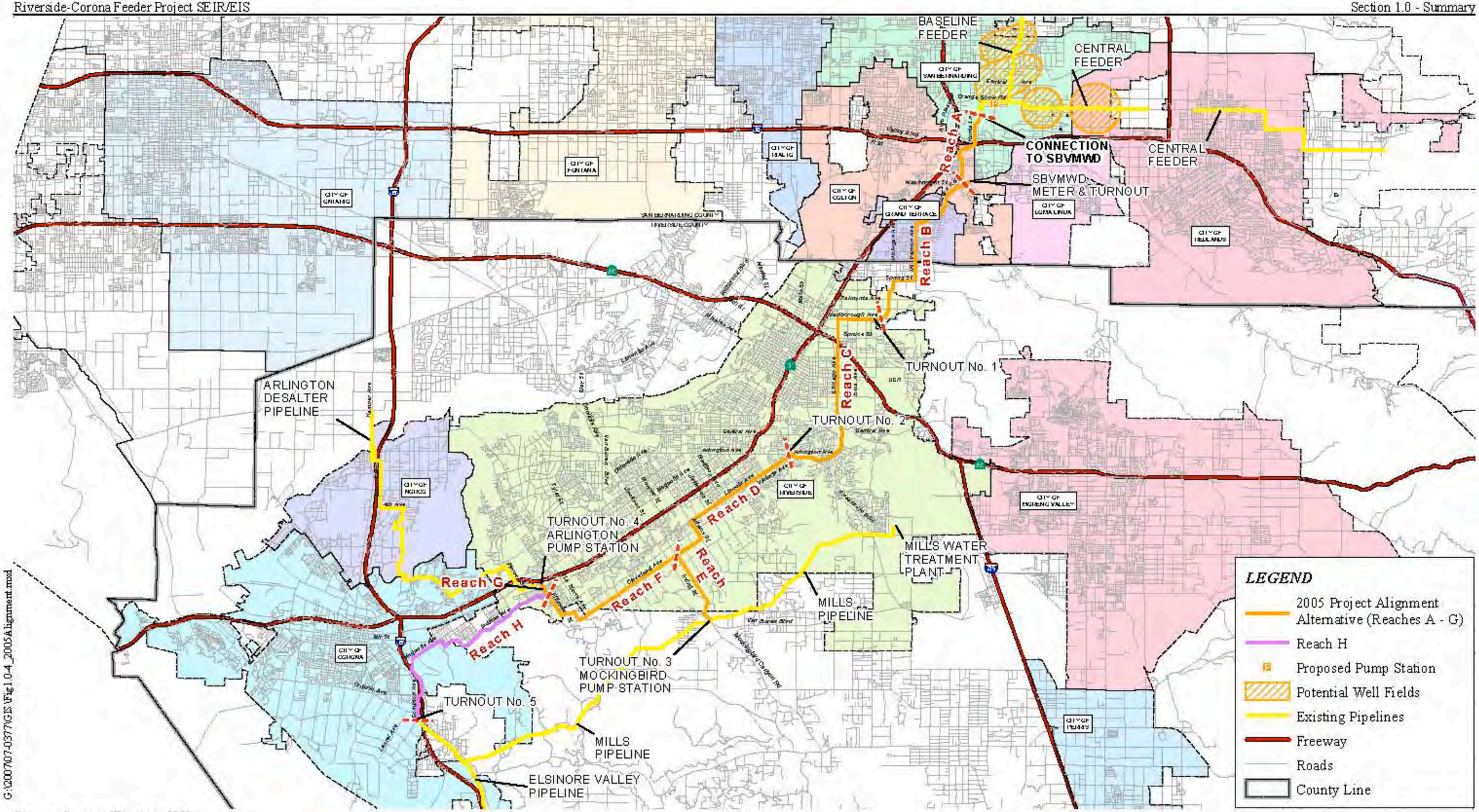
Sources: County of Riverside, 2009; County of San Bernardino, 2009.

Figure 1.0-2
Realignment Alternative with Additional Connections
Preferred Alternative



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

Figure 1.0-3
Realignment Alternative



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
	Substantially damage scenic/aesthetic resources,	All Alternatives	**MM Aes 6:** To minimize the visual impact of above-grade facilities associated with pump/booster stations, all the	Potentially significant	Pre-Construction	WMWD	Building, pump enclosure and	Less than

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	including, but not limited to, trees, rock outcroppings, and historic buildings after operational.		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.				landscape plans shall be reviewed.	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: 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% reduction)[1].	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 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	Potentially significant	During construction	Contractor construction manager	Report to WMWD.	Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
			soil materials, replace ground cover in disturbed areas as quickly as possible.					
	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
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	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-	Potentially significant	Flycatcher survey conducted May 15 – Jul 17. (Five (5) surveys	WMWD and Contractor	Survey reports. Construction drawing specifications.	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	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.		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 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, shall be implemented.		required in all.) Vireo survey conducted Apr 10 – Jul 31. (Eight (8) surveys in all.)			
	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 **MMBio 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	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

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
			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.					
	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 other means.	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
	Have a substantial adverse effect on federally protected	All Alternatives	**MM Bio 8:** A formal jurisdictional delineation for potential State and Federal wetland impacts will be conducted at Reaches A and	Potentially significant	Pre-construction	WMWD and Army Corp of Engineers,	Issuance of Section 404 Permit and/or 1602 Streambed Alteration	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	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.		B or the Northern Reach.			CDFG	Agreement, as 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 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.	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 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.	Potentially significant	Pre-construction	WMWD and Army Corp of Engineers	Issuance of Section 404 Permit.	Less than Significant

