

- **Board of Directors**
Engineering and Operations Committee

January 10, 2006 Board Meeting

8-2

Subject

Appropriate \$8.59 million; and authorize final design of the Orange County Cross Feeder (Approp. 15428)

Description

The Orange County Cross Feeder will interconnect the East Orange County Feeder No. 2 (EOCF2) and the Second Lower Feeder. This connection will improve operational flexibility and reliability by augmenting the Diemer water treatment plant's service area through delivery of additional treated water from the Jensen water treatment plant. The Orange County Cross Feeder will allow deliveries to be maintained to much of the Diemer service area during emergencies, scheduled shutdowns and outages, and ensure treated water quality. This facility is also key in the timing and scope of future infrastructure improvements being considered in the System Overview Study.

In July 2005, Metropolitan's Board authorized preliminary design of the Orange County Cross Feeder. Three alignments were considered based on several criteria including project cost, length of pipeline, potential environmental concerns, operational factors, and construction risks. From this effort, the alignment along Miraloma Avenue (see [Attachment 3](#)) is recommended because it meets project objectives, offers the fewest environmental and construction risks, and is the least costly alternative.

Orange County Cross Feeder – Final Design (\$8.59 million)

The Orange County Cross Feeder will be an 84-inch diameter pipeline with a length of approximately 2.4 miles. The pipeline will tie into the Second Lower Feeder near Red Gum Avenue in the city of Anaheim, follow public rights-of-way along Miraloma Avenue through primarily industrial areas within Anaheim and Placentia, and connect to the EOCF2 pipeline at Richfield Road in Placentia.

The pipeline will be designed to convey up to 100 cfs into the Diemer service area and to be bi-directional, allowing future Central Pool Augmentation water to be delivered into the Central Pool. The feeder will have two 84-inch sectionalizing valves within vaults, one adjacent to the Yorba Linda Water District's yard at the east end of the feeder, and the other near Carbon Creek Diversion Channel toward the west end of the feeder. The valve vault on the west end will be designed to accommodate future conversion into a pressure control structure.

The majority of the pipeline alignment is within public right-of-way wherein Metropolitan has the right to install facilities. Permanent easements will be required for both valve structures as well as temporary easements along the alignment to accommodate the staging of pipe, materials, and construction equipment. Acquisition of easements will commence during design to ensure that they are available in advance of construction. Acquiring construction easements when installing long reaches of large diameter pipeline are necessary to minimize impacts to traffic, as well as property and business owners. This action includes \$3.8 million for the acquisition of these permanent and temporary easements. This cost is based on the required acreage for the project, the current property values in Orange County, and the duration of the temporary easements. Approximately 3.85 acres will be acquired prior to construction; 3.5 acres will be temporary construction easements and 0.35 acre will be acquired as a permanent easement.

This action appropriates \$8.59 million and authorizes final design of the Orange County Cross Feeder by Metropolitan staff. Design support and drafting services for development of the construction drawings will be performed by MWH Americas, under an existing professional service agreement. The projected cost of final

design as a percentage of the estimated construction cost is approximately 9 percent. Engineering Services' goal for design of projects with construction cost greater than \$3 million is 9 to 12 percent.

This project has been evaluated and recommended by Metropolitan's Capital Investment Plan Evaluation Team and funds have been included within the fiscal year 2005/06 capital budget. Staff plans to return to the Board in November 2006 to recommend award of a construction contract. Award of a procurement contract for the two valves is the subject of a separate board action in January 2006.

Actions and Milestones

November 2006 – Award of Orange County Cross Feeder construction contract

April 2008 – Completion of construction

See [Attachment 1](#) for the Financial Statement, [Attachment 2](#) for the Location Map, [Attachment 3](#) for the Orange County Cross Feeder Pipeline Alignment, [Attachment 4](#) for the Negative Declaration, and [Attachment 5](#) for Comments From Public Review.

Policy

Metropolitan Water District Administrative Code Section 5108: Capital Project Appropriation

California Environmental Quality Act (CEQA)

CEQA determinations for Options #1 and #2:

To comply with CEQA and the State CEQA Guidelines, Metropolitan as the Lead Agency prepared a Negative Declaration (ND) on the Orange County Cross Feeder project. The ND was distributed for a 30-day public review period beginning on October 5, 2005 and ending on November 4, 2005. The ND includes the Initial Study and Environmental Checklist form (see [Attachment 4](#)). [Attachment 5](#) contains comment letters received during the public review period along with responses to those comments. As stated in the State CEQA Guidelines (Section 15074), the Board is required to review and consider the ND, Initial Study, and comments received during the public review prior to the adoption of the ND. Adoption of the ND is dependent on the finding by the Board that, based on the whole record before it, there is no substantial evidence that the Orange County Cross Feeder Project will have a significant impact on the environment, and that the ND reflects the Lead Agency's independent judgment and analysis. All of the above documentation, including other materials that constitute the record of proceedings upon which the Lead Agency decision is based, has been and will be on file at Metropolitan's headquarters located at 700 North Alameda Street, Los Angeles, California 90012.

The CEQA determination is: Review and consider the information in the ND, Initial Study, and comments received during the public review period; find that based on the whole record before the Board that there is no substantial evidence that the Orange County Cross Feeder project will have a significant impact on the environment, and that the ND reflects the Lead Agency's independent judgment and analysis; and adopt the ND for the Orange County Cross Feeder project.

Board Options/Fiscal Impacts

Option #1

Adopt the CEQA determination and

- a. Appropriate \$8.59 million in budgeted funds; and
- b. Authorize final design of the Orange County Cross Feeder.

Fiscal Impact: \$8.59 million in budgeted funds under Approp. 15428

Option #2

Adopt the CEQA determination and do not authorize final design of the Orange County Cross Feeder at this time.

Fiscal Impact: None. This option will forego an opportunity to improve Metropolitan's operational flexibility and to minimize impacts to member agencies during scheduled or emergency shutdowns.

Staff Recommendation

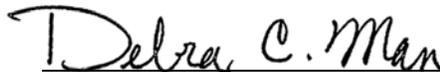
Option #1



Roy L. Wolfe
Manager, Corporate Resources

12/20/2005

Date



Debra C. Man
Interim CEO/General Manager

12/20/2005

Date

Attachment 1 – Financial Statement**Attachment 2 – Location Map****Attachment 3 – Orange County Cross Feeder Pipeline Alignment****Attachment 4 – Negative Declaration****Attachment 5 – Comments From Public Review**

BLA #3981

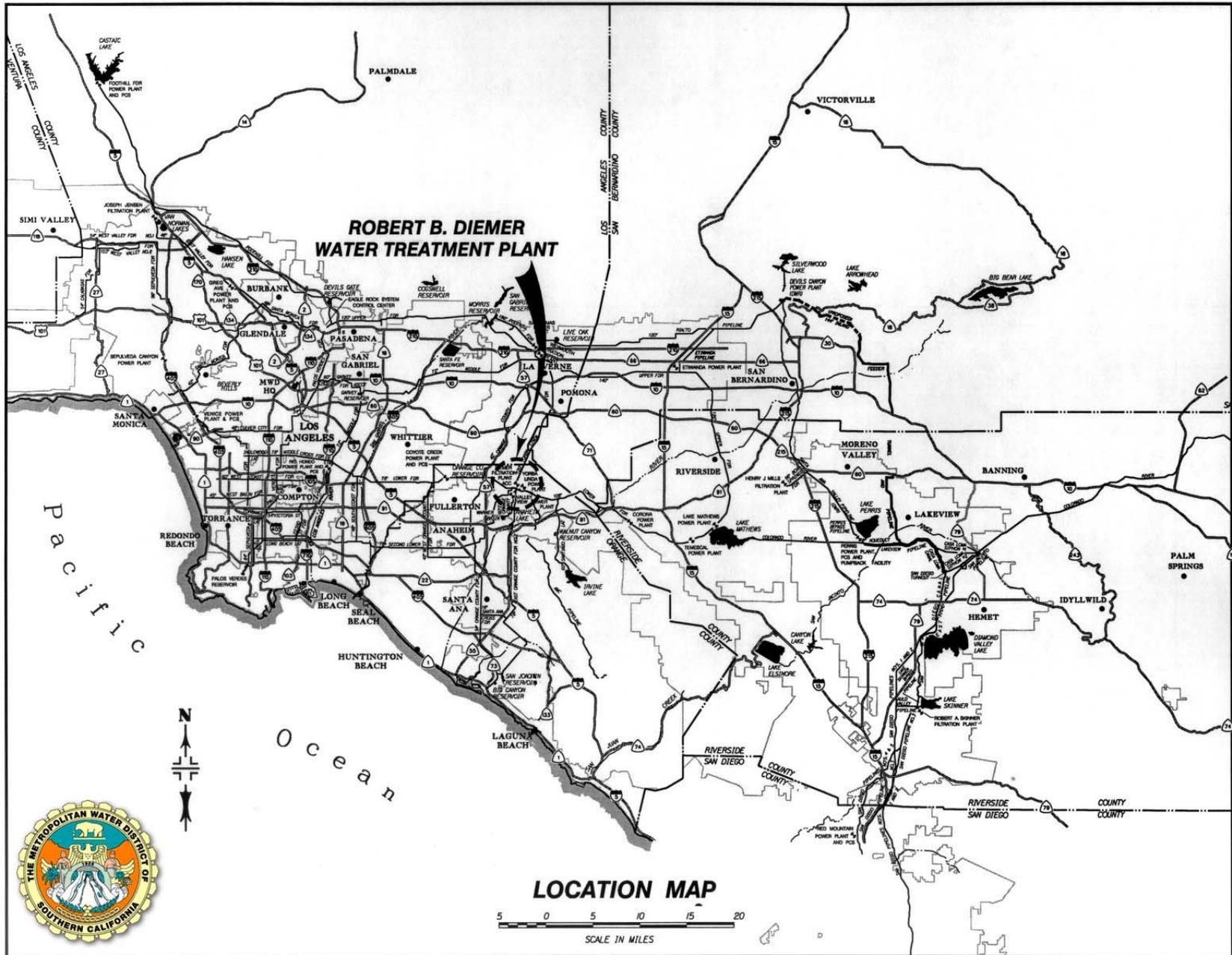
Financial Statement for Orange County Cross Feeder Program

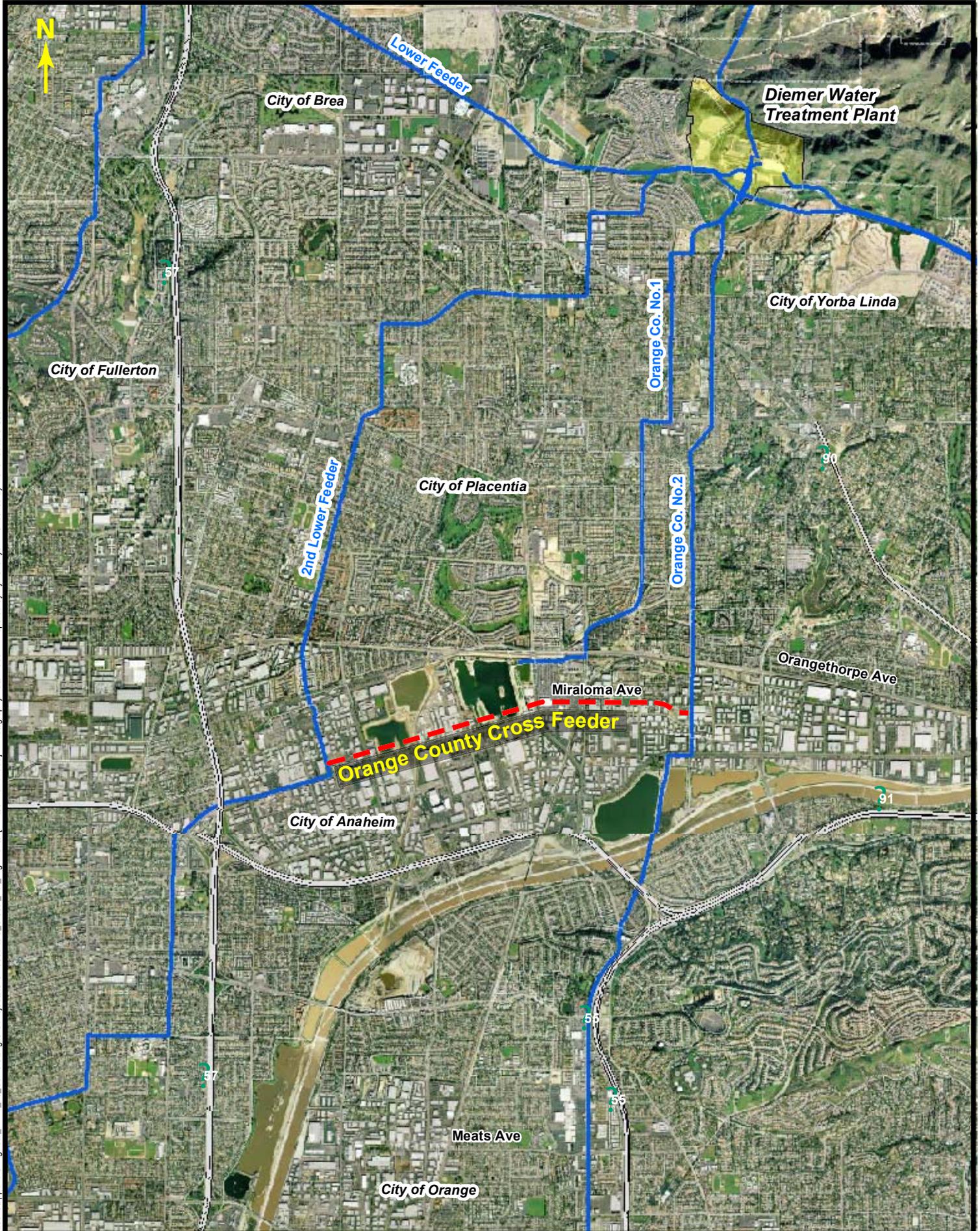
A breakdown of Board Action No. 2 for Appropriation No. 15428 for the Orange County Cross Feeder is as follows:

	Previous Total Appropriated Amount (July 2005)	Current Board Action No. 2 (Jan. 2006)	New Total Appropriated Amount
Labor			
Studies and Preliminary Design	\$ 237,000	\$ -	\$ 237,000
Final Design	-	1,573,000	1,573,000
Owner Costs (Program management, permitting, bid process, right-of-way negotiations)	160,000	503,000	663,000
Construction Inspection and Support Metropolitan Force Construction			
Right-of-Way Easements	-	3,800,000	3,800,000
Materials and Supplies			
Incidental Expenses	-	24,000	24,000
Professional/Technical Services	75,000		75,000
MWH Americas	-	660,000	660,000
Geotechnical Consultant	-	80,000	80,000
Equipment Use			
Contracts			
Remaining Budget	73,000	1,950,000	2,023,000
Total	\$ 545,000	\$ 8,590,000	\$ 9,135,000

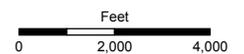
Funding Request

Program Name:	Orange County Cross Feeder		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15428	Board Action No.:	2
Requested Amount:	\$ 8,590,000	Capital Program No.:	05063-S
Total Appropriated Amount:	\$ 9,135,000	Capital Program Page No.:	E-49
Total Program Estimate:	\$ 30,712,000	Program Goal:	Reliability





Orange County Cross Feeder



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ORANGE COUNTY CROSS FEEDER PROJECT

Negative Declaration
Metropolitan Report No. 1277

October 2005



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

**The Metropolitan Water District
of Southern California**

**Negative Declaration
Orange County Cross Feeder Project**

**For additional information
regarding this document contact:**

**The Metropolitan Water District of Southern California
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Metropolitan Report No. 1277

October 2005

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SECTION 1 PROJECT DESCRIPTION

PROJECT INTRODUCTION AND LOCATION

The Metropolitan Water District of Southern California (Metropolitan) proposes the Orange County Cross Feeder Project (Project) in the cities of Anaheim and Placentia, in Orange County, California. Metropolitan is the lead agency, as defined by the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, for this Negative Declaration and Initial Study (ND/IS).

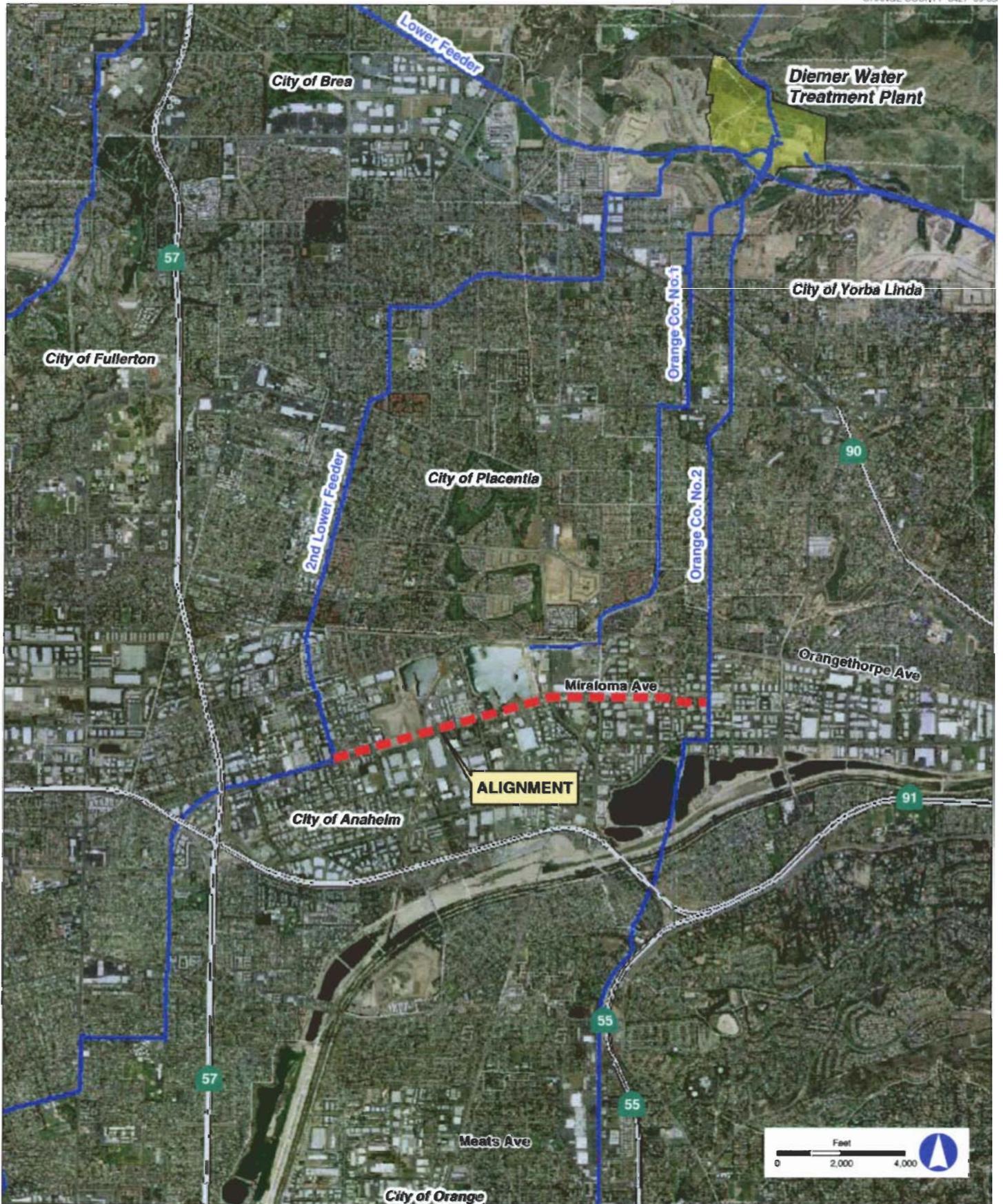
The proposed Project would involve the construction of the Orange County Cross Feeder (OCCF), a 2.36-mile, 84-inch diameter welded steel pipe (WSP) that would connect Metropolitan's Second Lower Feeder to Metropolitan's East Orange County Feeder No. 2 (EOCF2). The proposed Project would be located within and adjacent to the public right-of-way of Miraloma Avenue, from approximately 700 feet east of Red Gum Street, to the intersection of Miraloma Avenue and Richfield Road (**Figures 1 and 2**). At the Carbon Canyon Diversion Channel, the proposed alignment may veer off of the right-of-way to one side of the channel to avoid impacts to an existing bridge support structure. The majority of the proposed Project alignment would be located within the city of Anaheim, except for the most easterly segment, which would be located in the city of Placentia. The proposed alignment would be approximately 40 feet wide by 12,500 feet long and would contain both construction and staging areas. Additional staging areas will be required along or adjacent to Miraloma Avenue to support the construction effort (**Figure 3**). The area of the proposed alignment is bordered to the north and south by industrial uses. Also to the north are two ground water recharge facilities (Anaheim Lake and Kraemer Basin).