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	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 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 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.	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
	Have a substantial adverse	Realignment	**MM Bio 16a:** In San Bernardino County focused surveys shall be	Potentially significant	Survey seasons vary,	WMWD's project	Report.	Less than

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	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.	Alternatives	conducted within potentially suitable habitat for northwestern San Diego pocket mouse and Los Angeles pocket mouse in the Northern Reache (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.		generally May 1 to September 15. Prior to construction of the Central and Northern Reaches where potential habitat exists.	biologist CDFG	WMWD implements mitigation, if required.	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 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 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 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	Potentially significant	Pre-construction Or Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD with CDFG RCA, if applicable	Proof of acquisition. Compliance with RCA conditions and payment of fees to RCA, if applicable.	Less than Significant

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			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.					
	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 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	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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			conservation areas/banks.					
	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. -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.	Potentially significant	Pre-construction within the Northern Reach	WMWD USFWS Project biologist	Report. Result of Section 7 consultation.	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 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	Potentially significant	Pre-construction if vegetation clearing	WMWD	Report.	Less than

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			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.		occurs February 1 to August 31.	Project biologist	WMWD implements mitigation, if required.	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 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 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.	Potentially significant	Pre-construction Or Prior to impacts to Covered Species and their Habitats (Pursuant to Section 6.1.6 of the MSHCP)	WMWD RCA, if applicable	Proof of Section 7 consultation for gnatcatcher and acquisition of habitat as agreed upon by USFWS. Compliance with RCA conditions and payment of fees to RCA, if applicable.	Less than Significant
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), within undeveloped areas along the project alignment, 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.	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	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	Potentially significant	During Grading and/or Construction	Contractor construction manager Qualified	On-site monitoring. Archaeological Surveys shall be submitted to WMWD, if appropriate.	Less than Significant

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	pursuant to California Code of Regulations, Section15064.5.		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.			Archaeological Monitor		
	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 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.	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.
	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 plan for such dispersal that encompasses the tribes' desired treatment and disposition of Native American cultural resources, including human remains.	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.

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			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.					
	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 paleontological resources and shall be submitted to Western Municipal Water District and the museum repository.	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
	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 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	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	Potentially significant	If during construction resources are discovered.	WMWD, archaeologist, tribal monitor, land	Archaeologist's report on monitoring activity.	Less than Significant

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	archaeological resource pursuant to California Code of Regulations, Section15064.5.		feasible.			owner, and local jurisdiction.	Documentation of resources, if required. Revision to project if feasible.	
	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 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.	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.	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	Potentially significant	Prior to construction plan review.	WMWD and project archaeologist	Approval of construction documents.	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
			(Packing House Christian Academy) located on the southwest corner of the intersection of Alabama Street and San Bernardino Avenue.					
	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 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).	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. ~~As described in **MM GWL 1**, existing~~The groundwater flow and groundwater 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**~~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 ~~significant impacts~~ 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	Potentially significant	On-going	WMWD	Annual report to the TAC for the San Bernardino Groundwater Basin.	Less than Significant
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. The RCF operations the 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.~~: As described in **MM GWQ 1**~~Existing groundwater flow and	Potentially significant	On-going	WMWD	Annual report to the TAC for the San Bernardino Groundwater Basin.	Less than Significant

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	whole or for any individual pumper.		groundwater quality model(s) shall be used to predict the effects of project operations on groundwater quality. ~~pursuant to the operating plan developed as a requirement of **MM GWQ 1.**~~ If water quality testing at any indicator wells (which are already tested regularly) ~~the model(s)~~ suggest that the replenishment and pumping regime of the proposed project operation is causing drinking water quality in a given well to 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 adverse affects associated with the project no longer occur. Such remedies may include but not be limited to the following: ~~would result in significant impacts, the project operation shall be modified to reduce impacts to less than significant. 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 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	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

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	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 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.	Potentially significant	Prior to project design.	WMWD and Project Engineer	Phase I ESA report.	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 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.	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, would it create a significant hazard to the public	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.	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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	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 compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public	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 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	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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	or the environment.		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.					
	Impacts to hazards and hazardous materials may be considered potentially significant if 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.	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
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 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.	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
	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	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	Less than significant	Between 5 and 10 working days prior to blasting	WMWD or contractor	WMWD review con- struction specifications for requirement. Provide proof of noticing to local jurisdiction within which blasting is required.	Less than Significant

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	local general plan or noise ordinance, or applicable standards of other agencies.		five (5) and a maximum of ten (10) working days prior to anticipated blasting activities.					
	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 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 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
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. 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	Potentially significant	Prior to construction	Contractor	Proof of NPDES Permit provided to WMWD	Less than Significant

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			rainfall events. d. No disturbed surfaces shall be left without erosion control measures in place between October 15 and April 15. 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.					
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	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

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			disruption to be caused by construction.					
	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. 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	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
			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.					
	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 shall consult with the affected local jurisdiction(s) in order to coordinate project construction with applicable Capital Improvement Projects.	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 4:** WMWD shall restrict all necessary lane closures 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.	Potentially significant	Prior to construction in the Northern Reach	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 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	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	Potentially significant	Prior to construction	WMWD and contractor	Traffic Control Plan and construction project schedule.	Less than Significant

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	which is substantial in relation to the existing traffic load and capacity of the street system.		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.					
	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.	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 project would cause traffic which is substantial in relation to the existing traffic load and capacity of the street system.	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 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.	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.	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	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	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

IMPACT CATEGORY	IMPACT/THRESHOLD	APPLICABLE ALTERNATIVE	MITIGATION MEASURE	LEVEL OF IMPACT	IMPLEMENTATION TIMING	RESPONSIBLE PARTY	MONITORING/ REPORTING METHOD	IMPACT AFTER MITIGATION
	transportation.		appropriately.					
	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 programs supporting alternative transportation.	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

[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, it 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 groundwater supply to water users. The project will also include a new water pipeline to 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 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 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 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.

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 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.

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.

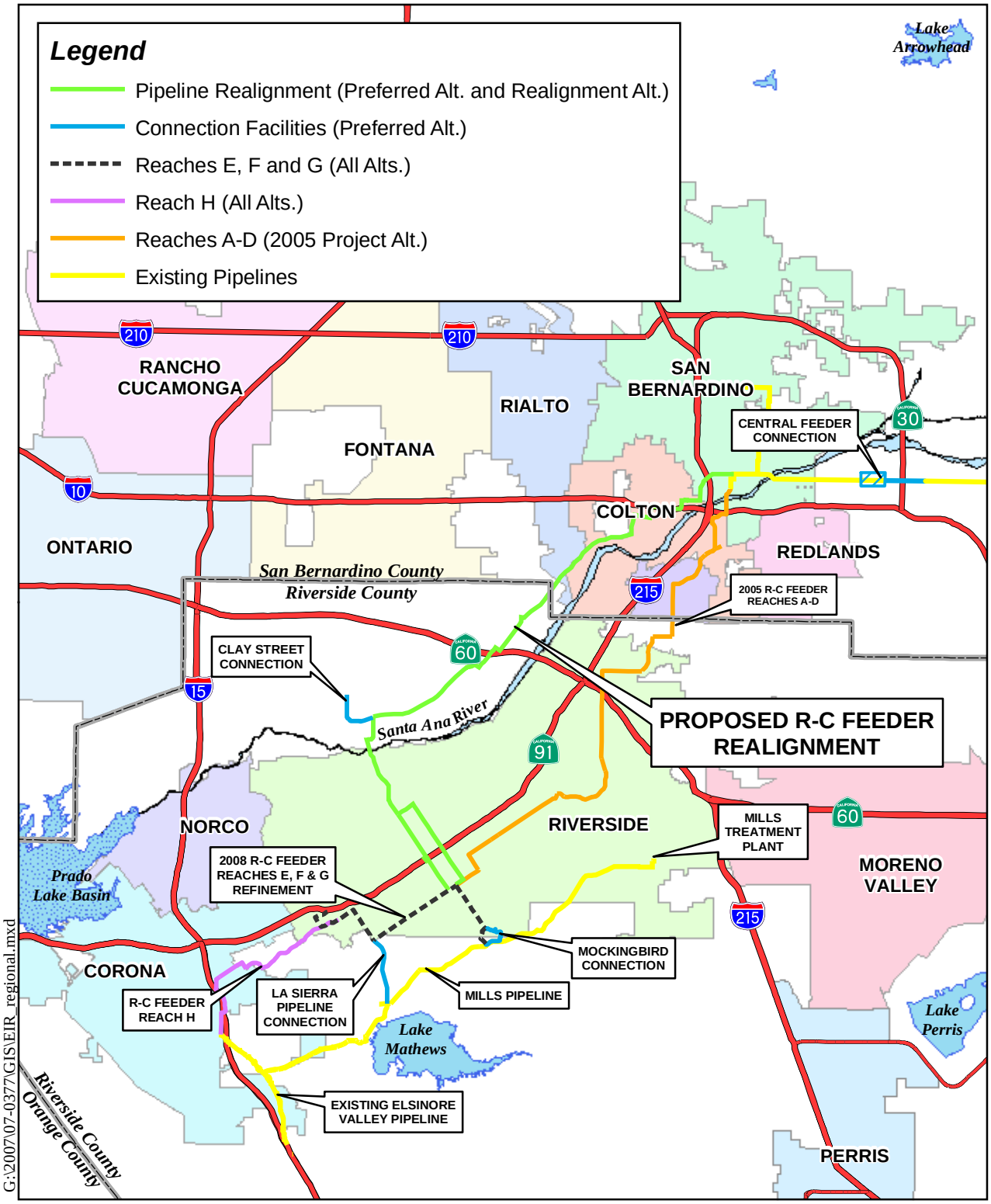


Figure 3.0-1
Regional Location

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

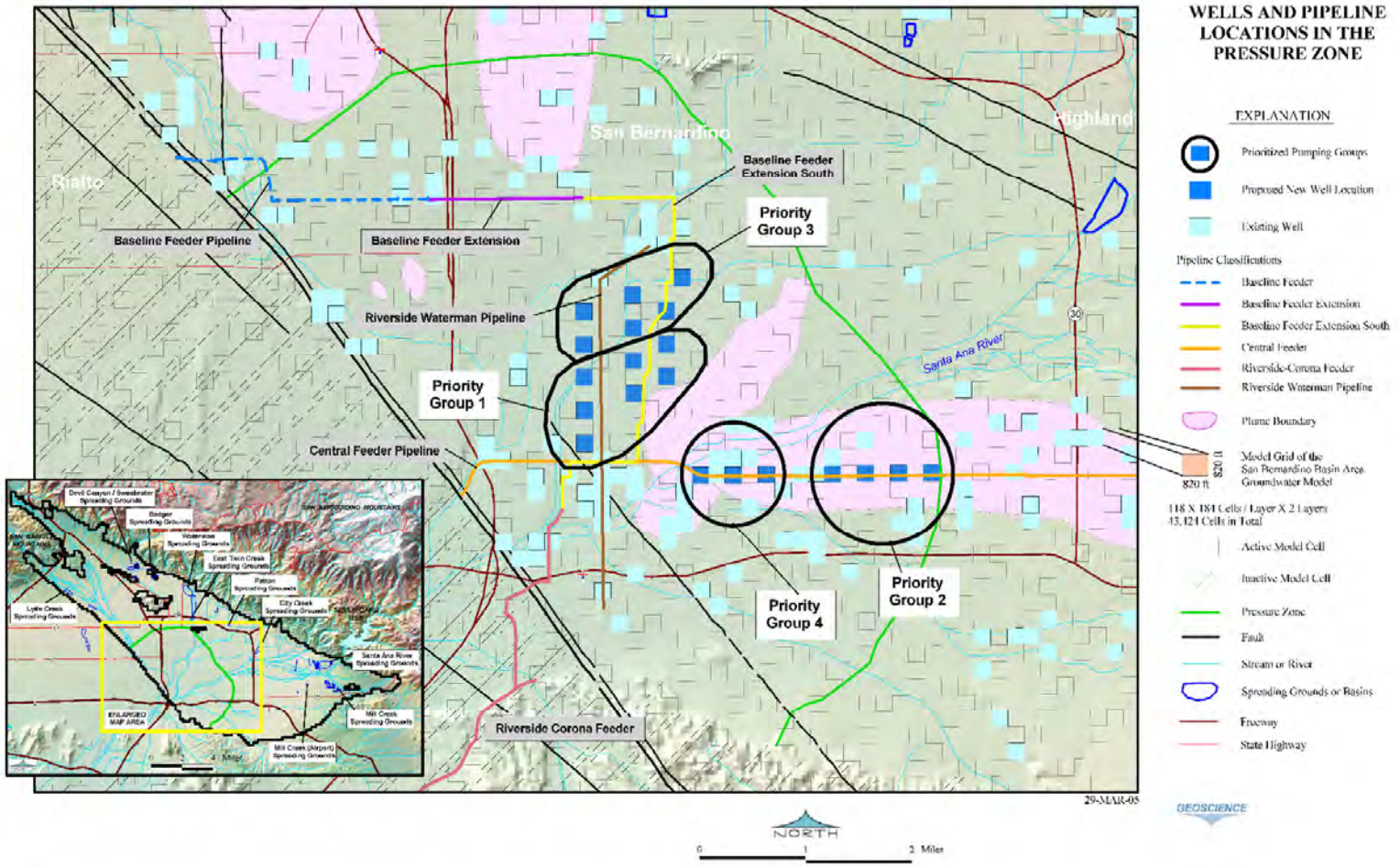
Reach H would begin at the intersection of Fillmore Street and Indiana Avenue in the City of Riverside and will extend up to a 36-inch diameter pipeline southwest for approximately 32,000 feet on Indiana Avenue, northwest on Neece Street, southwest into the City of Corona on Magnolia Avenue, (including 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.

CITY OF ONTARIO
CITY OF FONTANA
CITY OF RIALTO
CITY OF SAN BERNARDINO
CITY OF COLTON
CITY OF GRAND TERRACE
CITY OF LOMA LINDA
CITY OF REDLANDS
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
CITY OF NORCO
CITY OF CORONA
CITY OF RIVERSIDE