The purpose of the proposed Project is to: (1) increase operational flexibility by maximizing deliveries of State Water Project (SWP) supplies into southern Orange County; and (2) increase the reliability of deliveries to Metropolitan's Robert B. Diemer Filtration Plant (Diemer Plant) service area during planned or unplanned shutdowns of the Diemer Plant.

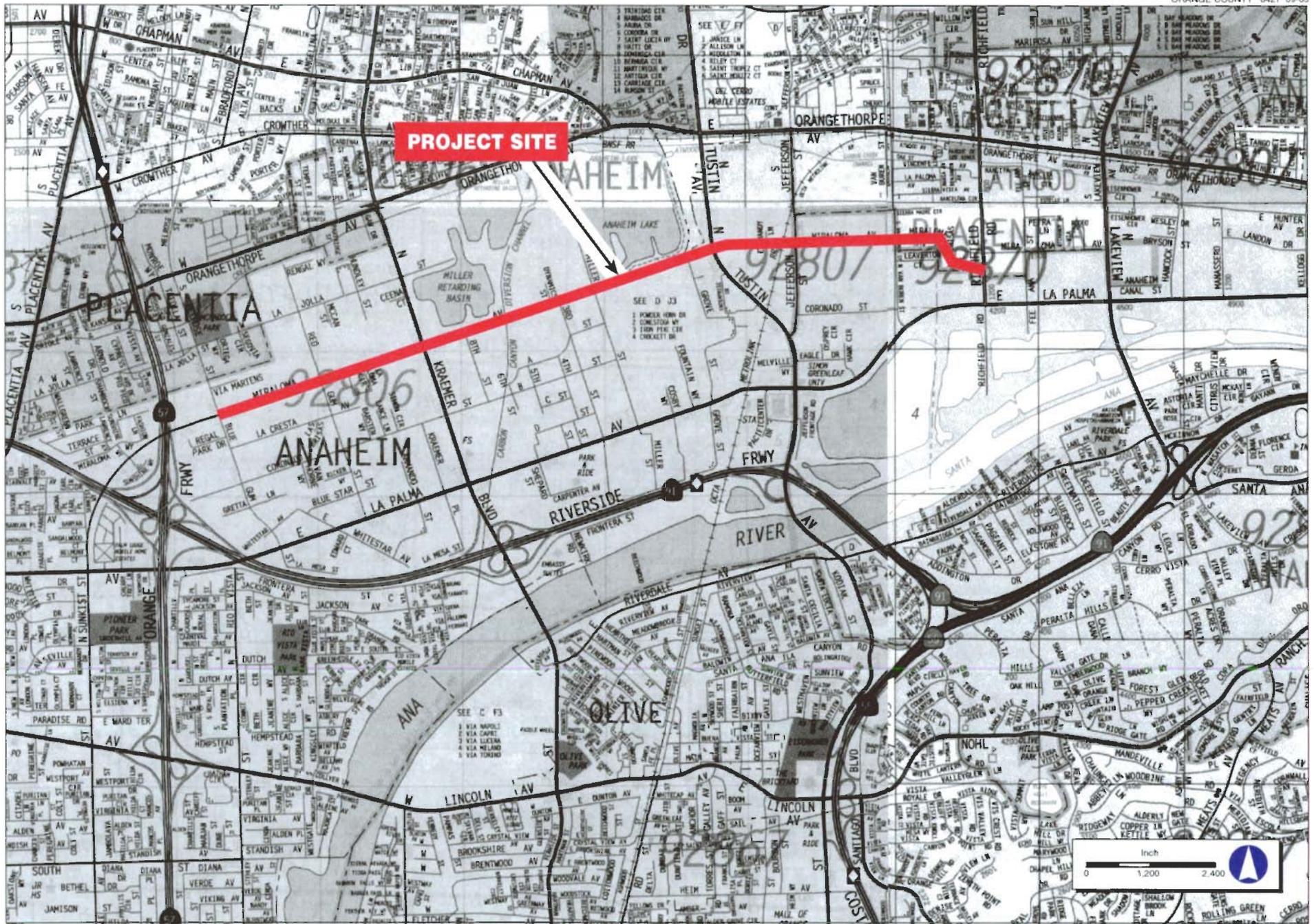
PROJECT BACKGROUND

The south Orange County area of Metropolitan's distribution system receives potable water from Metropolitan's Diemer Plant, located in the city of Yorba Linda. The water filtered through this plant flows from both Metropolitan's 242-mile Colorado River Aqueduct and the SWP's 444-mile California Aqueduct. Treated water is delivered through Metropolitan's Orange County Feeder, EOCF2, and the Allen-McColloch Pipeline.

Metropolitan has been working with the Municipal Water District of Orange County (MWDOC) to address the need to increase the reliability of deliveries to the Diemer Plant service area, given planned maintenance and rehabilitation activities often requiring scheduled shutdowns. Over the next few years, major construction work planned under the Diemer Improvements Program and the Oxidation Retrofit Program (ORP) is expected to require a series of 3- to 7-day plant shutdowns. Because the Diemer Plant is the primary source of treated water for south Orange County, shutdowns of any substantial duration may affect Metropolitan's ability to meet MWDOC demands. In addition, in order to meet resource management and water quality objectives, Metropolitan needs greater system flexibility to deliver higher blends of SPW supplies to the Diemer Plant service area prior to the scheduled completion of the Diemer Plant ORP in 2010. Implementation of the proposed Project would help address these needs.



PROJECT VICINITY MAP
Figure 1



PROJECT LOCATION MAP
Figure 2



No Scale

LEGEND	
	- Proposed Blow-off/Valve Structure
	- Potential Staging Areas
	- Proposed Pipeline Alignment
	- Existing MWD Feeders

POTENTIAL CONSTRUCTION AND STAGING AREAS
Figure 3

PROJECT DESCRIPTION

Introduction

Implementation of the proposed Project would help maximize use of SWP supplies and minimize impacts during Metropolitan's scheduled or emergency shutdowns by providing an interconnection between the Second Lower Feeder and the EOCF2. This interconnection would allow higher blends of SWP supplies to be moved into southern Orange County and increase system reliability by allowing Metropolitan to move water into the Diemer Plant service area during planned or unplanned shutdowns of the Diemer Plant.

Proposed Project Phases

Metropolitan would construct and operate the proposed Project in four phases. These phases, including the specific activities required to accomplish each, are described below.

- Phase 1: Construction of the Pipeline
- Phase 2: Shutdown Activities for Pipeline Connections
- Phase 3: Cleanup and Demobilization
- Phase 4: Operation and Maintenance

Phase 1 - Construction of the Pipeline

The OCCF would be installed using two methods of construction: open trench and tunneling. Open trench construction would occur along the majority of the proposed alignment, except at the Orange County Transportation Authority (OCTA) Metrolink railroad tracks, where tunneling would be required. Tunneling may also occur under the Carbon Canyon Diversion Channel and the two signalized intersections at Kraemer Boulevard and Tustin Avenue. Photographs of segments of the proposed alignment are shown as **Figures 4** through **8**.

Open trench construction would involve the following: (1) fabrication of 84-inch diameter WSP; (2) installation of shoring; (3) excavation of trench and laying of bedding sand in the excavated trench; (4) installation of pipe material within trench; (5) backfill with imported sand and previously excavated soil; and (6) removal and relocation of shoring system.

Tunneling operations would involve the following: (1) fabrication of 84-inch diameter WSP and 108-inch diameter steel casing or liner plate; (2) installation of shoring; (3) excavation of jacking and receiving pits; (4) tunneling with a 108-inch diameter steel casing or liner plate; (5) installation of pipe material within the casing; (6) backfill and grouting of the annulus between the 84-inch pipe and the 108-inch diameter tunnel; and (7) backfill with imported sand and previously excavated soil within the jacking and receiving pits.

The proposed Project would include the construction of various underground appurtenant facilities located along the pipeline alignment, including: two pump well and air release/vacuum valve combined structures; five air release/vacuum valves; two air release valves; six access manholes; one blow-off/valve structure to be adjacent to the Carbon Canyon Diversion Channel; and one valve vault structure at the eastern end of the pipeline. Each of the valve structures would house an 84-inch sectionalizing valve. With the exception of the blow-off/valve structure near the Carbon Canyon Diversion Channel, each of these facilities would have a 36-inch manhole in the street. Each of the air release valves would be located along the sidewalk in above-ground enclosures measuring approximately three feet wide by four feet long by four feet high.



Figure 4. Western End of the Proposed Alignment, Looking East



Figure 5. Carbon Canyon Diversion Channel at Miraloma Avenue



Figure 6. Miraloma Avenue at the OCTA Metrolink Railroad Crossing

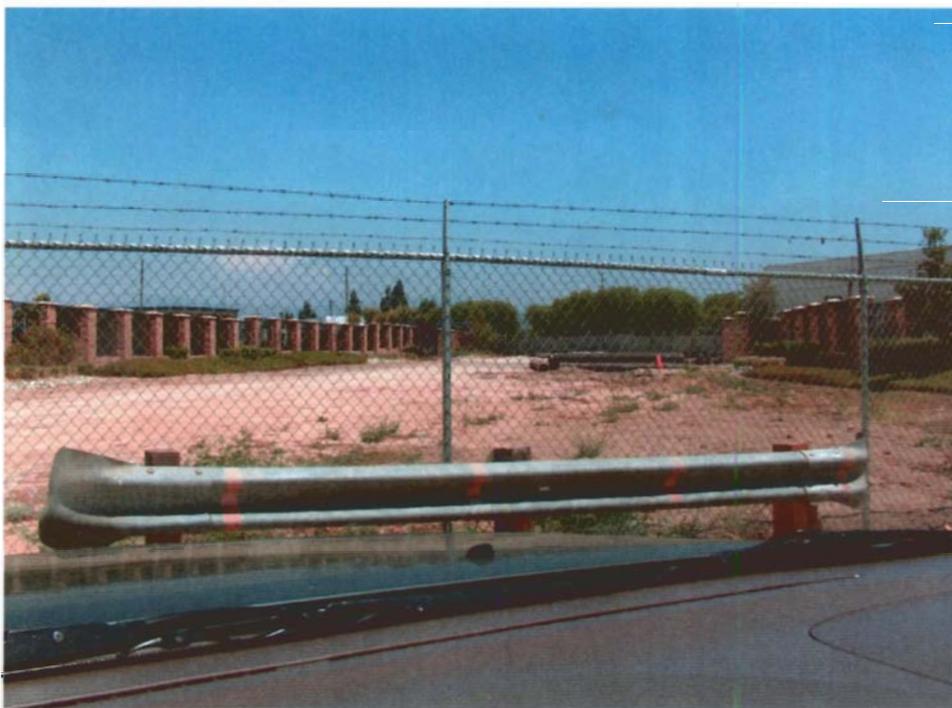


Figure 7. Undeveloped Lot Near the Eastern Boundary of the Proposed Alignment



Figure 8. Eastern End of Proposed Alignment at Richfield Road

The blow-off/valve structure adjacent to the Carbon Canyon Diversion Channel would have two levels, one above ground and one below, and may include a pressure relief structure. The pipeline would enter the structure through the lower portion, which would measure approximately 115 feet long by 75 feet wide. The above ground portion would measure approximately 40 feet long by 25 feet wide by 15 feet high and made out of reinforced concrete. The above ground structure would house the valve operator and associated electrical equipment. Both the above and below ground portions of the blow-off/valve structure would likely be located within the northeastern portion of the property located at 3190 East Miraloma Avenue. Metropolitan would coordinate with the property owner and the city of Anaheim as necessary.

Material and heavy equipment needed for all construction activities and spoil areas would be stored within the closed segments of the public right-of-way and in temporary construction easements along or adjacent to the proposed alignment.

During construction, two lanes of Miraloma Avenue would be left open at all times for traffic flow (one lane in each direction) throughout most of the proposed alignment. In those locations where Miraloma Avenue narrows insufficiently to allow two lanes of traffic to remain open, all or part of the traffic flow would be redirected around that portion of the construction area. Metropolitan would utilize a combination of barricades, signs, and flagmen, as needed, to minimize traffic disruption. All traffic diversions would be coordinated with the cities of Anaheim and Placentia prior to construction. Prior to the commencement of construction activities, a Right-of-Way Construction Permit from the city of Anaheim and a Public Right-of-Way Encroachment Permit from the city of Placentia would be obtained. In addition,

Metropolitan would coordinate with the Orange County Transportation Authority Detour Hotline Group prior to construction. The Hotline group is set up to specifically determine the rerouting of buses prior to construction.

Utilities encountered during construction may need to be relocated. Metropolitan would coordinate with any affected utility owners prior to construction.

Construction of the proposed Project would require approximately 20 workers, who would commute a distance of approximately 30 miles each way.

Installation of Shoring System

A shoring system is a structure that supports the sides of an excavated trench, and is designed to prevent cave-ins and support the ground adjacent to an excavation. The contractor would install a shoring system to minimize the width of excavation required for each trench section and, where the pipeline would be tunneled from, the jacking and receiving pits. The shoring system for the proposed Project would consist of 15- to 20-foot-high vertical walls composed of steel sheeting using either soldier beams and steel plates, or trench boxes. To construct the soldier beam shoring system, the contractor would auger holes to the required depths (approximately 20 to 25 feet), set piles, backfill the annulus of the holes with a slurry (i.e., a mixture of sand-sized solid particles, water, and binder) to set the piles, excavate a narrow trench to the required depth, and install a steel plate behind the piles. This process would continue on both sides of each trench section for the entire length of that section. The trench box shoring system would consist of a steel frame with steel plates to support both sides of the trench, and partially open ends. Multiple trench boxes used end to end would be installed to support a section of trench. The trench box would be installed concurrently with the excavation of the trench by removing soils from within the trench box. Installation of the shoring system would require the use of a crane, an excavator, a drill rig, a loader, two redi-mix trucks, two delivery trucks, and approximately 20 personal vehicles.

Excavation and Sand Bedding Placement

A trench approximately 12 feet wide and 16 feet deep would be excavated between the shoring walls. Excavated material would be stored adjacent to the trench within the closed segment of the public right-of-way for backfill and in temporary construction easements along or adjacent to the proposed alignment. Approximately 51,000 cubic yards of excess excavated soil would be exported off-site and recycled or disposed of in a Class III landfill. Six inches of imported backfill sand would be laid into the trench to act as a “bed” for the new pipe. These activities would require the use of an excavator, two loaders, four trucks for delivery of sand, a water truck, a self-propelled compactor, and approximately 20 personal vehicles.

Installation of Welded Steel Pipe

Once the 12-foot-wide trench has been excavated and shored, and the sand bedding has been placed and compacted, the contractor would install the WSP in manufactured segments. A field inspection by Metropolitan inspectors would be conducted to ensure that the sections of the pipe are properly installed. These activities would require the use of a crane, two pipe delivery trucks, three welding trucks, and approximately 20 personal vehicles.

Backfill

Following the installation of the pipe within the trench, the trench would be backfilled with imported sand and excavated soil. First, the backfill sand would be placed around and above the pipe and compacted with a jet vibrate rig. Then, soils from the trench excavation would be replaced above the sand backfill and compacted using a sheepsfoot roller or self-propelled compactor. These activities would require a loader, two sand trucks, four backfill trucks, a jet vibrate rig, a sheepsfoot roller, a water truck, a bulldozer, and approximately 20 personal vehicles.

Relocation of Shoring System

Removal of the shoring system would be performed in conjunction with the backfill operation. The shoring system would be relocated to the end of the newly installed pipe in order to facilitate the installation of additional pipe segments, or the connection to existing pipelines. Removal of the shoring would require the contractor to first remove the trench plates and piles. These activities would require the use of a crane, an excavator, a bulldozer, two concrete trucks, two welding trucks, and approximately 20 personal vehicles.

Tunneling with Steel Casing or Liner Plate

Once the jacking and receiving pits have been excavated and secured with a shoring system, the contractor would begin the tunneling operations. The tunneling operations would consist of jacking and boring with a 108-inch steel casing or conventional tunneling supported with liner plate, and removing and disposing off-site of the excavated dirt. Tunneling would occur at depths ranging from approximately 20 to 30 feet deep. Welding of the steel casing would be performed concurrently as the jacking and boring operation continues to form a monolithic casing pipe. If conventional tunneling is performed, liner plate would be installed as the tunnel excavation advances. After the steel casing or liner plate is installed, the contractor would inject grout through ports installed within the steel casing or liner plate to ensure that no voids are present outside of the tunnel. Some groundwater dewatering may be required during tunneling operations, particularly adjacent to the Carbon Canyon Diversion Channel and the Metrolink railroad tracks. The tunneling operations would require the use of jack and bore equipment, a crane, a hydraulic ram, grouting equipment, two pipe delivery trucks, two haul trucks, two welding trucks, two redi-mix trucks, and approximately 20 personal vehicles.

Installation of Carrier Pipe within Steel Casing or Liner Plate

Once the steel casing or liner plate has been set in place, the contractor would install an 84-inch carrier pipe within the completed tunnels. The carrier pipe would be set in place within the steel casing or liner plate using spacers to provide a uniform annular space between the carrier and casing pipe. Welding of 84-inch pipe segments would be performed in the working pits prior to installation of the pipe within the tunnel. The installation of the carrier pipe would require a crane, two pipe delivery trucks, two welding trucks, and approximately 20 personal vehicles.

Annular Space Backfill and Grouting

After the carrier pipe is installed in the tunnel, the contractor would backfill the annular space between the carrier pipe and the steel casing or liner plate. The annular space would be backfilled with a concrete mixture. After the concrete backfill has been placed, grouting would be performed from within the carrier pipe to ensure that the annular space is completely filled. The annular space backfill and grouting operations would require the use of a crane, grouting equipment, one welding truck, two redi-mix trucks, and approximately 20 personal vehicles.

Phase 2 - Shutdown Activities for Pipeline Connections

Shutdown activities would consist of: (1) isolation of the existing water system; (2) dewatering of the existing feeder pipe sections; (3) excavation to expose existing pipelines; (4) installation of the proposed pipe and tie-ins; and (5) backfill of sand and previously excavated material.

Isolation of the Water System

Following completion of the construction phase of the pipeline, a portion of the Second Lower Feeder and the EOCF2 would be isolated from the system by closing adjacent valves to the connection points.

Dewatering of Isolated Pipelines

Dewatering would involve the discharge of potable water from both the Second Lower Feeder and the EOCF2. A total of approximately 14 acre-feet of water would be dewatered, 7 acre-feet from each of the two pipelines. Half of the water would be discharged into Atwood Channel in the city of Placentia. The other half would be discharged into a storm drain near the intersection of Vermont Avenue and East Street in the city of Anaheim. Flows would be released at a rate of approximately 15 to 20 cubic feet per second (cfs) and would be dechlorinated prior to release with either sodium thiosulfate or sodium bisulfate.

Excavation to Expose Existing Pipeline

Once the isolated sections of the existing feeder pipelines have been dewatered, the contractor would excavate and expose the existing pipelines at the two connection points. The shoring of these areas would already have been completed during the construction phase. The excavation activities and equipment required would be the same as those described in the construction phase.

Installation of Proposed Pipe and Tie-in

After the two connection points have been excavated and shored, the contractor would install a make-up pipe and connection assembly. Prior to installation, a segment of the existing pipe would be removed and the new pipe and connection assembly joined to the existing pipe. These activities would require the use of a crane, two pipe delivery trucks, three concrete trucks, two welding trucks, and approximately 20 personal vehicles.

Backfill

Once the OCCF pipeline has been connected to the existing pipelines, the trenches would be backfilled. The backfill activities and equipment required would be the same as those described in the construction phase.