CITY OF MORENO VALLEY
CITY OF PERRIS
UCR

CENTRAL FEEDER
Central Feeder Connection
CENTRAL FEEDER
CONNECTION TO SBVMWD
SBVMWD METER &TURNOUT
MENTONE PIPELINE
SBVMWD METER & TURNOUT
Northern Reach
Reach A
Reach B
Reach C
Reach D
Reach E
Reach F
Reach G
Reach H
JCSD/RCSD POINT OF CONNECTION
JCSD POINT OF CONNECTION
Clay Street Connection
Central Reach
TURNOUT No. 1
TURNOUT No. 2
ARLINGTON DESALTER PIPELINE
RIVERSIDE POINT OF CONNECTION
TURNOUT No. 4 ARLINGTON PUMP STATION
RIVERSIDE POINT OF CONNECTION
MILLS WATER TREATMENT PLANT
MILLS PIPELINE
Mockingbird Connection
La Sierra Pipeline
TURNOUT No. 3 MOCKINGBIRD PUMP STATION
TURNOUT No. 5

LEGEND

- Proposed Riverside-Corona Feeder Realignment
- 2005 Project Alignment Alternative (Reaches A - D)
- Reach E, F and G Refinements
- Reach H
- Additional Connections
- Existing Pipelines
- Proposed Pump Stations
- Proposed Reservoir/Tank
- Potential Well Fields
- Freeway
- Roads
- County Line