Phase 3 – Cleanup and Demobilization

Cleanup and demobilization activities would consist of: (1) removal of the shoring system; and (2) repaving of existing streets.

Removal of the Shoring System

Once the entire alignment has been backfilled, the shoring system would be hauled away from the Project site. Removal of the shoring would require the contractor to first remove the trench plates and piles. This activity would require the use of a crane, an excavator, a bulldozer, two welding trucks, four trucks to transport the plates and piles from the site, and approximately 20 personal vehicles.

Repaving of Existing Streets

Miraloma Avenue would be repaved following completion of the proposed Project, or along sections of the alignment to minimize traffic impacts where construction has been completed as approved by the governing city. This activity would require the use of two trucks to haul aggregate base, two trucks to haul asphalt concrete, a road grader, a water truck, a roller/compactor, an asphalt paver, paving equipment, and approximately 20 personal vehicles.

Phase 4 – Operation and Maintenance

The final phase of the proposed Project would integrate the newly constructed pipeline into Metropolitan's operating and maintenance activities. This would include periodic maintenance and inspection of all the equipment installed on the new feeder, such as air vacuum, blow-off, and sectionalizing valves. As part of these activities, valves would be exercised (i.e., operated through a full cycle, then returned to normal position) to verify proper operation. In general, maintenance activities would be performed annually and would take no more than one day for each valve. Periodic maintenance would be performed using a heavy-duty truck. The pipeline would also be routinely patrolled by Metropolitan as part of normal activities in the Orange County distribution area.

Occasionally, the pipeline would be dewatered for internal inspections or repairs, or to access the adjoining feeders. Dewatered flows would be discharged to the Carbon Canyon Diversion Channel at a rate of approximately 15 to 20 cfs. All flows would be dechlorinated with either sodium thiosulfate or sodium bisulfate prior to discharge.

No additional personnel beyond those currently required to operate and maintain Metropolitan's existing pipelines would be required.

REQUIRED APPROVALS

The following approvals would be obtained, as necessary, prior to implementing the proposed Project.

- California Fish and Game Code Section 1602 Streambed Alteration Agreement (1602 SAA), California Department of Fish and Game (CDFG)
- Clean Water Act (CWA) Section 401 Water Quality Certification, California Regional Water Quality Control Board (CRWQCB)
- CWA Section 404 Permit, U.S. Army Corps of Engineers (Corps)
- Encroachment Permit, County of Orange, Resources and Development Management Department

- Public Right-of-Way Encroachment Permit, city of Placentia, Department of Public Works
- Right-of-Way Encroachment Permit, city of Anaheim, Department of Public Works
- *General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De Minimum) Threat to Water Quality (General Permit), CRWQCB*
- National Pollutant Discharge Elimination System (NPDES) *General Permit for Storm Water Discharges Associated with Construction Activity (General Permit), State Water Resources Control Board (SWRCB)*

PROJECT SCHEDULE

Construction activities at the Project site are anticipated to occur for a period of approximately 16 months, from December 2006 through March 2008. For work in the city of Anaheim, all construction activities, except dewatering and tie-in activities, would occur between 7:00 AM to 7:00 PM daily. For work in the city of Placentia, all construction activities, except dewatering and tie-in, would occur between 7:00 AM to 7:00 PM weekdays, and between 9:00 AM and 6:00 PM on Saturdays. Dewatering would take approximately 4 to 6 hours for the Second Lower Feeder and up to 12 hours for the ECOF2, and tie-in activities would take approximately 7 days at each location.

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SECTION 2 INITIAL STUDY

This ND complies with Section 21064.5 of the California Public Resources Code (California Environmental Quality Act) and Article 6 of the State CEQA Guidelines (14 California Code of Regulations). The following IS, Environmental Checklist, and evaluation of potential environmental effects (see Section 3) were completed in accordance with Section 15063(d) of the State CEQA Guidelines to determine if the proposed Project could have any potentially significant effect on the physical environment, and, if so, what mitigation measures would be imposed to reduce such impacts to less-than-significant levels.

An explanation is provided for all determinations, including the citation of sources as listed in Section 5. A "No Impact" or a "Less than Significant Impact" determination indicates that the proposed Project would not have a significant effect on the physical environment for that specific environmental category. No environmental category for this evaluation was found to be potentially affected in a significant manner by the proposed Project.

INITIAL STUDY AND ENVIRONMENTAL CHECKLIST FORM

- | | |
|--|--|
| 1. Project Title: | Orange County Cross Feeder Project |
| 2. Lead Agency Name and Address: | The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, CA 90012 |
| 3. Contact Person, Phone Number, and Email: | Anthony A. Klecha, (213) 217-5528
aklecha@mwdh2o.com |
| 4. Project Location: | The proposed Project would be located within and adjacent to the public right-of-way of Miraloma Avenue, from approximately 700 feet east of Red Gum Street, to the intersection of Miraloma Avenue and Richfield Road, within the cities of Anaheim and Placentia, in Orange County, California |
| 5. Project Sponsor's Name and Address: | The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, CA 90012 |
| 6. General Plan Land Use Designation: | City of Anaheim: Industrial, General Commercial, and Water; ¹ city of Placentia: Industrial ² |

¹ City of Anaheim. *The City of Anaheim General Plan*. May 25, 2004. Land use is also governed by Specific Plan No. 94-1 (Northeast Area), which is contained in Chapter 18.120 of the Anaheim Municipal Code.

² City of Placentia. *The City of Placentia General Plan, Land Use Element, Exhibit 5*. May 1989.

- 7. Zoning:** Northeast Area Specific Plan No. 94-1³
Zone M (Manufacturing) with a Zone O (Oil Combining Overlay District) and a Zone PMD (Planned Manufacturing Combining Overlay District)⁴
- 8. Description of Project:** Refer to Project Description in Section 1 of this ND.
- 9. Surrounding Land Uses and Setting:** The proposed Project alignment is bordered to the north and south by industrial uses. Also to the north are two ground water recharge facilities (Anaheim Lake and Kraemer Basin).
- 10. Other agencies whose approval is required:** Refer to Project Description in Section 1 of this ND.

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by the proposed Project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages:

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

³ City of Anaheim. *The City of Anaheim Zoning Code*. May 25, 2004. Specific Plan No. 94-1, contained in Chapter 18.120 of the Zoning Code, provides various development standards for a Regional Industrial Center that include industrial activities and service and commercial support facilities.

⁴ City of Placentia. *Zoning Map*, May 1998.

DETERMINATION: (To be completed by lead agency)

On the basis of this initial evaluation:

- I find that the proposed Project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Laura J. Simonek
Signature

Sept. 29, 2005
Date

Laura J. Simonek
Printed Name

The Metropolitan Water District of
Southern California
For

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SECTION 3 EVALUATION OF ENVIRONMENTAL IMPACTS

I. AESTHETICS – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** No designated scenic vistas or state scenic highways overlook the proposed Project site.⁵ Except for a potential veering of the alignment at the Carbon Canyon Diversion Channel, a small vacant field near the easterly boundary of the alignment, and potential staging areas along or adjacent to Miraloma Avenue, the Project site would be located entirely within the right-of-way of Miraloma Avenue within the cities of Anaheim and Placentia. A mix of industrial and water recharge uses that are not within scenic area designations borders the alignment. Therefore, the proposed Project would not affect a scenic vista. No impact would occur.
- b) **No Impact.** The proposed Project would occur within and adjacent to the right-of-way of Miraloma Avenue within the cities of Anaheim and Placentia, located in an industrial and water recharge use area. Implementation of the proposed Project would not affect any historic buildings, rock outcroppings or other scenic resources. Hence, the proposed Project would have no impact on existing scenic resources.
- c) **Less than Significant Impact.** The proposed Project would include the construction of approximately nine metal cabinets along the sidewalk of Miraloma Avenue that would house the air release and vacuum valves, as well as approximately seventeen 36-inch manholes in the street that would permanently alter the existing visual character of the site and its surroundings. Although these structures would be visible, they would be relatively small in size (the cabinets would measure approximately three feet wide by four feet long by four feet high), and thus would not substantially degrade the visual character of the Project site. A bi-level blow-off/valve structure would be likely located next to the Carbon Canyon Diversion

⁵ City of Anaheim. *The City of Anaheim General Plan, Circulation Element*. May 25, 2004; and City of Placentia. *The City of Placentia General Plan, Circulation Element*. June 1, 1982.

Structure in the far northeast portion of the parking lot at 3190 East Miraloma Avenue. The structure would appear as a small building and would measure approximately 40 feet long by 25 feet wide by 15 feet high. The finish materials would be reinforced concrete. Because this structure would be located within an industrial area, the structure would not detract from the character of the area and impacts would be less than significant.

During the construction period, heavy equipment involved in the trenching and tunneling operations, as well as temporary stockpiles of soil would appear, resulting in a temporary visual intrusion that would be out of character with the normal traffic environment along Miraloma Avenue. Once construction is completed, the roadway would be repaved to pre-construction conditions and appearance. Other than the appurtenant structures described above, no evidence of the pipeline installation would be visible. Therefore, impacts would be less than significant.

- d) **No Impact.** The proposed Project would not create a new source of substantial light or glare. During construction, the bulk of any light or glare would be contained internal to the pipeline trenches or tunnels. No light or glare impacts would occur with as a result of operation of the pipeline. Therefore, implementation of the proposed Project would have no impact.

II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1977) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a), b) & c) Less than Significant Impact. There are no agricultural resources or operations within the boundary of the proposed Project. The land uses immediately adjacent to the Project alignment are developed with industrial and commercial uses. The proposed Project would be conducted within and adjacent to the fully improved right-of-way of Miraloma Avenue except for a small portion of undeveloped land near the eastern boundary of the alignment. Therefore, no Farmland would be converted and no lands enrolled under the Williamson Act would be impacted. Moreover, due to the nature and location of the proposed Project, combined with a lack of agricultural resources in the Project vicinity, the implementation of the proposed Project would not induce Farmland to be converted to non-agricultural uses. No impacts to agricultural resources for the Project alignment construction would occur.

The potential staging area located off of Van Buren Street is designated as Agricultural Use per the city of Anaheim.⁶ If this site is used for staging, there may be a temporary loss of agricultural product. However, due to the small size of the area and the temporary nature of the activity, the impact would be less than significant.

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

⁶ City of Anaheim. *Anaheim General Plan/Land Use Zoning Update EIR*. May 2004.

Discussion:

- a) **No Impact.** The proposed Project would be situated within the South Coast Air Basin (SCAB). The South Coast Air Quality Management District (SCAQMD) is the regional agency empowered to regulate stationary and certain mobile air emission sources within the SCAB. The proposed Project would involve the construction and operation of approximately 2.36 miles of pipeline and associated appurtenant facilities. The purpose of the proposed Project would be to increase operational flexibility by maximizing deliveries of SWP supplies, and to increase the reliability of the deliveries to the Diemer Plant service area. The Project would not create significant quantities of either short- or long-term criteria pollutants or would it result in significant concentrations of localized pollutants at receptor locations. As such, the Project would be consistent with the goals of the SCAQMD's Air Quality Management Plan (AQMP).^{7 8} Therefore, no impact would occur.
- b) **Less than Significant Impact.** During construction, air pollutant emissions associated with the proposed Project would occur over the short-term. Once installed, the Project would operate with minimal emissions associated with routine maintenance and inspections. Periodic maintenance would be performed on all equipment installed on the new feeder, such as the air release/vacuum and blow-off valves. Maintenance activities would generally be performed annually, would take no more than one day for each valve structure, and would typically require the use of a heavy-duty truck. Routine inspections would consist of a patroller driving along the alignment in a light-duty pick-up truck making visual observations.

Standards of Significance*Mass Emissions Thresholds for Construction*

The following significance thresholds for construction emissions have been established by the SCAQMD.⁹ Projects located within the SCAB with construction-related emissions that exceed any of these emission thresholds would be considered to be significant.

- 550 pounds per day of Carbon Monoxide (CO)
- 100 pounds per day of Oxides of Nitrogen (NO_x)
- 75 pounds per day of Reactive Organic Gases (ROG)
- 150 pounds per day of Oxides of Sulfur (SO_x)
- 150 pounds per day of Respirable Particulate Matter (PM₁₀)

⁷ South Coast Air Quality Management District. *SCAQMD CEQA Air Quality Handbook*, April 1993.

⁸ South Coast Air Quality Management District. Final 2003 AQMP, August 1, 2003.

⁹ South Coast Air Quality Management District. *Final Localized Significance Threshold Methodology*, June 2003.

Mass Emissions Thresholds for Operations

Specific criteria for determining whether the potential air quality impacts of a project are significant are set forth in the SCAQMD *Handbook*.¹⁰ The criteria include emissions thresholds, compliance with state and national air quality standards, and conformity with the existing State Implementation Plan (SIP) or consistency with the current AQMP. The daily operational emissions significance thresholds are as follows.

- 550 pounds per day of CO
- 55 pounds per day of NO_x
- 55 pounds per day of ROG
- 150 pounds per day of SO_x
- 150 pounds per day of PM₁₀

Projects in the SCAB with operation-related emissions that exceed any of the emission thresholds would be considered to be significant.

Local Emission Standards

- California State 1-hour CO standard of 20.0 parts per million (ppm)
- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour Nitrogen Dioxide (NO₂) standard of 0.25 ppm

Short-term Air Quality Impacts

Mass Daily Emissions

Construction activities would result in the generation of air pollutants. These emissions would primarily be: (1) exhaust emissions from powered construction equipment; (2) dust generated from earthmoving, excavation, and other construction activities; and (3) motor vehicle emissions associated with worker and haul trips.

The proposed Project would involve the construction of approximately 2.36 miles of welded steel pipeline and associated appurtenant facilities with construction scheduled over a 15-month period. Construction activities would consume diesel fuel and thus produce combustion by-products. These emissions would vary with the Project phasing and were estimated using SCAQMD emissions factors. Emissions generated during major Project phase are shown in **Table 1. Appendix A-1** contains the construction emissions spreadsheet calculations. No construction-related emissions would exceed their respective threshold values. As such, the impact would be less than significant.

¹⁰ South Coast Air Quality Management District. *SCAQMD CEQA Air Quality Handbook*, April 1993.

TABLE 1
PROJECTED CONSTRUCTION EMISSIONS (LB/DAY)

Source	CO	NOx	ROG	SOx	PM ₁₀
Installation of Shoring					
Equipment	50.1	73.1	8.1	6.2	4.5
Haul trucks and Worker Vehicles	42.5	2.1	5.8	0.0	0.1
Fugitive Dust	---	---	---	---	5.0
Total	92.6	75.2	13.9	6.2	9.6
SCAQMD Daily Threshold	550	100	75	150	150
Exceeds Threshold?	No	No	No	No	No
Backfill					
Equipment	31.1	54.8	5.9	5.1	2.8
Haul trucks and Worker Vehicles	43.3	2.7	5.9	0.0	0.1
Fugitive Dust	---	---	---	---	5.0
Total	74.4	57.5	11.8	5.1	7.9
SCAQMD Daily Threshold	550	100	75	150	150
Exceeds Threshold?	No	No	No	No	No
Relocation of Shoring					
Equipment	25.0	54.1	4.9	5.0	3.0
Haul trucks and Worker Vehicles	42.5	2.1	5.8	0.0	0.1
Fugitive Dust	---	---	---	---	5.0
Total	67.5	56.2	10.7	5.0	8.1
SCAQMD Daily Threshold	550	100	75	150	150
Exceeds Threshold?	No	No	No	No	No
Tunneling					
Equipment	37.4	51.9	6.5	4.5	3.3
Haul trucks and Worker Vehicles	44.2	3.2	6.1	0.0	0.1
Fugitive Dust	---	---	---	---	5.0
Total	81.6	55.1	12.6	4.5	8.4
SCAQMD Daily Threshold	550	100	75	150	150
Exceeds Threshold?	No	No	No	No	No

Removal of Shoring					
Equipment	25.0	54.1	4.9	5.0	3.0
Haul trucks and Worker Vehicles	43.3	2.7	5.9	0.0	0.1
Fugitive Dust	---	---	---	---	5.0
Total	68.3	56.8	10.8	5.0	8.1
SCAQMD Daily Threshold	550	100	75	150	150
Exceeds Threshold?	No	No	No	No	No

¹ Includes PM₁₀ for both exhaust and dust.

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993. California Air Resources Board, EMFAC2002 Emissions Model.

During construction, the proposed Project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities, per se, but rather sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the SCAB. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM₁₀ concentration impact at the property line of more than 50 micrograms per cubic meter as determined through PM₁₀ high-volume sampling. The concentration standard and associated PM₁₀ sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

The analysis assumes the application of those dust control measures included in Rule 403 and applies a 50 percent control efficiency for fugitive dust. Because the dust control measures are required under Rule 403 (as opposed to elective), they are included in the analysis and not considered as mitigation.

Localized Impacts

In addition to the mass daily threshold standards, construction of the proposed Project would have the potential to affect localized ambient concentrations. Raising localized ambient concentration of emissions could present a significant impact if these concentrations were to exceed the ambient air quality standards at receptor locations.

The potential for this impact was evaluated through dispersion modeling. In accordance with the SCAQMD criteria, peak daily emissions for CO and NO_x were modeled to determine their concentrations and their contributions to the ambient concentrations within the proposed Project vicinity. The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology (Methodology)* (SCAQMD June 2003).¹¹ Modeling is performed using the USEPA SCREEN3 dispersion model.

¹¹ South Coast Air Quality Management District. *Final Localized Significance Threshold Methodology (Methodology)*, June 2003.

In the *Methodology*, the SCAQMD notes receptor locations as “off-site locations where persons may be exposed to the emissions from project activities. Receptor locations include residential, commercial and industrial land use areas; and any other areas where persons can be situated for an hour or longer at a time.”

Quoting from the *Methodology*, “For the purposes of CEQA analysis, the SCAQMD considers a sensitive receptor to be to be [sic] a receptor such as residence, hospital, convalescent facility were [sic] it is possible that an individual could remain for 24 hours. Commercial and industrial facilities are not included in the definition of sensitive receptor because employees do not typically remain onsite for a full 24 hours, but are present for shorter periods of time, such as eight hours.”

Therefore, applying a 24-hour standard for PM₁₀ is not appropriate, not only because the averaging period for the state is 24 hours, but because, according to the SCAQMD’s definition, the sensitive receptor would need to be present at the location for the full 24 hours. As noted, the proposed Project would be located in a industrial/commercial area. No sensitive land uses are located in the Project area. However, because CO and NO₂ are based on 1- and 8-hour standards, the ambient air quality standards would apply.

In accordance with the *Methodology*, receptors are assumed to be located at distances of 25, 50, 100, 200, and 500 meters. A worst-case distance concentration is also modeled. In cases where proximate receptors may be closer than 25 meters, as per the *Methodology*, a value of 25 meters is to be used in the analysis as a worst-case scenario.

The projected concentration is then added to an assumed ambient concentration. This ambient concentration is source-area dependent and is to be based on the peak value observed over the last three years of accumulated data.

Table 2 presents the peak daily projected construction emissions, as well as the projected concentrations at the various distances referenced in the *Methodology*. All emissions would be within their allowable concentration levels and any potential impacts would be less than significant. A more complete discussion of the methodology is included in **Appendix A-2**.

Long-Term Air Quality Impacts

Operational emissions typically center on mobile sources, and specifically those trips generated from the operation of a project. In this case, once installed, the proposed Project would operate with minimal emissions associated with routine maintenance and inspections. Periodic maintenance would be performed on all equipment installed on the new feeder, such as the air release/vacuum and blow-off valves. Maintenance activities would generally be performed annually, would take no more than one day for each valve structure, and would typically require the use of a heavy-duty truck. Routine inspections would consist of a patroller driving along the alignment in a light-duty pick-up truck making visual observations. No additional personnel beyond those currently required to operate and maintain Metropolitan’s existing pipelines would be required. Therefore, long-term air quality impacts would be less than significant.

- c) **Less than Significant Impact.** In accordance with SCAQMD methodology, any project that does not exceed the daily threshold values, or that can be mitigated to less than the daily threshold values, does not add significantly to a cumulative impact. The proposed Project would be of a size such that no significant impacts would occur during either construction or the subsequent operation. As such, the proposed Project would not add significantly to any cumulative impact.

**TABLE 2
LOCALIZED CONSTRUCTION IMPACT EMISSIONS**

Source	CO (1-Hr Conc.) ¹	CO (8-hr conc.) ²	NO ₂ (1-hr conc.) ³
Peak Daily Emissions (lb/day)	62.6	62.6	97.3
Concentration at 25 meters (ppm)	10.36	4.65	0.19
Concentration at 50 meters (ppm)	10.55	4.79	0.21
Concentration at 100 meters (ppm)	10.56	4.79	0.22
Concentration at 200 meters (ppm)	10.28	4.59	0.21
Concentration at 500 meters (ppm)	10.07	4.45	0.19
Worst-Case Concentration (ppm)	10.56 ppm @ 100 meters	4.79 ppm @ 100 meters	0.22 ppm @ 100 meters
Ambient Air Quality Standard	20 ppm	9.0 ppm	0.25
Exceeds Standard?	No	No	No

¹ Includes a background concentration of 10 ppm.

² Includes a background concentration of 4.4 ppm.

³ Includes a background concentration of 0.16 ppm.

- d) **Less than Significant Impact.** The SCAQMD defines sensitive receptors as residential areas, schools, playgrounds, health care facilities, day care facilities, and athletic facilities. There are no sensitive receptors proximate to the proposed Project alignment. As demonstrated in b) above, the Project would not result in pollutant concentrations in excess of the ambient air quality standards when modeled in accordance with the *Final Localized Significance Threshold Methodology*.¹² As such, the Project would not expose receptors to substantial pollutant concentrations during the construction or operational phases of the Project. Impacts would be less than significant.

- e) **Less than Significant Impact.** Project construction would involve the use of heavy equipment creating exhaust pollutants from construction activities and from trucks hauling materials to and from the Project site. With regards to nuisance odors, any air quality impacts associated with the construction equipment would be confined to the immediate vicinity of the equipment itself. By the time such emissions would reach any sensitive receptor sites they would be substantially diluted. Nevertheless, an occasional "whiff" of diesel exhaust from trucks accessing the site from public roadways could result. Following pipeline installation, Miraloma Avenue would be repaved, potentially creating objectionable odors that may be detectable at the neighboring industrial/commercial land uses. However, any odors created by repaving would be relatively minor and short-term. As such, objectionable odors created by the proposed Project would be less than significant.

¹² South Coast Air Quality Management District. *Final Localized Significance Threshold Methodology*, June 2003.

IV. BIOLOGICAL RESOURCES – Would the project:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
a) 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. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** The proposed Project site would primarily be located within a fully developed right-of-way (i.e., Miraloma Avenue) within the cities of Anaheim¹³ and Placentia.¹⁴ Land uses adjacent to the proposed Project site consist of a combination of industrial and commercial uses. At the Carbon Canyon Diversion Channel, the alignment may veer off of the right-of-way to avoid impacts to the existing bridge supports. In addition, a blow-off/valve structure would likely be located adjacent to the channel within the northeastern portion of the property located at 3190 East Miraloma Avenue. Near the eastern boundary of the proposed alignment, the pipeline would cross a small, undeveloped field. Temporary construction staging areas would be located along and adjacent to Miraloma Avenue.

Vegetation along the right-of-way and within the small undeveloped field generally consists of non-native street trees, grasses and shrubs. Vegetation near the proposed blow-off/valve structure consists of ornamental trees and shrubs. There are no sensitive biological resources within these areas. No impacts would occur.

At the Carbon Canyon Diversion Channel, where the alignment may veer off of the right-of-way to avoid impacts to the existing bridge supports, the channel is comprised of rip rap sides with a concrete bottom that is currently covered with silt. A brief field reconnaissance by confirmed that the habitat within the channel is highly disturbed and dominated by non-native weeds and grasses (**Figure 5**).¹⁵ Although trenching through the channel would result in a temporarily disturbance to the channel, no candidate, sensitive, or special status species would be affected. No impacts would occur.

- b) & c) **Less than Significant Impact.** As mentioned in item a), the proposed Project may include trenching through the Carbon Canyon Diversion Channel. The channel does not support any riparian, wetland, or other sensitive natural habitats. Therefore, impacts would be less than significant. Nevertheless, trenching through this channel would require regulatory authorizations from the Corps (CWA Section 404 Permit), the CRWQCB (CWA Section 401 Water Quality Certification), and CDFG (1602 SAA). Should trenching occur through this channel, the above required authorizations would be obtained prior to any disturbance to the channel, and all associated conditions of approval would be complied with.
- d) **No Impact.** As mentioned in item a), the Project site would be located in a fully developed right-of-way surrounded by commercial and industrial land uses in a developed urban area. The Project site does not support any wildlife corridors. The Carbon Canyon Diversion Channel in the vicinity of the Project site, would not support any migratory fish or native wildlife nursery sites. Therefore, the proposed Project would have no effect on fish or wildlife movement or migration, nor would it impede the use of native wildlife nursery sites. No impact would occur.
- e) **No Impact.** As mentioned in item a), the Project would involve crossing a small undeveloped field near the eastern boundary of the proposed alignment and possibly the Carbon Canyon Diversion Channel. Vegetation in the undeveloped field contains weeds and grasses. Some of the existing ornamental trees and shrubs in a parking area adjacent to the Carbon Canyon Diversion Channel may be removed to accommodate construction. However, any removed vegetation would be replaced in-kind or as otherwise approved by

¹³ City of Anaheim. *The City of Anaheim General Plan, Circulation Element*. May 25, 2004. Figure C-1.

¹⁴ City of Placentia. *The City of Placentia General Plan, Circulation Element*. Circulation Element Map.

¹⁵ Chambers Group. Field Reconnaissance Visit. Erik Bray, Senior Botanist, September 19, 2005.

the city of Anaheim. Therefore, no conflicts with the goals and policies relating to landscaping and street trees contained in the City of Anaheim General Plan¹⁶ would occur. There are no known landscaping or street tree policies in the City of Placentia General Plan. Therefore, there would be no impact with any local policies or ordinances protecting biological resources, such as tree preservation policies or ordinances.

- f) **No Impact.** As mentioned in item a), the Project would occur within a fully developed right-of-way. The Project site would not be subject to any habitat or natural community conservation plans. The proposed improvements would not conflict with any local policies or ordinances protecting biological resources, nor would it conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No impacts would occur.

V. CULTURAL RESOURCES – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) – d) No Impact. There are no known historical, archaeological or paleontologic resources on the Project site, nor are there any unique geological features. The proposed Project alignment would be primarily approximately 40 feet wide by 12,500 feet long and would contain both construction and staging areas. The Project area would be located within the public right-of-way of Miraloma Avenue, from approximately 700 feet east of Red Gum Street, across the Yorba Linda Water District property to the intersection of Miraloma Avenue and Richfield Road.

There is one recorded historic structure (CA-176656) located northeast of the proposed Project site. This site is outside of the Project impact area and would not be affected. In addition, seven archaeological surveys have been previously conducted within a half-mile radius of the Project site. Fourteen cultural resources were identified as a result of these surveys and all are outside of the Project area. In addition, there are no National Register

¹⁶ City of Anaheim. *The City of Anaheim General Plan, Green Element*. May 25, 2004. Page G-51.

sites nor Historic Resources listed within the Project Area.¹⁷ Although the potential is very low for uncovering buried archaeological or paleontologic resources, should such a situation arise at the Project site, construction within the affected area would be temporarily halted while a qualified archaeologist or paleontologist (as applicable) would examine the materials and determine their importance and, if warranted, collect and process them. No impacts would occur either on the Project alignment nor on the proposed Project staging areas.

VI. GEOLOGY AND SOILS – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

¹⁷ Chambers Group, Inc. Historical Records Search. August 23, 2005.

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

Discussion:

- a) **Less than Significant Impact.** The proposed Project site would not be located within the boundaries of, or in proximity to, an Alquist-Priolo Earthquake Fault Zone. The nearest active faults to the Project site are the Whittier Fault, located approximately three miles northeast of the easternmost boundary of the Project site, and the El Modeno Fault, located approximately one and one-half miles south of the westernmost boundary of the Project site.¹⁸ The Whittier Fault is identified as an Alquist-Priolo Earthquake Fault Zone.

Seismically-induced ground shaking is a common hazard in Southern California. This would be a less than significant impact because the proposed Project would not increase the human or environmental exposure to such a hazard and would not involve the construction of habitable structures.

The Project site would be located in an area characterized by alluvial deposition that does not have a potential for earthquake-induced landslides. However, the Project site would be located in an area that has a potential for liquefaction and for expansive soils that ranges from “Low” to “High” in expansion potential.¹⁹ Codes and regulations relating to geology, soils, and excavation are identified in the Anaheim Municipal Code,²⁰ Title 17 (Land Development and Resources) and the Placentia Municipal Code,²¹ Title 20 (Building Codes and Regulations). These codes address grading, excavation, fills, watercourses, and geotechnical report preparation and submittal. Mandatory compliance with these existing regulations, and the California Building Code and Uniform Building Code, would minimize the risk associated with the construction of the proposed Project should expansive soils or soils conducive to liquefaction be encountered.

The proposed Project would have a less than significant impact on the risk of exposure of people or structures to fault rupture, seismic ground shaking, liquefaction, landslide hazards, or expansive soils.

- b) **Less than Significant Impact.** Installation of the proposed pipeline and the associated appurtenant facilities would require excavating an area approximately 12 feet wide by 12,500 feet long within a fully developed right-of-way and an unpaved vacant lot near the easterly boundary of the alignment. Cut and fill estimates indicate that a cut of approximately 51,000 cubic yards of excess material would be exported offsite. Upon completion of the proposed pipeline installation, Miraloma Avenue would be repaved to its pre-Project conditions thereby eliminating any potential for long-term erosion or loss of topsoil. As part of the Project, best management practices (BMPs), such as backfilling excavated areas and recompacting topsoils, would be implemented to prohibit any substantial soil erosion or loss of topsoil. In addition, the proposed Project would be subject

¹⁸ City of Anaheim. *Anaheim General Plan, Safety Element*. May 25, 2004. Figure S-2.

¹⁹ City of Anaheim. *Anaheim General Plan/Zoning Code Update EIR*. May 25, 2004. Page 5-83 and Figure 5.5-3.

²⁰ City of Anaheim. *Anaheim Municipal Code*. July 12, 2005.

²¹ City of Placentia. *Placentia Municipal Code*. March 15, 2005.

to the requirements of the NPDES *General Permit for Storm Water Discharges Associated with Construction Activity*, issued by the State Water Resources Control Board. The proposed Project would result in a less than significant impact.

- c) **Less than Significant Impact.** With the exception of the undeveloped lot near the easterly boundary of the alignment and possibly the Carbon Canyon Diversion Channel and adjacent blow-off/valve structure, construction of the proposed Project would be limited to the existing right-of-way and would require backfill and compaction to engineered specifications in conformance with the Anaheim and Placentia municipal codes. Moreover, Miraloma Avenue would be returned to its pre-Project conditions (i.e., repaved) that would preclude any lateral spreading or subsidence within the Project site or adjacent to the Project site. Less than significant impacts would result from implementation of the proposed Project.
- d) **Less than Significant Impact.** Refer to a), above.
- e) **No Impact.** The construction and operation of the proposed Project would not involve a use that would generate wastewater. Temporary, on-site portable sanitation stations for construction workers would be provided. No impacts would result from Project implementation.

VII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Discussion:

- a) & b) **Less than Significant Impact.** The proposed Project would involve the temporary use and transport of fuels, lubricating fluids, solvents and other hazardous materials. Accidental spills or leaks involving hazardous materials would represent a potential threat to human health and the environment if not appropriately addressed. However, the Project would be implemented in accordance with any applicable health and safety laws. Further, Metropolitan has instituted a Hazardous Waste Management Program that sets forth policy, requirements, and responsibilities for evaluation, handling, storage, disposal, transport, and source reduction of hazardous waste. The program includes procedures for containment and cleanup of hazardous materials/waste spills and establishes hazardous waste contingency plans. Consistent with this program and with applicable environmental health and safety laws, provisions to properly manage hazardous substances and wastes would be included in the proposed Project’s construction specifications. Therefore, implementation of the proposed Project and use of the proposed staging areas would result in less than significant impacts.
- c) **No Impact.** No known existing or proposed schools are located within one-quarter mile radius of the proposed Project site.²² No impact would occur with Project implementation.
- d) **No Impact.** The proposed Project site has not been identified on any hazardous waste list as listed on Government Code Section 65962.5.²³ Hence, there would be no impact.

²² Placentia –Yorba Linda Unified School District, District Map Website. September 23, 2005.

²³ State of California. California Environmental Protection Agency. Dept. of Toxic Substances Control. *DTSC’s Hazardous Waste and Substances Sites List (Cortese List)*.

- e) & f) **No Impact.** The proposed Project site would not be located within the boundaries of an adopted airport land use plan or within two miles of a public or public use airport.²⁴ Hence, no impacts would occur with Project implementation.
- g) **No Impact.** The proposed Project would not interfere with a current emergency response plan or an emergency evacuation plan for local, state or federal agencies. The proposed Project would be implemented within the boundaries of an existing right-of-way that would reduce the number of travel lanes during the construction period. However, Miraloma Avenue is not part of either the city of Anaheim’s²⁵ or the city of Placentia’s²⁶ emergency response plans or emergency evacuation plans. All applicable emergency procedures would be implemented during construction and operation of the proposed Project; therefore, no impact would occur.
- h) **No Impact.** There are no wildlands located adjacent to the proposed Project site. In addition, the city of Anaheim does not designate this portion of the city within a fire protection area.²⁷ The city of Placentia has not designated any fire protection areas. Therefore, no impact would occur.

VIII. HYDROLOGY AND WATER QUALITY

– Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

²⁴ AirNav.com website. Airports search portal. August 23, 2005.

²⁵ City of Anaheim. Traffic Engineering Department. Personal communication on August 24, 2005.

²⁶ City of Placentia. Planning Department. Personal communication on August 24, 2005.

²⁷ City of Anaheim. *The City of Anaheim General Plan, Safety Element*. May 25, 2004. Figure S-5.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- j) Inundation of seiche, tsunami, or mudflow?

a) **Less than Significant Impact.** The proposed Project would provide an underground interconnection between Metropolitan’s existing Second Lower Feeder and EOCF2 pipelines. This interconnection would expand the flexibility and reliability of an existing domestic water distribution system. Prior to completing the tie-ins for this interconnection, sections of both the Second Lower Feeder and the EOCF2 would have to be dewatered. In order to accomplish this, approximately 7 acre-feet of water would be discharged into Atwood Channel in the city of Placentia, while another 7 acre-feet would be discharged into a storm drain near the intersection of Vermont Avenue and East Street in the city of Anaheim. Similarly, during Project operation, occasional dewatering to the Carbon Canyon Diversion Channel would be required to facilitate routine inspection and repairs to the new pipeline. All dewatered flows would be released at a rate of approximately 15 to 20 cfs, and would be dechlorinated prior to release with either sodium thiosulfate or sodium biosulfate.

In addition to the pipeline dewatering described above, some groundwater dewatering may also be required, particularly adjacent to the Carbon Canyon Diversion Channel and the Metrolink railroad tracks. All discharges to surface waters would occur in accordance with the *General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De Minimum) Threat to Water Quality (General Permit)*, issued by the CRWQCB. Therefore, any impacts related to water quality standards or waste discharge requirements would be less than significant.

Because the proposed Project would result in a land disturbance of greater than one acre, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared as required under the NPDES *General Permit for Storm Water Discharges Associated with Construction Activity*. The proposed Project's SWPPP would specify an array of water quality controls to manage both pre- and post-construction storm water runoff, such as covering or containing temporary stockpiles, compacting soil in disturbed areas, and strategically placing sandbags and/or straw bales. The Project site is located within the city of Anaheim Groundwater Protection Zone.²⁸ Preparation of an SWPPP would conform to the Groundwater Protection Zone policies. Hence, any impacts would be less than significant.

Implementation of the proposed Project may require trenching through the Carbon Canyon Diversion Channel. As indicated in the Biological Resources section, any trenching through this channel would require regulatory authorizations from the Corps (CWA Section 404 Permit), the CRWQCB (CWA Section 401 Water Quality Certification), and CDFG (1602 SAA). These authorizations would be obtained, as necessary, prior to any disturbance to the channel and all conditions of approval would be complied with. Therefore, impacts would be less than significant.

- b) **Less than Significant Impact.** The proposed Project would not result in an increased demand for domestic water supply that would affect existing groundwater supplies. As described in item a), some groundwater dewatering may be required, particularly in the areas adjacent to the Carbon Canyon Diversion Channel and the Metrolink railroad tracks. Prior to any groundwater dewatering, Metropolitan would obtain the required permit from the CRWQCB. All conditions of approval would be complied with. Hence, impacts would be less than significant.
- c) & d) **Less than Significant Impact.** As indicated in item a), implementation of the proposed Project may include trenching through the Carbon Canyon Diversion Channel. Should trenching through this channel occur, Metropolitan would obtain the required authorizations from the Corps, the CRWQCB, and CDFG, pursuant to their respective regulatory authorities, prior to any disturbance to the channel. All conditions of approval would be complied with, including any provisions addressing erosion and siltation control, surface runoff, and flooding. Any impacts would be less than significant.

Also, as indicated above, Metropolitan would implement a variety of erosion and sediment controls, such as covering or containing temporary stockpiles, compacting soil in disturbed areas, and strategically placing sandbags and/or straw bales. These controls and/or similar BMPs would be specified in the proposed Project's SWPPP and would prohibit any substantial erosion or siltation on- or off-site and at staging areas

The proposed Project would include the construction of various appurtenant facilities associated with the new pipeline, including two pump well and air release/vacuum valve combined structures; five air release/vacuum valves; and two air release valves. Each of these facilities would be located along the sidewalk in above-ground enclosures with footprints approximately three feet wide by four feet long. There also would be a larger blow-off/valve structure next to the Carbon Canyon Diversion Channel located in a parking lot with a footprint that would be approximately 25 feet wide by 40 feet long. Construction of these facilities would not substantially alter the existing drainage patterns nor would they result in a substantial increase in the rate or amount of surface runoff. No changes in

²⁸ City of Anaheim. *The City of Anaheim General Plan, Green Element*. May 25, 2004. Figure G-2.

drainage patterns would be associated with use of the proposed staging areas as no landform changes would occur. Therefore, implementation of the proposed Project would result in less than significant impacts.

- e) & f) Less than Significant Impact.** As stated in items a) through d), the proposed Project would involve the installation of an underground pipeline and appurtenant facilities mostly within and adjacent to an existing right-of-way. Implementation of the proposed Project would not result in a substantial increase in surface runoff (e.g., flooding) or provide substantial additional sources of polluted runoff, nor would the proposed Project result in a substantial degradation of water quality. Furthermore, implementation of the proposed Project would require the preparation of a SWPPP, which would specify several pre-and post-construction water quality controls to manage storm water runoff. Therefore, any impacts related to flooding, storm water runoff, or water quality would be less than significant.

Dewatering of the existing pipelines would be required in order to connect the new pipe. Dewatering would comprise an estimated 7 acre-feet from the EOCF2 (to the Atwood Channel) in March 2007, as well as an estimated 7 acre-feet from the Second Lower Feeder near the intersection of Vermont Avenue and East Street (via storm drain) in October 2007. Additionally, during Project operation, occasional dewatering to the Carbon Canyon Diversion Channel would be required to facilitate routine inspection and repairs to the new pipeline. Chlorinated water would be dechlorinated on-site prior to release and in accordance with CRWQCB procedures. Any impacts to water quality would be less than significant.

Trenching through the Carbon Canyon Diversion Channel would require the diversion of the water in the channel during construction. Regulatory authorizations from the Corps, the CRWQCB, and CDFG would be required. Compliance with the conditions of approval would assure that any impacts relating to stormwater runoff or water quality would be less than significant.