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

N W E S

0 5,000 10,000 15,000 Feet

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

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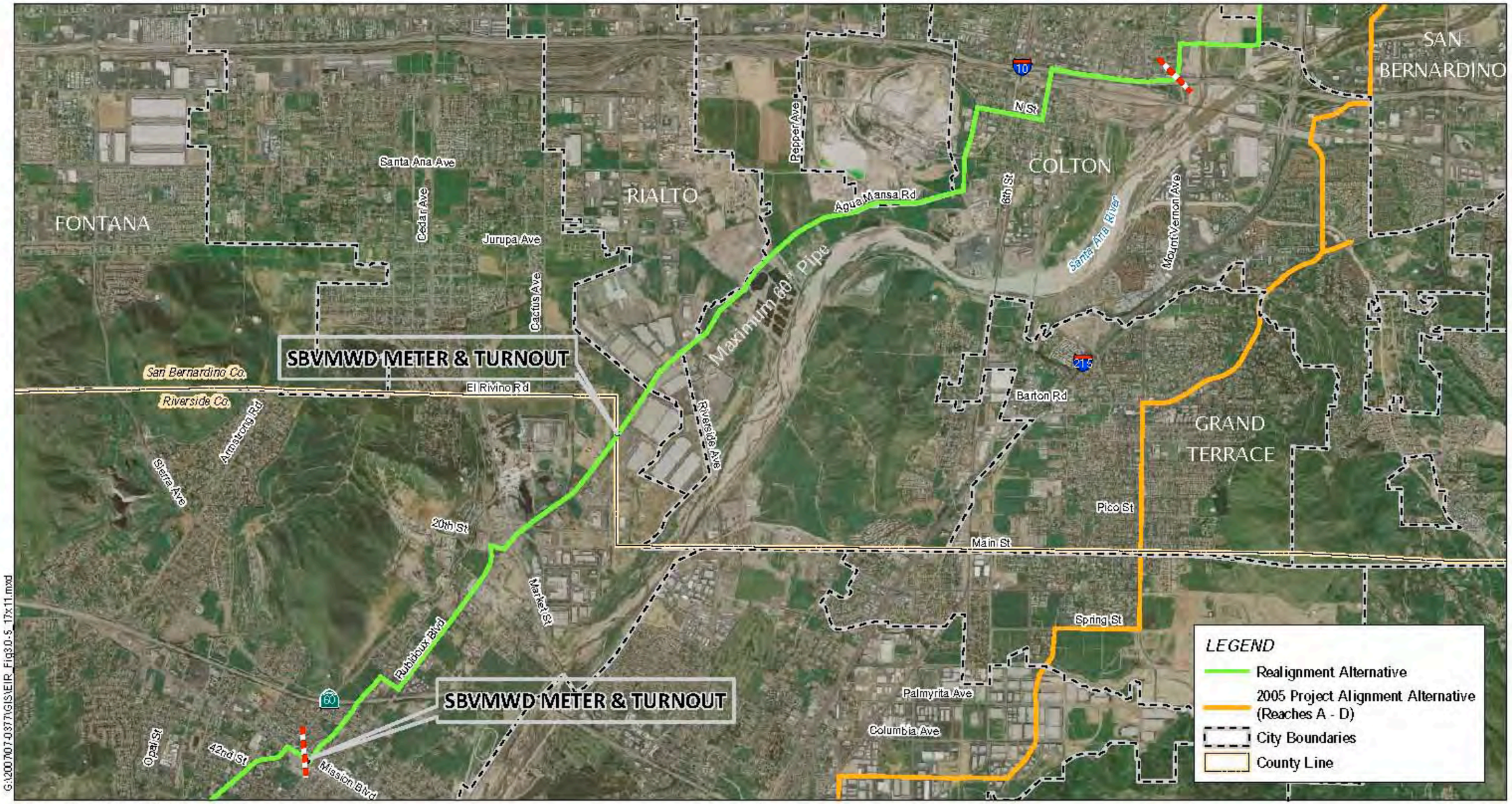
Sources: County of San Bernardino, 2009; Digital Globe, 2008.