- g) No Impact.** The majority of the Project site would be located within a 100-year flood zone with a small portion of the Project site, located near Miraloma Avenue and the OCTA Metrolink railroad tracks, located within a 100-year to 500-year flood zone.²⁹ No similar data are available for the city of Placentia; however, it is anticipated that the site conditions would be virtually the same. Nevertheless, the proposed Project would not involve the construction of any housing. Therefore, no impacts would occur.
- h) Less than Significant Impact.** As indicated above, the proposed Project may include trenching through the Carbon Canyon Diversion Channel. Should this occur, any existing flows within the channel would be temporarily redirected around the construction work area to preclude impacts to water quality. Prior to performing any work within this channel, Metropolitan would obtain the required authorizations from the Corps, the CRWQCB, and CDFG, pursuant to their respective regulatory authorities. All conditions of approval would be complied with, including any provisions addressing flow obstruction and redirection of flows. Therefore, any impacts would be less than significant.

- i) & j) No Impact.** The proposed Project would be located within the Carbon Canyon Dam Flood Zone and the Prado Dam Flood Zone.³⁰ Properties located within these areas would be subject to flooding in the event of failure of either of these dams. However, except for the

²⁹ City of Anaheim. *The City of Anaheim General Plan, Safety Element*. May 25, 2004. Figure S-6.

³⁰ City of Anaheim. *The City of Anaheim General Plan, Safety Element*. May 25, 2004. Figure S-7.

small enclosures protecting the proposed Project’s nine air release valves and the blow-off/valve structure, the Project would not propose any housing or structures. Moreover, the Project site would be returned to pre-Project conditions. In addition, the proposed Project would not be subject to tsunami or seiche wave inundation because it would not be situated near a large body of water, nor would the Project site be subject to mudslides. No impacts would occur.

IX. LAND USE AND PLANNING – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** The proposed Project would primarily be constructed within the fully developed right-of-way of way of Miraloma Avenue in the cities of Anaheim and Placentia. No proximate housing exists in the area. The proposed Project would not result in any division of an established community. Therefore, no impact would occur.
- b) **No Impact.** The land use designations and zonings of the Project site are Industrial and Water Uses as identified in the cities of Anaheim and Placentia General Plans. The proposed pipeline would not create any new land uses that do not already exist. Rather, the improvements would serve to increase the reliability of deliveries to the Diemer Plant service area, given planned maintenance and rehabilitation activities. The proposed Project would not be subject to the either city’s General Plan or zoning ordinance per California Government Code Section 53091, nor would the implementation of the proposed Project conflict with any other applicable general plan or zoning designations. No impact would occur.
- c) **No Impact.** Refer to item IV. f) (Biological Resources).

X. MINERAL RESOURCES – Would the project:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) & b) No Impact. The proposed Project site would be located within the California Geological Survey’s Mineral Resource Zone MRZ-2 but outside of the three Regionally Significant Aggregate Resource Areas located within the city of Anaheim.³¹ The City of Placentia General Plan Land Use Element does not identify mineral resource areas.³² Lands located within an MRZ-2 zone are deemed to have a high potential for significant mineral deposits. The presence of significant mineral resources within the boundaries of the Project site is not known. The Green Element of the City of Anaheim General Plan determined that known mineral resources were of limited value due to overlying industrial development. Because the Project site would be primarily located within a fully developed right-of-way within the city of Anaheim³³ and the city of Placentia³⁴ that is unlikely to be abandoned, any mineral resources that could be on the Project site would be of no value. Therefore, the proposed Project would not result in the loss of availability of any mineral resource that would be of future value. No impacts would occur.

XI. NOISE – Would the project result in:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

³¹ City of Anaheim. *The City of Anaheim General Plan, Green Element*. May 25, 2004. Figure G-3.

³² City of Placentia. *The City of Placentia General Plan, Land Use Element*. May 1989. Exhibit 5.

³³ City of Anaheim. *The City of Anaheim General Plan, Circulation Element*. May 25, 2004. Figure C-1.

³⁴ City of Placentia. *The City of Placentia General Plan, Circulation Element*. June 1, 1982. Circulation Element Map.

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|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion:

Applicable Standards

The proposed Project construction activities east and west of Van Buren Street would be subject to the cities of Placentia and Anaheim ordinances, respectively. The city of Anaheim allows construction to proceed between the hours of 7:00 AM and 7:00 PM any day of the week.^{35 36} Placentia allows construction to proceed between the hours of 7:00 AM and 7:00 PM Monday through Friday and between the hours of 9:00 AM and 6:00 PM on Saturdays.^{37 38} No construction is allowed on Sundays or holidays.

In addition to the articles included in the local ordinance, the CEQA notes that an impact is potentially significant if the Project were to result in a substantial temporary or permanent increase in the ambient noise levels. Noise impacts associated with such an increase can be broken down into three categories. The first is “audible” impacts, which refers to increases in noise level that are perceptible to humans. Audible increases in noise levels generally refer to a change of 3 A-weighted decibel scale (dBA) or more since this level has been found to be barely perceptible in exterior environments. The second category, “potentially audible,” refers to a change in noise level between 1 and 3 dBA. This range of noise levels was found to be noticeable to sensitive people in laboratory environments. The last category includes changes in noise level of less than 1 dBA that are typically “inaudible” to the human ear except under quiet conditions in controlled environments. Only “audible” changes in noise levels at sensitive receptor locations are considered potentially significant.

³⁵ City of Anaheim. *City of Anaheim General Plan, Noise Element*, May 2004.

³⁶ City of Anaheim. *City of Anaheim Municipal Code*, July 5, 2005.

³⁷ City of Placentia. *City of Placentia General Plan, Noise Element*, 1974.

³⁸ City of Placentia. *Placentia Municipal Code*, 1997.

Mobile-source noise (i.e., vehicle noise) is preempted from local regulation, but is still subject to CEQA. An impact is considered significant if the Project were to increase this noise level by 5 dBA Community Noise Equivalent Level (CNEL) (noticeable to most people in an exterior environment) where the resultant noise remains within the goals of the Noise Element (i.e., 70 dBA for industrial area), or 3 dBA CNEL where projected noise levels exceed the goals of the Noise Element.

Existing Noise Levels

To ascertain the existing noise at and adjacent to the proposed Project site, field monitoring was conducted at two locations on Tuesday, August 23, 2005. The field survey noted that noise within the proposed Project area is generally characterized by roadway noise, but many of the various facilities located along the route were clearly audible (e.g., compressors, power tools, etc.). Aircraft and train horns are also audible in the Project area. **Table 3** presents the results of the noise measurements. The two noise monitoring locations are shown in **Figure 9**.

TABLE 3
NOISE LEVEL MEASUREMENTS¹

Monitoring Location	Leq (dBA)	L02 (dBA)	L08 (dBA)	L25 (dBA)	L50 (dBA)	Lmin (dBA)	Lmax (dBA)
NR-1	57.6	68.6	60.3	54.5	53.1	50.5	72.4
NR-2	63.7	71.7	68.2	64.2	60.9	49.1	75.7

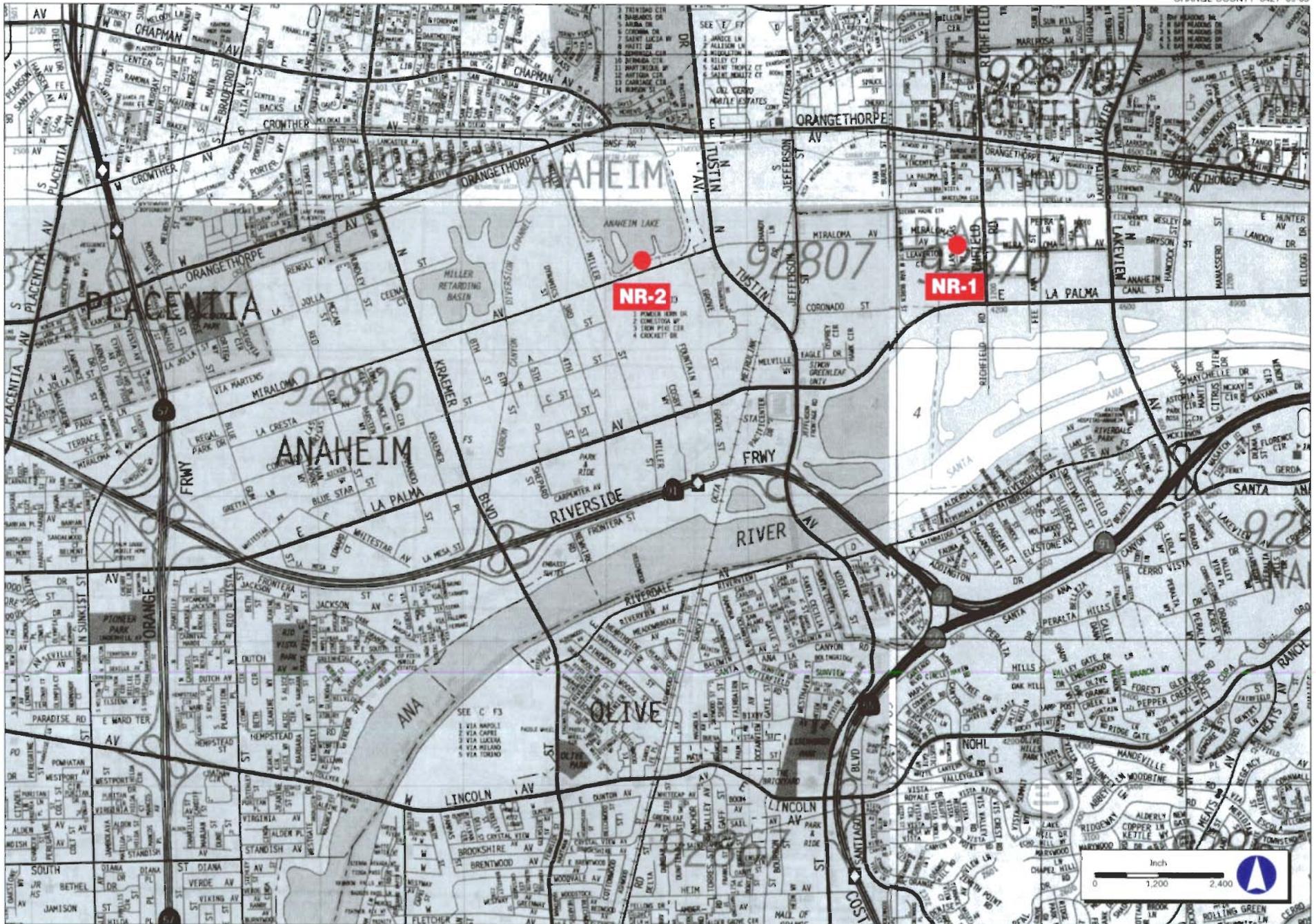
¹ The Leq represents the equivalent sound level and is the numeric value of a constant level that over the given period of time transmits the same amount of acoustic energy as the actual time-varying sound level. The L02, L08, L25, and L50 are the levels that are exceeded 2, 8, 25, and 50 percent of the time, respectively. Alternatively, these values represent the noise level that would be exceeded for 1, 5, 15, and 30 minutes during a 1-hour period if the readings were extrapolated out to an hour's duration. The Lmin and Lmax represent the minimum and maximum root-mean-square noise levels obtained over a period of 1 second during the measurement.

- a) **Less than Significant Impact.** The vicinity of the proposed Project is comprised of industrial/commercial uses. There are no sensitive receptors located adjacent to the Project site boundary.

Construction Impacts

That portion of the proposed Project located west of Van Buren Street is within the city of Anaheim. Within the city of Anaheim, stationary sources of noise are governed under the local *Municipal Code*, Chapter 6.70, Sound Pressure Levels.³⁹ Section 6.70.010 states that "Traffic sounds, sound created by emergency activities and sound created by governmental units shall be exempt from the applications of this chapter. Sound created by construction or building repair of any premises within the City shall be exempt from the applications of this chapter during the hours of 7:00 AM and 7:00 PM."

³⁹ City of Anaheim. *City of Anaheim Municipal Code*, July 5, 2005.



NOISE MONITORING LOCATIONS
Figure 9

That portion of the proposed Project located east of Van Buren Street is within the city of Placentia and is subject to the Zoning Code incorporated therein.⁴⁰ Section 23.76.070 includes exemptions to the regulations. Of note, Section 23.76.070.G states that “noise associated with grading, construction and maintenance of real property shall not be subject to the provisions of this chapter. However, grading, construction and maintenance of real property are prohibited at all times other than the permitted hours indicated in Section 23.81.170 of this code.” Section 23.81.170 allows construction to occur between the hours of 7:00 AM and 7:00 PM on weekdays and between 9:00 AM and 6:00 PM on Saturdays. Construction is not allowed on Sundays or holidays.

Construction noise levels at and near the proposed Project site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Noise levels as high as 88 dBA could be experienced at a distance of 50 feet from the construction area. While most receptors have an extended setback from the road, the most proximate could be on the order of 75 feet and noise at this distance is estimated at approximately 84 dBA. Interior noise levels at the adjoining establishments would be reduced by an additional 20 dBA, or more, as most are of heavy concrete construction with few windows.

During construction, a temporary increase in the ambient noise levels would occur in the Project vicinity. However, the exposure of persons to a periodic increase in ambient noise levels would be short-term and not substantial. Adherence to the appropriate noise ordinance would minimize construction related noise impacts and ensure that the impact remains less than significant.

Operational Impacts

Operational activities would include periodic maintenance and inspection of the equipment installed on the new pipeline, as well as occasional dewatering for internal inspections or repairs, or to access the adjoining feeders. No noise impacts to surrounding sensitive receptors would occur as a result of the operation of the proposed Project.

- b) **Less than Significant Impact.** Groundborne vibration is measured in terms of the velocity of the vibration oscillations. As with noise, a logarithmic decibel scale (VdB) is used to quantify vibration intensity. When groundborne vibration exceeds 75 to 80 VdB, it is usually perceived as annoying to building occupants. The degree of annoyance is dependent upon type of land use, individual sensitivity to vibration, and the frequency of the vibration events. Typically, vibration levels must exceed 100 VdB before any building damage occurs.⁴¹

Construction Impacts

Construction of the proposed Project would not be expected to involve pile-driving activities. In general, pile driving would only be used for the installation of shoring elements if cohesionless sands are encountered and conventional drilling and soldier beam installation cannot be performed. As an alternative to pile driving, vibrational installation methods of shoring maybe required. The use of jackhammers and/or pavement breakers associated with construction and pipe jacking under roads, would be brief and therefore would not affect a given location for more than a few days. In addition, the use of such equipment would be

⁴⁰ City of Placentia. *Placentia Municipal Code*, 1997.

⁴¹ Federal Transit Administration, Office of Planning. *Traffic Noise and Vibration Impact Assessment, Final Report*. April 1995.

limited to daytime hours. As a result, although construction of the proposed Project would include use of heavy equipment, it is unlikely that construction would result in perceptible, let alone excessive, groundborne vibration or groundborne noise levels. Impacts would be less than significant.

Operational Impacts

As indicated in item a), operational activities would include periodic maintenance and inspection activities, as well as occasional dewatering. No substantial groundborne vibration or noise would occur.

- c) **No Impact.** Operational activities would include periodic maintenance and inspection of the equipment installed on the new pipeline, as well as occasional dewatering for internal inspections or repairs, or to access the adjoining feeders. No substantial permanent increase in ambient noise levels would occur in the Project vicinity above the levels existing without the Project. No impact would occur.
- d) **Less than Significant Impact.** As discussed in item a), construction noise levels at and near the proposed Project site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Construction would generate an increase in ambient noise levels in the Project vicinity. However, the exposure of persons to the periodic increase in noise levels would be short-term. Furthermore, there are no noise sensitive land uses (e.g., residential) located along the Project alignment. With adherence to the applicable noise ordinance, the impact of the proposed Project on temporarily increasing ambient noise levels in the Project vicinity would be less than significant.
- e) & f) **No Impact.** No portion of the proposed Project alignment would be located within an airport land use plan or in the immediate vicinity of any airport or private airstrip. At its most proximate point, the proposed Project would be located approximately 6.5 miles to the southeast of Fullerton Municipal Airport. Therefore, the construction of the proposed Project would not expose workers to excessive noise levels. No impact would occur.

XII. POPULATION AND HOUSING – Would the project:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** The proposed would provide an interconnection between the existing Second Lower Feeder and the EOCF2 water pipelines. The purpose of this interconnection is to provide operational flexibility and reliability by allowing water to be moved into the Diemer Plant service area during either planned or unanticipated outages of the Diemer Plant. Because the proposed Project would not result in the development of new housing or businesses nor would it extend domestic water supplies to undeveloped areas or increase the amount of water availability, it would not have the potential to directly or indirectly induce substantial population growth in the area. Hence, no impacts relating to substantial population growth would occur.
- b) & c) **No Impact.** No housing would be constructed, demolished, or replaced as a result of the proposed Project, nor would the Project result in the displacement of any workers. No impacts would occur with Project implementation.

XIII. PUBLIC SERVICES – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** The proposed Project would involve the construction of an underground water pipeline and associated appurtenant facilities. The proposed improvements would not alter or require the construction of new schools, parks, or other public facilities, nor would the proposed Project substantially increase the need for police and fire services beyond existing conditions. No impacts would occur.

XIV. RECREATION – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** The proposed Project would involve improvements to an existing water supply system. The proposed Project would not increase demand for neighborhood or regional parks. No impact to recreation would occur.
- b) **No Impact.** No recreational facilities would be included or required by the proposed Project. Therefore, no impacts would occur.

XV. TRANSPORTATION / TRAFFIC – Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a) **Less than Significant Impact.** Miraloma Avenue is designated as a Secondary Arterial within the city of Anaheim⁴² and as a Secondary Arterial (Modified) within the city of Placentia.⁴³ A Secondary Arterial, as defined in the Anaheim General Plan Circulation Element, has a typical width of 90 feet, and contains four undivided travel lanes with two parking lanes. A Secondary Arterial (Modified), as defined in the Placentia General Plan Circulation Element, has a reduced width of 64 feet (from a standard 80-foot width), contains four undivided travel lanes, no parking lanes, and a slightly reduced sidewalk on each side of the street. The Orange County Master Plan of Arterial Highways classifies Miraloma Avenue within both jurisdictions as a Secondary Arterial Highway with an estimated capacity of from 10,000 to 20,000 vehicle average daily trips (ADT). Year 2002 traffic counts on Miraloma Avenue indicated the following: between Red Gum Street and Kraemer Boulevard there were 12,000 ADT ; between Kraemer Boulevard and Miller Street there were 11,000 ADT ; and between Miller Street and Tustin Avenue there were 11,000 ADT.⁴⁴

Intersections along Miraloma Avenue were studied as part of the Program-level Environmental Impact Report (EIR) prepared for the Anaheim General Plan and Zoning Code Update Program. Information from the traffic study prepared for the EIR⁴⁵ indicates that the following streets that intersect with Miraloma Avenue operate at Level of Service (LOS) A for both AM and PM peak Hour: Blue Gum Street, Red Gum Street, Kraemer Boulevard, and Miller Street. The intersection of Miraloma Avenue and Tustin Avenue operates at LOS C for AM Peak Hour and at LOS B for PM Peak Hour. The Anaheim Circulation Element identifies LOS D as the operational threshold for traffic circulation; the Placentia Circulation Element does not identify any operational thresholds. According to this same traffic study, traffic on intersections proximate to the proposed Project alignment operate at acceptable levels during AM Peak Hour and PM Peak Hour with the exception of the intersection at Kraemer Boulevard and La Palma Avenue which operates at LOS F for the PM Peak Hour. This intersection is located adjacent to the Kraemer Boulevard and State Route 91 (SR-91) (Riverside Freeway) interchange.

⁴² City of Anaheim. *The City of Anaheim General Plan, Circulation Element*. May 25, 2004. Figure C-1.

⁴³ City of Placentia. *The City of Placentia General Plan, Circulation Element*. June 1, 1982. Circulation Element Map.

⁴⁴ Orange County Transportation Authority. *Year 2004 Traffic Flow Map*. July 1, 2005 (updated August 1, 2005).

⁴⁵ City of Anaheim. *Anaheim General Plan/Zoning Code Update EIR, Vol. II, Appendix H*. May 25, 2004. Table 3 – Existing LOS and V/C.

In general, the proposed Project would result in a modest, short-term increase in traffic trips during the proposed construction period. Construction activities would add approximately 20 to 30 ADT to and from the construction areas to accommodate worker commutes, deliveries, and off-site export of excess soil.

Because all of the intersections along Miraloma Avenue, and all but one intersection in the vicinity of the Project site, are substantially above the LOS D operational threshold for Anaheim (Placentia does not identify operational thresholds), the proposed Project, during construction, would not result in any intersection dropping a level of service. Operational trips associated with the proposed Project would be negligible as they would be limited to routine maintenance and inspection activities. Consequently, during the construction phase of the proposed Project, there would be less-than-significant impacts to the existing traffic load and capacity of the street system.

- b) **Less than Significant Impact.** The proposed Project site would not contain any intersections designated as Congestion Management Plan or “CMP” intersections by the Orange County Congestion Management Program (OCCMP).⁴⁶ The two closest CMP intersections would be the northbound (NB) and southbound (SB) ramps at SR-57 (Orange Freeway) and at Orangethorpe Avenue, located approximately three-quarters of a mile northwest of the westernmost end of the Project site, and a third intersection at Orangethorpe and Tustin Avenues, located approximately one-half mile north of the mid-point of the Project site. All three of these intersections are identified by the OCCMP as being within the city of Placentia. According to the OCCMP, the NB ramp at the SR-57 and Orangethorpe Avenue intersection operates at LOS A for AM Peak Hour and at LOS B for PM Peak Hour. The SB ramp for this same intersection operates at LOS A for both AM Peak Hour and PM Peak Hour. The intersection of Orangethorpe Avenue and Tustin Avenue operates at LOS B for AM Peak Hour and LOS C for PM Peak Hour. The OCCMP identifies LOS E as the operational threshold for CMP intersections.

The additional construction-related traffic associated with the proposed Project would not cause any of the nearby CMP intersections to drop below the LOS E threshold. In addition, temporary closure of travel lanes along Miraloma Avenue or intersections along Miraloma Avenue would result in some traffic taking alternate routes, which may increase traffic at the CMP intersections. However, because the CMP intersections operate well above the LOS E threshold, this additional traffic would be insufficient to drop the LOS below LOS E. Therefore any impacts that might affect the level of service criteria of the OCCMP would be less than significant.

- c) **No Impact.** The proposed Project would not alter air traffic patterns from planes associated with any public or private use airport. No impact would occur.
- d) **No Impact.** The proposed Project would temporarily close travel lanes along Miraloma Avenue and at several intersections. However, there are no proposed changes to reconfigure any of these intersections, to add travel lanes, or to change any other geometric designs. During the construction period, mandatory obligations contained in the city of Anaheim and city Placentia municipal codes related to construction in rights-of-way would be used in conjunction with the Work Area Traffic Control Handbook. Following Project construction, Miraloma Avenue would return to pre-Project conditions (i.e., repaved). No incompatible uses or substantial increase in hazards would occur as a result of the proposed Project. Hence, no impact would occur.

⁴⁶ Orange County Transportation Authority. *Orange County Congestion Management Program: 2003 Update*. November 2003.

- e) **No Impact.** During the construction of the proposed Project, businesses would remain open and access to those businesses would be assured, which would allow for emergency vehicular access. Therefore, no impacts related to emergency access would occur.

Refer also to the discussion in item VII. g) (Hazards and Hazardous Materials).

- f) **Less than Significant Impact.** Implementation of the proposed Project would include the temporary use of additional properties located along or adjacent to Miraloma Avenue for staging and construction worker parking (see Figure 3). Additional space for parking would also be provided within the portions of Miraloma Avenue that would be closed-off during Project construction. Following the completion of Project construction, estimated to take approximately 16 months, parking usage would return to pre-Project conditions, with the exception of approximately 22 parking spaces that would be required to accommodate the blow-off/valve structure that would be located adjacent to the Carbon Canyon Diversion Channel in the far northeast corner of the large parking lot at 3190 East Miraloma Avenue. This structure would house the valve operator and associated electrical equipment. Metropolitan would coordinate with the property owner and the city of Anaheim as necessary. No permanent parking spaces would be required for operation or maintenance of the proposed Project. Any impacts related to parking capacity would be less than significant.
- g) **Less than Significant Impact.** The proposed Project construction would have the potential to impact existing fixed-route bus service along Miraloma Avenue, operated by the Orange County Transportation Authority. Bus Route 410 utilizes the portion of Miraloma Avenue between Miller Street and Tustin Avenue with a timed stop at the intersection of Miraloma Avenue and Miller Street, and a designated stop at the intersection of Miraloma Avenue and Grove Street.

Routes 24, 167, and 71 cross Miraloma Avenue in various locations, but do not have timed or designated stops that intersect with Miraloma Avenue. For those intersections where trenching would occur, the bus routes that cross Miraloma Avenue may have to be temporarily re-routed, have their timetables modified, or both, during the construction period. In addition, Route 410 may have to be re-routed and/or bus stops along Miraloma Avenue may have to be temporarily relocated. As discussed in the project description, prior to the commencement of construction activities, a Right-of-Way Construction Permit from the city of Anaheim and a Public Right-of-Way Encroachment Permit from the city of Placentia would be obtained. In addition, Metropolitan would coordinate with the Orange County Transportation Authority Detour Hotline Group prior to construction. The Hotline group is set up to specifically determine rerouting requirements prior to construction. Upon completion of the proposed Project, Miraloma Avenue would return to pre-Project conditions and would have no effect on fixed-route bus operations. Impacts would be less than significant.

The city of Anaheim has identified Miraloma Avenue as a Proposed Top Priority Class II Bikeway.⁴⁷ However, this bikeway is not listed on the city's Capital Improvement Program and is not proposed for construction until after completion of the Project.⁴⁸ The city of Placentia's General Plan Circulation Element did not identify any bikeways. Thus, no impacts to bikeways would occur.

⁴⁷ City of Anaheim. *The City of Anaheim General Plan, Circulation Element*. May 25, 2004. Figure C-4.

⁴⁸ Personal communication: Mr. Taher Jalai, Principal Traffic Engineer, City of Anaheim Department of Public Works. September 23, 2005.

No other alternative transportation policies identified in the city of Anaheim’s General Plan Circulation Element would be affected by the proposed Project; the city of Placentia’s General Plan Circulation Element did not identify any policies related to alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS –

Would the project:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

- a) **No Impact.** The proposed Project would involve the construction of an underground water pipeline and associated appurtenant facilities. No increases in the amount of wastewater would occur due to Project implementation. Further, there are no foreseen discharges that would cause an exceedance of any wastewater treatment requirements. Therefore, no impacts would occur.

- b) **No Impact.** The proposed Project would involve the construction an underground water pipeline and associated appurtenant facilities that would provide an interconnection between the Second Lower Feeder and the EOCF2 pipelines. The proposed Project would provide increased reliability and flexibility to an existing domestic water distribution system. The Project would not result in the construction of new water or wastewater treatment facilities, nor would the proposed Project result in the expansion of such facilities. No impact would occur.
- c) **No Impact.** The proposed Project would involve the construction of an underground water pipeline and associated appurtenant facilities that would interconnect between two existing underground water supply pipelines. The Project would not require the installation of new or expanded storm water facilities. No impacts would occur.
- d) **No Impact.** The proposed Project would provide an interconnection between two existing underground pipelines. The Project would not result in a demand for additional domestic water supplies. There would be no additional requirements for new or expanded entitlements (refer to item XII. a) (Population and Housing)). Hence, no impacts would occur.
- e) **No Impact.** The proposed Project would not increase the amount of wastewater discharged into the existing sewer system. Hence, no impact would occur.
- f) **Less than Significant Impact.** The proposed Project would involve the construction of an underground water pipeline and associated appurtenant facilities. Implementation of the proposed Project would generate approximately 51,000 cubic yards of excess excavated soil that would be either exported off-site and recycled or transported to a local landfill site with sufficient permitted capacity and disposed of appropriately. The amount of debris generated by the proposed Project would not impact the landfill’s capacity. Hence, the proposed Project would result in a less than significant impact.
- g) **No Impact.** The proposed Project would be in compliance with applicable federal, state, and local statutes and regulations related to solid waste. As indicated in item f), any construction debris generated by the proposed Project would be recycled or transported to a local landfill site with sufficient permitted capacity and disposed of appropriately. No impacts would occur.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
	<u>Potentially Significant Impact</u>		

- a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| <p>b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulative considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion:

- a) **Less than Significant Impact.** The proposed Project would involve the installation of an underground water pipeline and various appurtenant facilities. Implementation of the proposed Project would require temporary construction activities taking place within and adjacent to the Miraloma Avenue right-of-way in the cities of Anaheim and Placentia. As described above, impacts related to the visual character of the Project site and its surroundings would be less than significant since impacts would either be short term (i.e., would occur only during Project construction) or limited to relatively small above-ground enclosures which are consistent with the industrial/commercial character of the area. Potential impacts associated with air quality and noise would also be less than significant due to the temporary nature of the proposed construction activities in addition to there being no sensitive land uses within the proposed Project area. With respect to hazardous materials, compliance with Metropolitan’s existing Hazardous Waste Management Program, as well as applicable laws and regulations, would ensure that any potential impacts related to handling, transport, or disposal of hazardous substances would be less than significant. With regards to fish and wildlife resources, no impacts would occur as no sensitive species or habitats occur within the Project area. Nor would the proposed Project eliminate important examples of California history or prehistory.

The proposed Project may involve trenching through the Carbon Canyon Diversion Channel; however, prior to any disturbance to this channel, Metropolitan would obtain the required authorizations from the Corps, the CRWQCB and CDFG. All conditions of approval would be complied with. Similarly, erosion and sediment controls, surface runoff, and dewatering activities would all occur in accordance with applicable regulatory requirements. Therefore, any potential impacts to the aquatic environment would be less than significant. With regards to transportation and traffic, Metropolitan would, prior to the commencement of construction activities, obtain a Right-of-Way Construction Permit from the city of Anaheim and a Public Right-of-Way Encroachment Permit from the city of Placentia. The coordination with the cities of Anaheim and Placentia and with the Orange County Transportation Authority and adherence to permit conditions from these entities would minimize traffic disruption during construction. Following installation of the proposed pipeline, Miraloma Avenue would be repaved to its pre-Project conditions. Implementation of the proposed Project would result in a less than significant impact.

- b) **No Impact.** The proposed Project would not have any cumulative impacts. No foreseeable cumulative impacts in conjunction with potential local or regional projects would occur. All construction work would be conducted within approximately a 16-month period, nearly all of which would occur within the existing roadway. Therefore, the impacts of construction and operations associated with the proposed Project in the area would not be cumulatively considerable.
- c) **Less than Significant Impact.** As indicated in item a), the proposed Project would reduce the potential impacts related to alternative transportation to a less-than-significant level through coordination with the cities of Anaheim and Placentia and with the Orange County Transportation Authority. Implementation of the Project would not result in any construction or operating noise levels in excess of standards established in the local general plan or noise ordinance. Also, as previously stated, the proposed Project would be located in Southern California, where the potential for exposure to ground shaking is a common hazard. The proposed Project would comply with all seismic safety standards. In addition, all construction activities would follow applicable safety laws, as well as Metropolitan's Hazardous Waste Management Program, to ensure safe working conditions for construction workers. Hence, the proposed Project would result in less than significant impacts on human beings.

SECTION 4 REFERENCES

The following documents were used in the preparation of this Mitigated Negative Declaration. Unless otherwise noted in the reference, they are available for public review at Metropolitan's headquarters office at 700 North Alameda Street, Los Angeles, California 90012-2944.

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South Coast Air Quality Management District. *Final 2003 AQMP*, August 1, 2003.

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State of California. California Environmental Protection Agency. Dept. of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Sites List (Cortese List)*. September 2005.

SECTION 5 AGENCIES CONTACTED

City of Anaheim, Department of Public Works.

City of Anaheim, Fire Department

City of Anaheim, Traffic Engineering Department

City of Placentia, Administration Department.

City of Placentia, Planning Department

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SECTION 6 LIST OF PREPARERS

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APPENDIX A – AIR QUALITY

APPENDIX A-1 CONSTRUCTION EMISSIONS BY PHASE

The included spreadsheet may be used to determine average daily emissions associated with project construction. Heavy equipment emission factors are as included in Tables A9-8-B, A9-8-C, and A9-8-D of the SCAQMD CEQA Air Quality Handbook (April 1993). The user has the option of changing any of these parameters and should adjust the number of pieces, horsepower ratings, and hourly usage values if better data are available. Vehicle Emissions are based on an SCAB Year 2005 model run of the CARB BURDEN2002 computer module included in the EMFAC2002 Emissions Model. The total daily vehicle emissions for each vehicle class included in the model was divided by the total number of vehicles miles traveled in each class so that an average emission rate per mile could be determined. Worker vehicles are a composite of light duty autos, light duty trucks under 3,750 pounds, light trucks between 3,751 and 5,150 pounds, and motorcycles. Per the URBEMIS2002 model, default trip lengths are set at 20 miles per trips for workers and 30 miles per trips for trucks. PM10 emissions associated with dust are based on the assumptions included in the URBEMIS2002 computer model distributed by the SCAQMD. The model reports

INSTALLATION OF SHORING

INPUT ASSUMPTIONS

Heavy Equipment Emissions (All Diesel Except Where Noted)

Equipment Type	Number Used	Hours per Day	Horsepower	Load Factor	Exhaust Emission Factors (Pounds per Horsepower-Hour)				
					CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0	8	39	51.5	0.02	0.021	0.004	0.002	0.0015
Wheel Loaders	0	8	147	54	0.011	0.023	0.002	0.002	0.0015
Tractors/Loaders	0	8	77	46.5	0.015	0.022	0.003	0.002	0.001
Airport Terminal Tractor	0	8	96	82	0.013	0.031	0.003	0.002	0.0015
Excavators	0	8	56	58	0.011	0.024	0.001	0.002	0.0015
Trenchers	0	8	60	69.5	0.02	0.022	0.003	0.002	0.0015
Rollers	0	8	99	57.5	0.007	0.02	0.002	0.002	0.001
Other Construction Equipment	1	6	161	62	0.02	0.024	0.003	0.002	0.0015
Cement/Mortar Mixers	2	4	11	56	0.01	0.024	0.002	0.002	0.001
Paving Equipment	0	8	99	53	0.01	0.024	0.002	0.002	0.001
Asphalt Pavers	0	8	91	59	0.007	0.023	0.001	0.002	0.001
Plate Compactors	0	8	8	43	0.007	0.02	0.002	0.002	0.001
Concrete Saws	0	8	56	73	0.02	0.002	0.024	0.003	0.001
Crushing Equipment	0	8	127	78	0.02	0.024	0.003	0.002	0.0015
Aerial Lifts	0	8	43	50.5	0.013	0.031	0.003	0.002	0.0015
Rough Terrain Fork Lifts	0	8	93	47.5	0.022	0.018	0.003	0.002	0.0015
Fork Lifts	0	8	83	30	0.013	0.031	0.003	0.002	0.0015
Cranes	1	6	194	43	0.009	0.023	0.003	0.002	0.0015
Sprayers	0	8	92	50	0.008	0.017	0.005	0.002	0.0015
Dumpers/Tenders	0	8	23	38	0.006	0.021	0.002	0.002	0.001
Signal Boards (Routing)	0	8	11.22	82	0.011	0.018	0.002	0.002	0.001
Bore/Drill Rigs (Ground)	1	8	209	75	0.02	0.024	0.003	0.002	0.0015
Sweepers/Scrubbers	0	8	97	68	0.013	0.031	0.003	0.002	0.0015
Generator Sets (<50 Hp)	0	8	22	74	0.011	0.018	0.002	0.002	0.001
Pressure Washers (<5 Hp)	0	8	21	30	0.011	0.018	0.002	0.002	0.001
Hydro Power Units	0	8	35	48	0.008	0.017	0.005	0.002	0.0015
Welders (<50 Hp)	0	8	35	45	0.011	0.018	0.002	0.002	0.001
Pumps (<50 Hp)	0	8	23	74	0.011	0.018	0.002	0.002	0.001
Air Compressors (<50 Hp)	0	8	37	48	0.011	0.018	0.002	0.002	0.001
Landscape Loaders	0	8	55	46.5	0.02	0.021	0.004	0.002	0.0015
Backhoe Loaders	1	4	79	46.5	0.015	0.022	0.003	0.002	0.001
Log Loaders	0	8	116	46.5	0.015	0.022	0.003	0.002	0.001
Excavator (Utility)	0	8	34.2	58	0.011	0.024	0.001	0.002	0.0015
Excavator (Construction)	1	6	151.7	58	0.011	0.024	0.001	0.002	0.0015
Surfacing Equipment (Graders)	0	8	8	49	0.83	0.004	0.043	0.0005	0.00025
Tampers/Rammers (A)	0	8	8	55	0.83	0.004	0.043	0.0005	0.00025
2-Wheeled Tractors (A)	0	8	7	62	0.6	0.0058	0.032	0.0005	0.00025
Shredder (>5 Hp, All G)	0	8	8	36	1.479	0.0018	0.056	0.0004	0.0004
Chain Saws (>4 Hp, All G)	0	8	6	50	2.15	0.0021	0.684	0.0008	0.00143
Crawler Dozers	0	8	102.9	59	0.011	0.023	0.002	0.002	0.0015

Rubber-Tired Dozers	0	8	356	59	0.01	0.021	0.002	0.002	0.001
Crawler Tractors	0	8	157	57.5	0.015	0.022	0.002	0.002	0.0015
Tractor (Utility Compact)	0	8	29.4	46.5	0.015	0.022	0.003	0.002	0.001
Tractor (Utility General)	0	8	69	46.5	0.015	0.022	0.003	0.002	0.001
Fellers/Bunchers	0	8	183	71	0.02	0.024	0.003	0.002	0.0015
Concrete Pavers	0	8	130	62	0.01	0.024	0.002	0.002	0.001
Skidders	0	8	134	61.5	0.011	0.025	0.002	0.002	0.0015
Off-Highway Trucks	0	8	489	41	0.032	0.026	0.005	0.002	0.002
Graders	0	8	156.6	57.5	0.008	0.021	0.003	0.002	0.001
Scrapers	0	8	266.76	66	0.011	0.019	0.001	0.002	0.0015

Mobile Source Emissions

Vehicle Class	Number Round-Trips	Miles Per Round-Trip
Workers (Inc. Autos & Trks Under 5,151 Lbs)	20	20
Medium Trucks (5,751 - 8,500 lb)	0	30
Light Heavy Trucks (8,501 - 10,000 lb)	0	30
Light Heavy Trucks (10,0501 - 14,000 lb)	0	30
Medium Heavy Trucks (14,001 - 33,000 lb)	2	30
Heavy-Heavy Trucks (33,001 - 60,000 lb)	2	30

Exhaust Emission Factors (Pounds per Mile)

CO	NOx	ROG	SOx	PM10
0.101532	0.003043	0.01354	0	0.000248
0.015801	0.003169	0.001737	2.56E-05	0.000169
0.015173	0.001489	0.001631	9.7E-06	0.000114
0.01933	0.002745	0.002021	1.59E-05	0.000156
0.016377	0.005212	0.003057	2.76E-05	0.00011
0.014217	0.009347	0.002549	5.07E-05	0.000178

Dust Emissions

Area Disturbed	Acres Disturbed
Active Area	0.5
Unpaved Access Roads	0.5

PM10 Emission factor (Pounds per Acre per Day)

PM10
5.00
5.00

OUTPUT VALUES

Heavy Equipment Emissions

Equipment Type	CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0.00	0.00	0.00	0.00	0.00
Wheel Loaders	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders	0.00	0.00	0.00	0.00	0.00
Airport Terminal Tractors	0.00	0.00	0.00	0.00	0.00
Excavators	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00
Rollers	0.00	0.00	0.00	0.00	0.00
Other Construction Equipment	11.98	14.37	1.80	1.20	0.90
Cement/Mortar Mixers	0.49	1.18	0.10	0.10	0.05
Paving Equipment	0.00	0.00	0.00	0.00	0.00
Asphalt Pavers	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.00	0.00	0.00	0.00	0.00
Concrete Saws	0.00	0.00	0.00	0.00	0.00
Crushing Equipment	0.00	0.00	0.00	0.00	0.00
Aerial Lifts	0.00	0.00	0.00	0.00	0.00
Rough Terrain Fork Lifts	0.00	0.00	0.00	0.00	0.00
Fork Lifts	0.00	0.00	0.00	0.00	0.00
Cranes	4.50	11.51	1.50	1.00	0.75
Sprayers	0.00	0.00	0.00	0.00	0.00
Dumpers/Tenders	0.00	0.00	0.00	0.00	0.00
Signal Boards (Routing Boards)	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs (Groundwater)	25.08	30.10	3.76	2.51	1.88
Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00
Generator Sets (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pressure Washers (<50 Hp)	0.00	0.00	0.00	0.00	0.00