N W E S

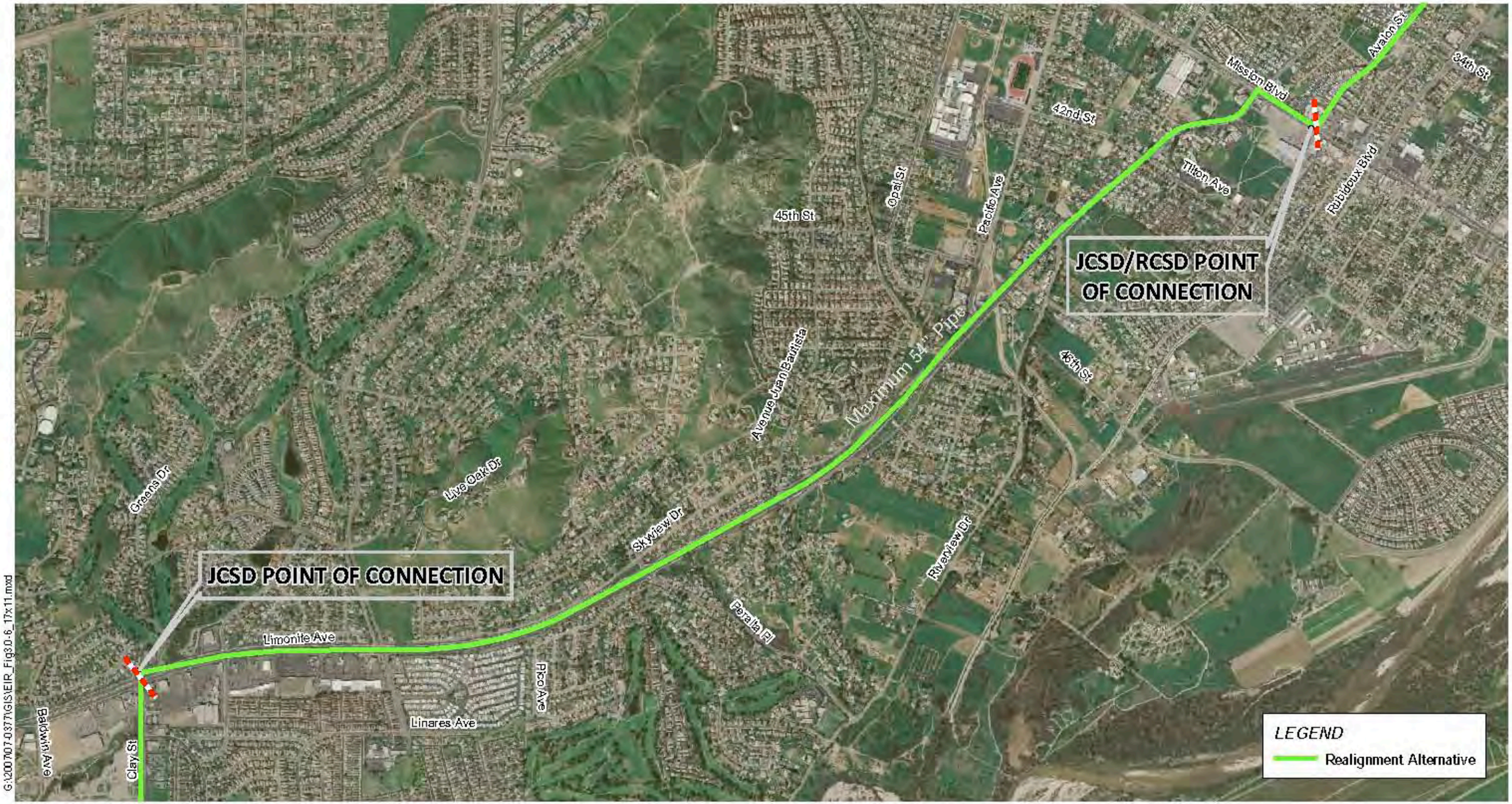
0 1,000 2,000 3,000 Feet

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



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

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



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

N
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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 within the well field identified on **Figure 1.0-1** (exact locations not determined) 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.

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**)