Hydro Power Units	0.00	0.00	0.00	0.00	0.00
Welders (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pumps (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Air Compressors (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Landscape Loaders	0.00	0.00	0.00	0.00	0.00
Backhoe Loaders	2.20	3.23	0.44	0.29	0.15
Log Loaders	0.00	0.00	0.00	0.00	0.00
Excavator (Utility)	0.00	0.00	0.00	0.00	0.00
Excavator (Construction)	5.81	12.67	0.53	1.06	0.79
Surfacing Equipment (All gasoline)	0.00	0.00	0.00	0.00	0.00
Tampers/Rammers (All Gasoline)	0.00	0.00	0.00	0.00	0.00
2-Wheeled Tractors (All Gasoline)	0.00	0.00	0.00	0.00	0.00
Shredder (>5 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Chain Saws (>4 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Crawler Dozers	0.00	0.00	0.00	0.00	0.00
Rubber-Tired Dozers	0.00	0.00	0.00	0.00	0.00
Crawler Tractors	0.00	0.00	0.00	0.00	0.00
Tractor (Utility Compact)	0.00	0.00	0.00	0.00	0.00
Tractor (Utility General Purpose)	0.00	0.00	0.00	0.00	0.00
Fellers/Bunchers	0.00	0.00	0.00	0.00	0.00
Concrete Pavers	0.00	0.00	0.00	0.00	0.00
Skidders	0.00	0.00	0.00	0.00	0.00
Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00
Graders	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00
Total Daily Equipment Emissions (Pounds per Day)	50.07	73.07	8.13	6.16	4.52

Mobile Source Emissions

Vehicle Class

Workers (Inc. Autos & Trks Under 5,151 Lbs)	40.61	1.22	5.42	0.00	0.10
Medium Trucks (5,751 - 8,500 lb)	0.00	0.00	0.00	0.00	0.00
Light Heavy Trucks (8,501 - 10,000 lb)	0.00	0.00	0.00	0.00	0.00
Light Heavy Trucks (10,0501 - 14,000 lb)	0.00	0.00	0.00	0.00	0.00
Medium Heavy Trucks (14,001 - 33,000 lb)	0.98	0.31	0.18	0.00	0.01
Heavy-Heavy Trucks (33,001 - 60,000 lb)	0.85	0.56	0.15	0.00	0.01
Total Daily Mobile-Source Emissions (Pounds per Day)	42.45	2.09	5.75	0.00	0.12

Exhaust Emissions (Pounds per Day)

	CO	NOx	ROG	SOx	PM10
Workers (Inc. Autos & Trks Under 5,151 Lbs)	40.61	1.22	5.42	0.00	0.10
Medium Trucks (5,751 - 8,500 lb)	0.00	0.00	0.00	0.00	0.00
Light Heavy Trucks (8,501 - 10,000 lb)	0.00	0.00	0.00	0.00	0.00
Light Heavy Trucks (10,0501 - 14,000 lb)	0.00	0.00	0.00	0.00	0.00
Medium Heavy Trucks (14,001 - 33,000 lb)	0.98	0.31	0.18	0.00	0.01
Heavy-Heavy Trucks (33,001 - 60,000 lb)	0.85	0.56	0.15	0.00	0.01
Total Daily Mobile-Source Emissions (Pounds per Day)	42.45	2.09	5.75	0.00	0.12

Dust Emissions

Area Disturbed

Active Area

Unpaved Access Roads

Total Daily PM10 From Dust Emissions (Pounds per Day)

Dust PM10 Emissions (Pounds per Day)

Active Area	2.50
Unpaved Access Roads	2.50
Total Daily PM10 From Dust Emissions (Pounds per Day)	5.00

Total Daily Emission (Pounds per Day)

	CO	NOx	ROG	SOx	PM10
Equipment Emissions	50.07	73.07	8.13	6.16	4.52
Mobile Source Emissions	42.45	2.09	5.75	0.00	0.12
Total Daily Emission (Pounds per Day)	92.52	75.16	13.88	6.16	9.63

SCAQMD Daily Threshold Values (Pounds per Day)

CO	550
NOx	100
ROG	75
SOx	150
PM10	150

The included spreadsheet may be used to determine average daily emissions associated with project construction. Heavy equipment emission factors are as included in Tables A9-8-B, A9-8-C, and A9-8-D of the SCAQMD CEQA Air Quality Handbook (April 1993). The user has the option of changing any of these parameters and should adjust the number of pieces, horsepower ratings, and hourly usage values if better data are available. Vehicle Emissions are based on an SCAB Year 2005 model run of the CARB BURDEN2002 computer module included in the EMFAC2002 Emissions Model. The total daily vehicle emissions for each vehicle class included in the model was divided by the total number of vehicles miles traveled in each class so that an average emission rate per mile could be determined. Worker vehicles are a composite of light duty autos, light duty trucks under 3,750 pounds, light trucks between 3,751 and 5,150 pounds, and motorcycles. Per the URBEMIS2002 model, default trip lengths are set at 20 miles per trips for workers and 30 miles per trips for trucks. PM10 emissions associated with dust are based on the assumptions included in the URBEMIS2002 computer model distributed by the SCAQMD. The model reports

BACKFILL

INPUT ASSUMPTIONS

Heavy Equipment Emissions (All Diesel Except Where Noted)

Equipment Type	Number Used	Hours per Day	Horsepower	Load Factor	Exhaust Emission Factors (Pounds per Horsepower-Hour)				
					CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0	8	39	51.5	0.02	0.021	0.004	0.002	0.0015
Wheel Loaders	0	8	147	54	0.011	0.023	0.002	0.002	0.0015
Tractors/Loaders	0	8	77	46.5	0.015	0.022	0.003	0.002	0.001
Airport Terminal Tractc	0	8	96	82	0.013	0.031	0.003	0.002	0.0015
Excavators	0	8	56	58	0.011	0.024	0.001	0.002	0.0015
Trenchers	0	8	60	69.5	0.02	0.022	0.003	0.002	0.0015
Rollers	1	8	99	57.5	0.007	0.02	0.002	0.002	0.001
Other Construction Eq	1	6	161	62	0.02	0.024	0.003	0.002	0.0015
Cement/Mortar Mixers	0	8	11	56	0.01	0.024	0.002	0.002	0.001
Paving Equipment	0	8	99	53	0.01	0.024	0.002	0.002	0.001
Asphalt Pavers	0	8	91	59	0.007	0.023	0.001	0.002	0.001
Plate Compactors	0	8	8	43	0.007	0.02	0.002	0.002	0.001
Concrete Saws	0	8	56	73	0.02	0.002	0.024	0.003	0.001
Crushing Equipment	0	8	127	78	0.02	0.024	0.003	0.002	0.0015
Aerial Lifts	0	8	43	50.5	0.013	0.031	0.003	0.002	0.0015
Rough Terrain Fork Lif	0	8	93	47.5	0.022	0.018	0.003	0.002	0.0015
Fork Lifts	0	8	83	30	0.013	0.031	0.003	0.002	0.0015
Cranes	1	6	194	43	0.009	0.023	0.003	0.002	0.0015
Sprayers	0	8	92	50	0.008	0.017	0.005	0.002	0.0015
Dumpers/Tenders	0	8	23	38	0.006	0.021	0.002	0.002	0.001
Signal Boards (Routing	0	8	11.22	82	0.011	0.018	0.002	0.002	0.001
Bore/Drill Rigs (Groun	0	8	209	75	0.02	0.024	0.003	0.002	0.0015
Sweepers/Scrubbers	0	8	97	68	0.013	0.031	0.003	0.002	0.0015
Generator Sets (<50 H	0	8	22	74	0.011	0.018	0.002	0.002	0.001
Pressure Washers (<5	0	8	21	30	0.011	0.018	0.002	0.002	0.001
Hydro Power Units	0	8	35	48	0.008	0.017	0.005	0.002	0.0015
Welders (<50 Hp)	0	8	35	45	0.011	0.018	0.002	0.002	0.001
Pumps (<50 Hp)	0	8	23	74	0.011	0.018	0.002	0.002	0.001
Air Compressors (<50	0	8	37	48	0.011	0.018	0.002	0.002	0.001
Landscape Loaders	0	0	55	46.5	0.02	0.021	0.004	0.002	0.0015
Backhoe Loaders	1	6	79	46.5	0.015	0.022	0.003	0.002	0.001
Log Loaders	0	8	116	46.5	0.015	0.022	0.003	0.002	0.001
Excavator (Utility)	0	8	34.2	58	0.011	0.024	0.001	0.002	0.0015
Excavator (Constructi	0	8	151.7	58	0.011	0.024	0.001	0.002	0.0015
Surfacing Equipment (,	0	8	8	49	0.83	0.004	0.043	0.0005	0.00025
Tampers/Rammers (A	0	8	8	55	0.83	0.004	0.043	0.0005	0.00025
2-Wheeled Tractors (A	0	8	7	62	0.6	0.0058	0.032	0.0005	0.00025
Shredder (>5 Hp, All G	0	8	8	36	1.479	0.0018	0.056	0.0004	0.0004
Chain Saws (>4 Hp, Al	0	8	6	50	2.15	0.0021	0.684	0.0008	0.00143
Crawler Dozers	0	8	102.9	59	0.011	0.023	0.002	0.002	0.0015

Rubber-Tired Dozers	1	6	356	59	0.01	0.021	0.002	0.002	0.001
Crawler Tractors	0	8	157	57.5	0.015	0.022	0.002	0.002	0.0015
Tractor (Utility Compact)	0	8	29.4	46.5	0.015	0.022	0.003	0.002	0.001
Tractor (Utility General)	0	8	69	46.5	0.015	0.022	0.003	0.002	0.001
Fellers/Bunchers	0	8	183	71	0.02	0.024	0.003	0.002	0.0015
Concrete Pavers	0	8	130	62	0.01	0.024	0.002	0.002	0.001
Skidders	0	8	134	61.5	0.011	0.025	0.002	0.002	0.0015
Off-Highway Trucks	0	8	489	41	0.032	0.026	0.005	0.002	0.002
Graders	0	8	156.6	57.5	0.008	0.021	0.003	0.002	0.001
Scrapers	0	8	266.76	66	0.011	0.019	0.001	0.002	0.0015

Mobile Source Emissions

Vehicle Class	Number Round-Trips	Miles Per Round-Trip
Workers (Inc. Autos & Trks Under 5,151 Lbs)	10	20
Medium Trucks (5,751 - 8,500 lb)	5	30
Light Heavy Trucks (8,501 - 10,000 lb)	5	30
Light Heavy Trucks (10,0501 - 14,000 lb)	2	30
Medium Heavy Trucks (14,001 - 33,000 lb)	2	30
Heavy-Heavy Trucks (33,001 - 60,000 lb)	2	30

Exhaust Emission Factors (Pounds per Mile)

CO	NOx	ROG	SOx	PM10
0.101532	0.003043	0.01354	0	0.000248
0.015801	0.003169	0.001737	2.56E-05	0.000169
0.015173	0.001489	0.001631	9.7E-06	0.000114
0.01933	0.002745	0.002021	1.59E-05	0.000156
0.016377	0.005212	0.003057	2.76E-05	0.00011
0.014217	0.009347	0.002549	5.07E-05	0.000178

Dust Emissions

Area Disturbed	Acres Disturbed
Active Area	0.5
Unpaved Access Roads	0.5

PM10 Emission factor (Pounds per Acre per Day)

PM10
5.00
5.00

OUTPUT VALUES

Heavy Equipment Emissions

Equipment Type	CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0.00	0.00	0.00	0.00	0.00
Wheel Loaders	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders	0.00	0.00	0.00	0.00	0.00
Airport Terminal Tractors	0.00	0.00	0.00	0.00	0.00
Excavators	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00
Rollers	3.19	9.11	0.91	0.91	0.46
Other Construction Equipment	11.98	14.37	1.80	1.20	0.90
Cement/Mortar Mixers	0.00	0.00	0.00	0.00	0.00
Paving Equipment	0.00	0.00	0.00	0.00	0.00
Asphalt Pavers	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.00	0.00	0.00	0.00	0.00
Concrete Saws	0.00	0.00	0.00	0.00	0.00
Crushing Equipment	0.00	0.00	0.00	0.00	0.00
Aerial Lifts	0.00	0.00	0.00	0.00	0.00
Rough Terrain Fork Lifts	0.00	0.00	0.00	0.00	0.00
Fork Lifts	0.00	0.00	0.00	0.00	0.00
Cranes	4.50	11.51	1.50	1.00	0.75
Sprayers	0.00	0.00	0.00	0.00	0.00
Dumpers/Tenders	0.00	0.00	0.00	0.00	0.00
Signal Boards (Routing Boards)	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs (Groundwater)	0.00	0.00	0.00	0.00	0.00
Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00
Generator Sets (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pressure Washers (<50 Hp)	0.00	0.00	0.00	0.00	0.00

Hydro Power Units	0.00	0.00	0.00	0.00	0.00
Welders (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pumps (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Air Compressors (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Landscape Loaders	0.00	0.00	0.00	0.00	0.00
Backhoe Loaders	3.31	4.85	0.66	0.44	0.22
Log Loaders	0.00	0.00	0.00	0.00	0.00
Excavator (Utility)	0.00	0.00	0.00	0.00	0.00
Excavator (Construction)	0.00	0.00	0.00	0.00	0.00
Surfacing Equipment (All gasoline)	0.00	0.00	0.00	0.00	0.00
Tampers/Rammers (All Gasoline)	0.00	0.00	0.00	0.00	0.00
2-Wheeled Tractors (All Gasoline)	0.00	0.00	0.00	0.00	0.00
Shredder (>5 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Chain Saws (>4 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Crawler Dozers	0.00	0.00	0.00	0.00	0.00
Rubber-Tired Dozers	12.60	26.47	2.52	2.52	1.26
Crawler Tractors	0.00	0.00	0.00	0.00	0.00
Tractor (Utility Compact)	0.00	0.00	0.00	0.00	0.00
Tractor (Utility General Purpose)	0.00	0.00	0.00	0.00	0.00
Fellers/Bunchers	0.00	0.00	0.00	0.00	0.00
Concrete Pavers	0.00	0.00	0.00	0.00	0.00
Skidders	0.00	0.00	0.00	0.00	0.00
Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00
Graders	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00
Total Daily Equipment Emissions (Pounds per Day)	35.58	66.31	7.39	6.07	3.59

Mobile Source Emissions

Vehicle Class	Exhaust Emissions (Pounds per Day)				
	CO	NOx	ROG	SOx	PM10
Workers (Inc. Autos & Trks Under 5,151 Lbs)	20.31	0.61	2.71	0.00	0.05
Medium Trucks (5,751 - 8,500 lb)	2.37	0.48	0.26	0.00	0.03
Light Heavy Trucks (8,501 - 10,000 lb)	2.28	0.22	0.24	0.00	0.02
Light Heavy Trucks (10,0501 - 14,000 lb)	1.16	0.16	0.12	0.00	0.01
Medium Heavy Trucks (14,001 - 33,000 lb)	0.98	0.31	0.18	0.00	0.01
Heavy-Heavy Trucks (33,001 - 60,000 lb)	0.85	0.56	0.15	0.00	0.01
Total Daily Mobile-Source Emissions (Pounds per Day)	27.95	2.35	3.67	0.01	0.12

Dust Emissions

Area Disturbed	Dust PM10 Emissions (Pounds per Day)				
	PM10				
Active Area	2.50				
Unpaved Access Roads	2.50				
Total Daily PM10 From Dust Emissions (Pounds per Day)	5.00				

Total Daily Emission (Pounds per Day)

CO	NOx	ROG	SOx	PM10
63.53	68.65	11.06	6.08	8.70

SCAQMD Daily Threshold Values (Pounds per Day)

550	100	75	150	150
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The included spreadsheet may be used to determine average daily emissions associated with project construction. Heavy equipment emission factors are as included in Tables A9-8-B, A9-8-C, and A9-8-D of the SCAQMD CEQA Air Quality Handbook (April 1993). The user has the option of changing any of these parameters and should adjust the number of pieces, horsepower ratings, and hourly usage values if better data are available. Vehicle Emissions are based on an SCAB Year 2005 model run of the CARB BURDEN2002 computer module included in the EMFAC2002 Emissions Model. The total daily vehicle emissions for each vehicle class included in the model was divided by the total number of vehicles miles traveled in each class so that an average emission rate per mile could be determined. Worker vehicles are a composite of light duty autos, light duty trucks under 3,750 pounds, light trucks between 3,751 and 5,150 pounds, and motorcycles. Per the URBEMIS2002 model, default trip lengths are set at 20 miles per trips for workers and 30 miles per trips for trucks. PM10 emissions associated with dust are based on the assumptions included in the URBEMIS2002 computer model distributed by the SCAQMD. The model reports

RELOCATION OF SHORING

INPUT ASSUMPTIONS

Heavy Equipment Emissions (All Diesel Except Where Noted)

Equipment Type	Number Used	Hours per Day	Horsepower	Load Factor	Exhaust Emission Factors (Pounds per Horsepower-Hour)				
					CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0	8	39	51.5	0.02	0.021	0.004	0.002	0.0015
Wheel Loaders	0	8	147	54	0.011	0.023	0.002	0.002	0.0015
Tractors/Loaders	0	8	77	46.5	0.015	0.022	0.003	0.002	0.001
Airport Terminal Tractc	0	8	96	82	0.013	0.031	0.003	0.002	0.0015
Excavators	0	8	56	58	0.011	0.024	0.001	0.002	0.0015
Trenchers	0	8	60	69.5	0.02	0.022	0.003	0.002	0.0015
Rollers	0	8	99	57.5	0.007	0.02	0.002	0.002	0.001
Other Construction Eqi	0	8	161	62	0.02	0.024	0.003	0.002	0.0015
Cement/Mortar Mixers	0	8	11	56	0.01	0.024	0.002	0.002	0.001
Paving Equipment	0	8	99	53	0.01	0.024	0.002	0.002	0.001
Asphalt Pavers	0	8	91	59	0.007	0.023	0.001	0.002	0.001
Plate Compactors	0	8	8	43	0.007	0.02	0.002	0.002	0.001
Concrete Saws	0	8	56	73	0.02	0.002	0.024	0.003	0.001
Crushing Equipment	0	8	127	78	0.02	0.024	0.003	0.002	0.0015
Aerial Lifts	0	8	43	50.5	0.013	0.031	0.003	0.002	0.0015
Rough Terrain Fork Lif	0	8	93	47.5	0.022	0.018	0.003	0.002	0.0015
Fork Lifts	0	8	83	30	0.013	0.031	0.003	0.002	0.0015
Cranes	1	6	194	43	0.009	0.023	0.003	0.002	0.0015
Sprayers	0	8	92	50	0.008	0.017	0.005	0.002	0.0015
Dumpers/Tenders	0	8	23	38	0.006	0.021	0.002	0.002	0.001
Signal Boards (Routing	0	8	11.22	82	0.011	0.018	0.002	0.002	0.001
Bore/Drill Rigs (Groun	0	8	209	75	0.02	0.024	0.003	0.002	0.0015
Sweepers/Scrubbers	0	8	97	68	0.013	0.031	0.003	0.002	0.0015
Generator Sets (<50 H	0	8	22	74	0.011	0.018	0.002	0.002	0.001
Pressure Washers (<5	0	8	21	30	0.011	0.018	0.002	0.002	0.001
Hydro Power Units	0	8	35	48	0.008	0.017	0.005	0.002	0.0015
Welders (<50 Hp)	2	6	35	45	0.011	0.018	0.002	0.002	0.001
Pumps (<50 Hp)	0	8	23	74	0.011	0.018	0.002	0.002	0.001
Air Compressors (<50	0	8	37	48	0.011	0.018	0.002	0.002	0.001
Landscape Loaders	0	0	55	46.5	0.02	0.021	0.004	0.002	0.0015
Backhoe Loaders	0	8	79	46.5	0.015	0.022	0.003	0.002	0.001
Log Loaders	0	8	116	46.5	0.015	0.022	0.003	0.002	0.001
Excavator (Utility)	0	8	34.2	58	0.011	0.024	0.001	0.002	0.0015
Excavator (Constructi	1	6	151.7	58	0.011	0.024	0.001	0.002	0.0015
Surfacing Equipment (,	0	8	8	49	0.83	0.004	0.043	0.0005	0.00025
Tampers/Rammers (A	0	8	8	55	0.83	0.004	0.043	0.0005	0.00025
2-Wheeled Tractors (A	0	8	7	62	0.6	0.0058	0.032	0.0005	0.00025
Shredder (>5 Hp, All G	0	8	8	36	1.479	0.0018	0.056	0.0004	0.0004
Chain Saws (>4 Hp, Al	0	8	6	50	2.15	0.0021	0.684	0.0008	0.00143
Crawler Dozers	0	8	102.9	59	0.011	0.023	0.002	0.002	0.0015