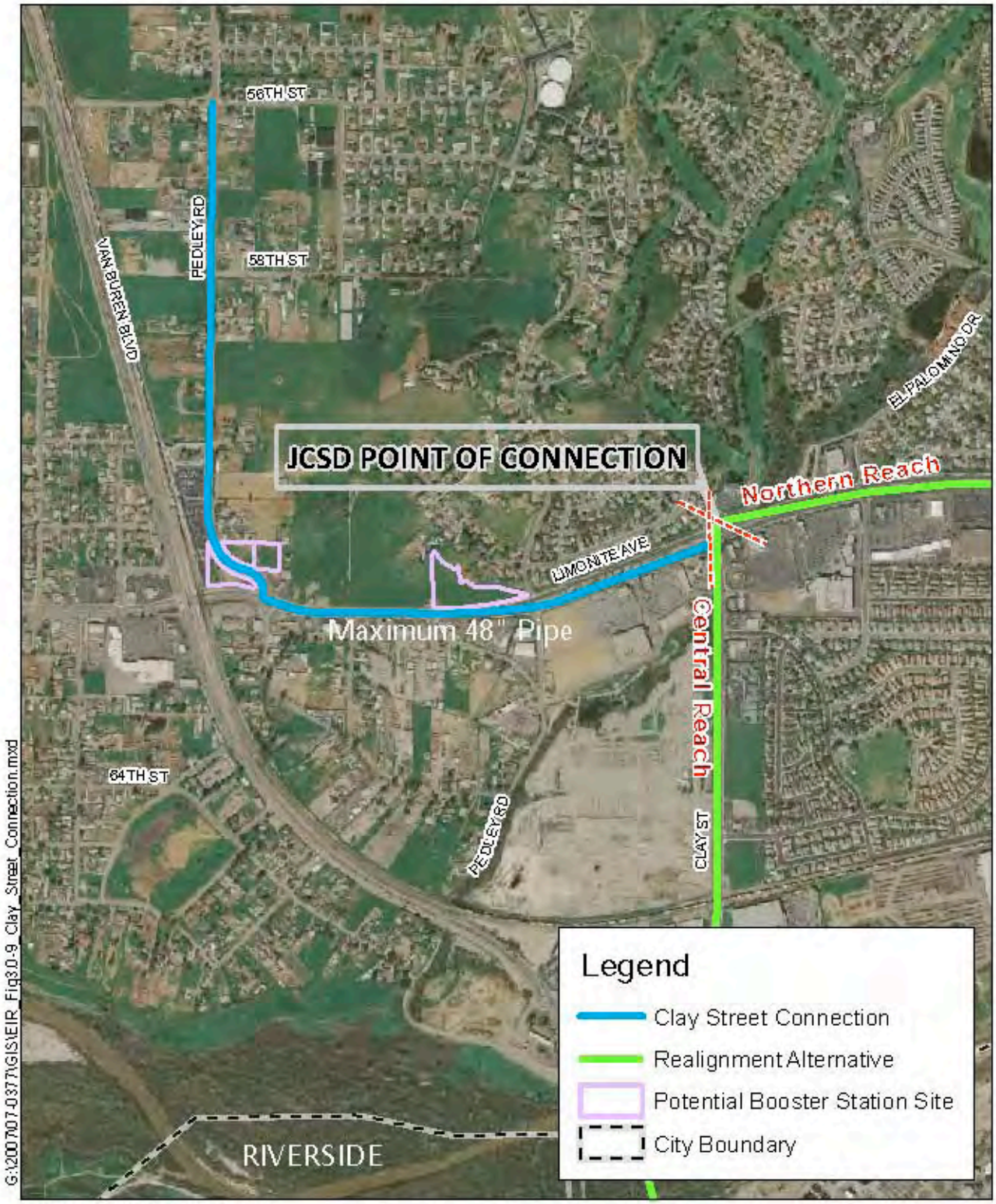
Mockingbird Connection

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**)



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

N W E S

0 1,000 2,000 Feet

Figure 3.0-9
Clay Street Connection

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

N
W E
S
0 500 1,000 Feet

Figure 3.0-10
Mockingbird Connection

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

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Feet

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.

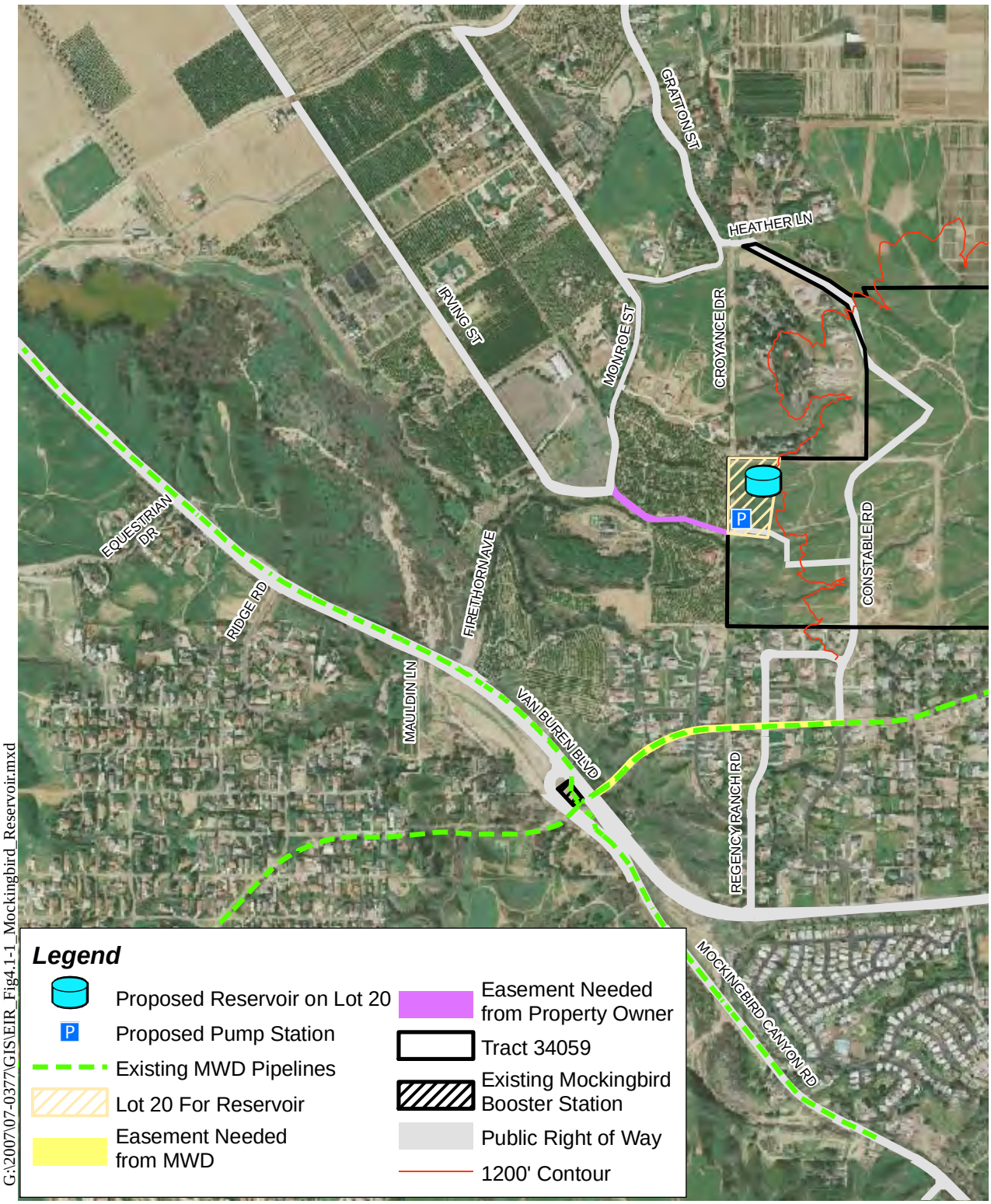
The proposed tank site is not visible from Van Buren Boulevard due to the elevation differences, citrus groves and intervening hills, except for a very short stretch in the vicinity of Equestrian Drive and Ridge Road; the distance from the site and intervening landscape features do not allow Lot 20 to 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.



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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:

- Albert A. Webb Associates, *Air Quality Impact Analysis*, 2009. (Appendix C)
- California Air Pollution Control Officer's Association, *CEQA and Climate Change*, January 2008. (Available at www.capcoa.org, accessed on August 29, 2008.) (CAPCOA)
- California Air Resources Board, *AB 32 Fact Sheet and Timeline-California Global Warming Solutions Act of 2006*, September 25, 2006. (Available at www.arb.ca.gov/cc/cc.htm#factsheets, accessed on August 29, 2008.)
- California Air Resources Board, *Climate Change Scoping Plan*, December 11, 2008. (Available at http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm accessed on January 25, 2010.) (Scoping Plan)
- California Air Resources Board, *Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emission Limit*, November 16, 2007. (Available at www.arb.ca.gov/cc/ccei.htm, accessed on August 29, 2008.) (CARB 2007)
- California Air Resources Board, *Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*, October 24, 2008. (Available at http://www.arb.ca.gov/cc/localgov/ceqa/ceqa.htm, accessed on October 24, 2008.) (CARB 2008)
- California Energy Commission, *Scenarios of Climate Change in California: An Overview*, Publication CEC-500-2005-186-SF, Published December 2005. (Available at www.energy.ca.gov/publications/index.php, accessed on August 29, 2008.) (CEC 2005)

- California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, Publication CEC-600-2006-013-SF, December 2006. (Available at www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF, accessed on August 29, 2008.) (CEC 2006a)
- California Energy Commission, *Our Changing Climate*, Publication CEC-500-2006-077, July 2006. (Available at http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF, accessed on August 29, 2008.) (CEC 2006b)
- California Energy Commission, *Public Health Related Impacts of Climate Change in California*, Publication CEC-500-2005-197-SF, March 2006. (Available at http://www.energy.ca.gov/publications/index.php, accessed on August 29, 2008.) (CEC 2006c)
- California Executive Department, *Executive Order S-3-05 by the Governor of the State of California*, June 2005. (Available at http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm, accessed on August 29, 2008.)
- California State Senate, *Bill Information: SB 1368*, September 29, 2006. (Available at www.sen.ca.gov, accessed on August 29, 2008.)
- California Public Utilities Commission, *News Release: PUC Sets GHG Emissions Performance Standard to Help Mitigate Climate Change*, January 25, 2007. (Available at http://www.cpuc.ca.gov/static/energy/electric/climate+change/070411_ghgeph.htm, accessed on August 29, 2008.)
- Council on Environmental Quality, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, February 18, 2010. (Available at http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa, accessed on April 28, 2010.) (CEQ 2010).
- Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2006*, U.S. Department of Energy, November 2007. (Available at ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057306.pdf, accessed on August 15, 2008.) (EIA)
- Intergovernmental Panel on Climate Change, *Climate Change 2007 – The Physical Science Basis*, 2007. (Available at http://www.ipcc.ch/ipccreports/ar4-wg1.htm) (IPCC)
- Legislative Counsel of California, *Bill Information: AB 32-California Global Warming Solutions Act of 2006*, September 2006. (Available at http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_32&sess=PREV&house=A&author=nunez)
- Legislative Counsel of California, *Senate Bill No. 97, Chapter 185, CEQA, Greenhouse Gas Emissions*, approved August 24, 2007. (Available at http://www.climatechange.ca.gov/publications/legislation/SB_97_bill_20070824_chaptered.pdf)
- South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993. (Available at http://www.aqmd.gov/ceqa/hdbk.html) (SCAQMD 1993)

- South Coast Air Quality Management District, *2007 Air Quality Management Plan*, June 2007. (Available at http://www.aqmd.gov/aqmp/AQMPintro.htm) (SCAQMD 2007)
- South Coast Air Quality Management District, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005. (Available at http://www.aqmd.gov/prdas/aqguide/doc/aq_guidance.pdf) (SCAQMD 2005)
- South Coast Air Quality Management District, *Draft AQMD Staff CEQA Greenhouse Gas Significance Threshold*, October 22, 2008. (Available at http://www.aqmd.gov/ceqa/hdbk.html, accessed on October 23, 2008.) (SCAQMD 2008a)
- South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008. (Available at http://www.aqmd.gov/ceqa/hdbk.html, accessed on October 23, 2008.) (SCAQMD 2008b)
- South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008 (Available at http://www.aqmd.gov/ceqa/handbood/LST/LST.html, accessed on July 18, 2008.) (SCAQMD 2008c)
- State of California, Governor's Office of Planning and Research, *Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, June 19, 2008. (Available at www.opr.ca.gov, accessed on August 29, 2008.) (OPR 2008)
- State of California, Governor's Office of Planning and Research, *CEQA Guideline Amendments*, December 30, 2009. (Available at http://ceres.ca.gov/ceqa/guidelines/, accessed January 25, 2010.) (OPR 2009)
- U.S. Environmental Protection Agency, *Six Common Air Pollutants*, 2005. (Available at www.epa.gov/air/urbanair/6poll.html)
- U.S. Environmental Protection Agency, *40 CFR Part 93, Subpart B: Determining Conformity of General Actions to State or Federal Implementation Plans*. Amended July 17, 2006. (Available at http://ecfr.gpoaccess.gov, accessed December 6, 2009.)
- 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.)

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 percent 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].

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

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 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

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

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 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
Subotal			**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** 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: 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 % 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.

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.

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** 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 a**nd 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.