Rubber-Tired Dozers	1	6	356	59	0.01	0.021	0.002	0.002	0.001
Crawler Tractors	0	8	157	57.5	0.015	0.022	0.002	0.002	0.0015
Tractor (Utility Compac	0	8	29.4	46.5	0.015	0.022	0.003	0.002	0.001
Tractor (Utility General	0	8	69	46.5	0.015	0.022	0.003	0.002	0.001
Fellers/Bunchers	0	8	183	71	0.02	0.024	0.003	0.002	0.0015
Concrete Pavers	0	8	130	62	0.01	0.024	0.002	0.002	0.001
Skidders	0	8	134	61.5	0.011	0.025	0.002	0.002	0.0015
Off-Highway Trucks	0	8	489	41	0.032	0.026	0.005	0.002	0.002
Graders	0	8	156.6	57.5	0.008	0.021	0.003	0.002	0.001
Scrapers	0	8	266.76	66	0.011	0.019	0.001	0.002	0.0015

Mobile Source Emissions

Vehicle Class	Number Round-Trips	Miles Per Round-Trip
Workers (Inc. Autos & Trks Under 5,151 Lbs)	20	20
Medium Trucks (5,751 - 8,500 lb)	0	30
Light Heavy Trucks (8,501 - 10,000 lb)	0	30
Light Heavy Trucks (10,0501 - 14,000 lb)	0	30
Medium Heavy Trucks (14,001 - 33,000 lb)	2	30
Heavy-Heavy Trucks (33,001 - 60,000 lb)	2	30

Dust Emissions

Area Disturbed	Acres Disturbed
Active Area	0.5
Unpaved Access Roads	0.5

Exhaust Emission Factors (Pounds per Mile)

CO	NOx	ROG	SOx	PM10
0.101532	0.003043	0.01354	0	0.000248
0.015801	0.003169	0.001737	2.56E-05	0.000169
0.015173	0.001489	0.001631	9.7E-06	0.000114
0.01933	0.002745	0.002021	1.59E-05	0.000156
0.016377	0.005212	0.003057	2.76E-05	0.00011
0.014217	0.009347	0.002549	5.07E-05	0.000178

PM10 Emission factor (Pounds per Acre per Day)

PM10
5.00
5.00

OUTPUT VALUES

Heavy Equipment Emissions

Equipment Type	Exhaust Emissions (Pounds per Day)				
	CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0.00	0.00	0.00	0.00	0.00
Wheel Loaders	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders	0.00	0.00	0.00	0.00	0.00
Airport Terminal Tractors	0.00	0.00	0.00	0.00	0.00
Excavators	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00
Rollers	0.00	0.00	0.00	0.00	0.00
Other Construction Equipment	0.00	0.00	0.00	0.00	0.00
Cement/Mortar Mixers	0.00	0.00	0.00	0.00	0.00
Paving Equipment	0.00	0.00	0.00	0.00	0.00
Asphalt Pavers	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.00	0.00	0.00	0.00	0.00
Concrete Saws	0.00	0.00	0.00	0.00	0.00
Crushing Equipment	0.00	0.00	0.00	0.00	0.00
Aerial Lifts	0.00	0.00	0.00	0.00	0.00
Rough Terrain Fork Lifts	0.00	0.00	0.00	0.00	0.00
Fork Lifts	0.00	0.00	0.00	0.00	0.00
Cranes	4.50	11.51	1.50	1.00	0.75
Sprayers	0.00	0.00	0.00	0.00	0.00
Dumpers/Tenders	0.00	0.00	0.00	0.00	0.00
Signal Boards (Routing Boards)	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs (Groundwater)	0.00	0.00	0.00	0.00	0.00
Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00
Generator Sets (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pressure Washers (<50 Hp)	0.00	0.00	0.00	0.00	0.00

Hydro Power Units	0.00	0.00	0.00	0.00	0.00
Welders (<50 Hp)	2.08	3.40	0.38	0.38	0.19
Pumps (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Air Compressors (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Landscape Loaders	0.00	0.00	0.00	0.00	0.00
Backhoe Loaders	0.00	0.00	0.00	0.00	0.00
Log Loaders	0.00	0.00	0.00	0.00	0.00
Excavator (Utility)	0.00	0.00	0.00	0.00	0.00
Excavator (Construction)	5.81	12.67	0.53	1.06	0.79
Surfacing Equipment (All gasoline)	0.00	0.00	0.00	0.00	0.00
Tampers/Rammers (All Gasoline)	0.00	0.00	0.00	0.00	0.00
2-Wheeled Tractors (All Gasoline)	0.00	0.00	0.00	0.00	0.00
Shredder (>5 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Chain Saws (>4 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Crawler Dozers	0.00	0.00	0.00	0.00	0.00
Rubber-Tired Dozers	12.60	26.47	2.52	2.52	1.26
Crawler Tractors	0.00	0.00	0.00	0.00	0.00
Tractor (Utility Compact)	0.00	0.00	0.00	0.00	0.00
Tractor (Utility General Purpose)	0.00	0.00	0.00	0.00	0.00
Fellers/Bunchers	0.00	0.00	0.00	0.00	0.00
Concrete Pavers	0.00	0.00	0.00	0.00	0.00
Skidders	0.00	0.00	0.00	0.00	0.00
Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00
Graders	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00
Total Daily Equipment Emissions (Pounds per Day)	24.99	54.05	4.93	4.96	2.99

Mobile Source Emissions

Vehicle Class

	CO	NOx	ROG	SOx	PM10
Workers (Inc. Autos & Trks Under 5,151 Lbs)	40.61	1.22	5.42	0.00	0.10
Medium Trucks (5,751 - 8,500 lb)	0.00	0.00	0.00	0.00	0.00
Light Heavy Trucks (8,501 - 10,000 lb)	0.00	0.00	0.00	0.00	0.00
Light Heavy Trucks (10,0501 - 14,000 lb)	0.00	0.00	0.00	0.00	0.00
Medium Heavy Trucks (14,001 - 33,000 lb)	0.98	0.31	0.18	0.00	0.01
Heavy-Heavy Trucks (33,001 - 60,000 lb)	0.85	0.56	0.15	0.00	0.01
Total Daily Mobile-Source Emissions (Pounds per Day)	42.45	2.09	5.75	0.00	0.12

Dust Emissions

Area Disturbed

	PM10
Active Area	2.50
Unpaved Access Roads	2.50
Total Daily PM10 From Dust Emissions (Pounds per Day)	5.00

Total Daily Emission (Pounds per Day)

Exhaust Emissions (Pounds per Day)

	CO	NOx	ROG	SOx	PM10
Total Daily Emission (Pounds per Day)	67.44	56.14	10.68	4.96	8.11

Dust PM10 Emissions (Pounds per Day)

SCAQMD Daily Threshold Values (Pounds per Day)

	CO	NOx	ROG	SOx	PM10
SCAQMD Daily Threshold Values (Pounds per Day)	550	100	75	150	150

The included spreadsheet may be used to determine average daily emissions associated with project construction. Heavy equipment emission factors are as included in Tables A9-8-B, A9-8-C, and A9-8-D of the SCAQMD CEQA Air Quality Handbook (April 1993). The user has the option of changing any of these parameters and should adjust the number of pieces, horsepower ratings, and hourly usage values if better data are available. Vehicle Emissions are based on an SCAB Year 2005 model run of the CARB BURDEN2002 computer module included in the EMFAC2002 Emissions Model. The total daily vehicle emissions for each vehicle class included in the model was divided by the total number of vehicles miles traveled in each class so that an average emission rate per mile could be determined. Worker vehicles are a composite of light duty autos, light duty trucks under 3,750 pounds, light trucks between 3,751 and 5,150 pounds, and motorcycles. Per the URBEMIS2002 model, default trip lengths are set at 20 miles per trips for workers and 30 miles per trips for trucks. PM10 emissions associated with dust are based on the assumptions included in the URBEMIS2002 computer model distributed by the SCAQMD. The model reports

TUNNELING

INPUT ASSUMPTIONS

Heavy Equipment Emissions (All Diesel Except Where Noted)

Equipment Type	Number Used	Hours per Day	Horsepower	Load Factor	Exhaust Emission Factors (Pounds per Horsepower-Hour)				
					CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0	8	39	51.5	0.02	0.021	0.004	0.002	0.0015
Wheel Loaders	0	8	147	54	0.011	0.023	0.002	0.002	0.0015
Tractors/Loaders	0	8	77	46.5	0.015	0.022	0.003	0.002	0.001
Airport Terminal Tractc	0	8	96	82	0.013	0.031	0.003	0.002	0.0015
Excavators	0	8	56	58	0.011	0.024	0.001	0.002	0.0015
Trenchers	0	8	60	69.5	0.02	0.022	0.003	0.002	0.0015
Rollers	0	8	99	57.5	0.007	0.02	0.002	0.002	0.001
Other Construction Eq	1	6	161	62	0.02	0.024	0.003	0.002	0.0015
Cement/Mortar Mixers	0	8	11	56	0.01	0.024	0.002	0.002	0.001
Paving Equipment	0	8	99	53	0.01	0.024	0.002	0.002	0.001
Asphalt Pavers	0	8	91	59	0.007	0.023	0.001	0.002	0.001
Plate Compactors	0	8	8	43	0.007	0.02	0.002	0.002	0.001
Concrete Saws	0	8	56	73	0.02	0.002	0.024	0.003	0.001
Crushing Equipment	0	8	127	78	0.02	0.024	0.003	0.002	0.0015
Aerial Lifts	0	8	43	50.5	0.013	0.031	0.003	0.002	0.0015
Rough Terrain Fork Lif	0	8	93	47.5	0.022	0.018	0.003	0.002	0.0015
Fork Lifts	0	8	83	30	0.013	0.031	0.003	0.002	0.0015
Cranes	1	6	194	43	0.009	0.023	0.003	0.002	0.0015
Sprayers	0	8	92	50	0.008	0.017	0.005	0.002	0.0015
Dumpers/Tenders	0	8	23	38	0.006	0.021	0.002	0.002	0.001
Signal Boards (Routing	0	8	11.22	82	0.011	0.018	0.002	0.002	0.001
Bore/Drill Rigs (Grounc	1	6	209	75	0.02	0.024	0.003	0.002	0.0015
Sweepers/Scrubbers	0	8	97	68	0.013	0.031	0.003	0.002	0.0015
Generator Sets (<50 H	0	8	22	74	0.011	0.018	0.002	0.002	0.001
Pressure Washers (<5	0	8	21	30	0.011	0.018	0.002	0.002	0.001
Hydro Power Units	0	8	35	48	0.008	0.017	0.005	0.002	0.0015
Welders (<50 Hp)	1	6	35	45	0.011	0.018	0.002	0.002	0.001
Pumps (<50 Hp)	0	8	23	74	0.011	0.018	0.002	0.002	0.001
Air Compressors (<50	0	8	37	48	0.011	0.018	0.002	0.002	0.001
Landscape Loaders	0	8	55	46.5	0.02	0.021	0.004	0.002	0.0015
Backhoe Loaders	0	8	79	46.5	0.015	0.022	0.003	0.002	0.001
Log Loaders	0	8	116	46.5	0.015	0.022	0.003	0.002	0.001
Excavator (Utility)	0	8	34.2	58	0.011	0.024	0.001	0.002	0.0015
Excavator (Constructio	0	8	151.7	58	0.011	0.024	0.001	0.002	0.0015
Surfacing Equipment (,	0	8	8	49	0.83	0.004	0.043	0.0005	0.00025
Tampers/Rammers (A	0	8	8	55	0.83	0.004	0.043	0.0005	0.00025
2-Wheeled Tractors (A	0	8	7	62	0.6	0.0058	0.032	0.0005	0.00025
Shredder (>5 Hp, All G	0	8	8	36	1.479	0.0018	0.056	0.0004	0.0004
Chain Saws (>4 Hp, Al	0	8	6	50	2.15	0.0021	0.684	0.0008	0.00143
Crawler Dozers	0	8	102.9	59	0.011	0.023	0.002	0.002	0.0015

Rubber-Tired Dozers	0	8	356	59	0.01	0.021	0.002	0.002	0.001
Crawler Tractors	0	8	157	57.5	0.015	0.022	0.002	0.002	0.0015
Tractor (Utility Compact)	0	8	29.4	46.5	0.015	0.022	0.003	0.002	0.001
Tractor (Utility General)	0	8	69	46.5	0.015	0.022	0.003	0.002	0.001
Fellers/Bunchers	0	8	183	71	0.02	0.024	0.003	0.002	0.0015
Concrete Pavers	0	8	130	62	0.01	0.024	0.002	0.002	0.001
Skidders	0	8	134	61.5	0.011	0.025	0.002	0.002	0.0015
Off-Highway Trucks	0	8	489	41	0.032	0.026	0.005	0.002	0.002
Graders	0	8	156.6	57.5	0.008	0.021	0.003	0.002	0.001
Scrapers	0	8	266.76	66	0.011	0.019	0.001	0.002	0.0015

Mobile Source Emissions

Vehicle Class	Number Round-Trips	Miles Per Round-Trip
Workers (Inc. Autos & Trks Under 5,151 Lbs)	10	20
Medium Trucks (5,751 - 8,500 lb)	5	30
Light Heavy Trucks (8,501 - 10,000 lb)	5	30
Light Heavy Trucks (10,0501 - 14,000 lb)	2	30
Medium Heavy Trucks (14,001 - 33,000 lb)	2	30
Heavy-Heavy Trucks (33,001 - 60,000 lb)	4	30

Exhaust Emission Factors (Pounds per Mile)

CO	NOx	ROG	SOx	PM10
0.101532	0.003043	0.01354	0	0.000248
0.015801	0.003169	0.001737	2.56E-05	0.000169
0.015173	0.001489	0.001631	9.7E-06	0.000114
0.01933	0.002745	0.002021	1.59E-05	0.000156
0.016377	0.005212	0.003057	2.76E-05	0.00011
0.014217	0.009347	0.002549	5.07E-05	0.000178

Dust Emissions

Area Disturbed	Acres Disturbed
Active Area	0.5
Unpaved Access Roads	0.5

PM10 Emission factor (Pounds per Acre per Day)

PM10
5.00
5.00

OUTPUT VALUES

Heavy Equipment Emissions

Equipment Type	CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0.00	0.00	0.00	0.00	0.00
Wheel Loaders	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders	0.00	0.00	0.00	0.00	0.00
Airport Terminal Tractors	0.00	0.00	0.00	0.00	0.00
Excavators	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00
Rollers	0.00	0.00	0.00	0.00	0.00
Other Construction Equipment	11.98	14.37	1.80	1.20	0.90
Cement/Mortar Mixers	0.00	0.00	0.00	0.00	0.00
Paving Equipment	0.00	0.00	0.00	0.00	0.00
Asphalt Pavers	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.00	0.00	0.00	0.00	0.00
Concrete Saws	0.00	0.00	0.00	0.00	0.00
Crushing Equipment	0.00	0.00	0.00	0.00	0.00
Aerial Lifts	0.00	0.00	0.00	0.00	0.00
Rough Terrain Fork Lifts	0.00	0.00	0.00	0.00	0.00
Fork Lifts	0.00	0.00	0.00	0.00	0.00
Cranes	4.50	11.51	1.50	1.00	0.75
Sprayers	0.00	0.00	0.00	0.00	0.00
Dumpers/Tenders	0.00	0.00	0.00	0.00	0.00
Signal Boards (Routing Boards)	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs (Groundwater)	18.81	22.57	2.82	1.88	1.41
Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00
Generator Sets (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pressure Washers (<50 Hp)	0.00	0.00	0.00	0.00	0.00

Hydro Power Units	0.00	0.00	0.00	0.00	0.00
Welders (<50 Hp)	1.04	1.70	0.19	0.19	0.09
Pumps (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Air Compressors (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Landscape Loaders	0.00	0.00	0.00	0.00	0.00
Backhoe Loaders	0.00	0.00	0.00	0.00	0.00
Log Loaders	0.00	0.00	0.00	0.00	0.00
Excavator (Utility)	0.00	0.00	0.00	0.00	0.00
Excavator (Construction)	0.00	0.00	0.00	0.00	0.00
Surfacing Equipment (All gasoline)	0.00	0.00	0.00	0.00	0.00
Tampers/Rammers (All Gasoline)	0.00	0.00	0.00	0.00	0.00
2-Wheeled Tractors (All Gasoline)	0.00	0.00	0.00	0.00	0.00
Shredder (>5 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Chain Saws (>4 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Crawler Dozers	0.00	0.00	0.00	0.00	0.00
Rubber-Tired Dozers	0.00	0.00	0.00	0.00	0.00
Crawler Tractors	0.00	0.00	0.00	0.00	0.00
Tractor (Utility Compact)	0.00	0.00	0.00	0.00	0.00
Tractor (Utility General Purpose)	0.00	0.00	0.00	0.00	0.00
Fellers/Bunchers	0.00	0.00	0.00	0.00	0.00
Concrete Pavers	0.00	0.00	0.00	0.00	0.00
Skidders	0.00	0.00	0.00	0.00	0.00
Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00
Graders	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00
Total Daily Equipment Emissions (Pounds per Day)	36.33	50.16	6.31	4.27	3.15

Mobile Source Emissions

Vehicle Class	Exhaust Emissions (Pounds per Day)				
	CO	NOx	ROG	SOx	PM10
Workers (Inc. Autos & Trks Under 5,151 Lbs)	20.31	0.61	2.71	0.00	0.05
Medium Trucks (5,751 - 8,500 lb)	2.37	0.48	0.26	0.00	0.03
Light Heavy Trucks (8,501 - 10,000 lb)	2.28	0.22	0.24	0.00	0.02
Light Heavy Trucks (10,0501 - 14,000 lb)	1.16	0.16	0.12	0.00	0.01
Medium Heavy Trucks (14,001 - 33,000 lb)	0.98	0.31	0.18	0.00	0.01
Heavy-Heavy Trucks (33,001 - 60,000 lb)	1.71	1.12	0.31	0.01	0.02
Total Daily Mobile-Source Emissions (Pounds per Day)	28.80	2.91	3.82	0.01	0.13

Dust Emissions

Area Disturbed	Dust PM10 Emissions (Pounds per Day)				
	PM10				
Active Area	2.50				
Unpaved Access Roads	2.50				
Total Daily PM10 From Dust Emissions (Pounds per Day)	5.00				

Total Daily Emission (Pounds per Day)	CO	NOx	ROG	SOx	PM10
	65.13	53.07	10.13	4.28	8.28
SCAQMD Daily Threshold Values (Pounds per Day)	550	100	75	150	150

The included spreadsheet may be used to determine average daily emissions associated with project construction. Heavy equipment emission factors are as included in Tables A9-8-B, A9-8-C, and A9-8-D of the SCAQMD CEQA Air Quality Handbook (April 1993). The user has the option of changing any of these parameters and should adjust the number of pieces, horsepower ratings, and hourly usage values if better data are available. Vehicle Emissions are based on an SCAB Year 2005 model run of the CARB BURDEN2002 computer module included in the EMFAC2002 Emissions Model. The total daily vehicle emissions for each vehicle class included in the model was divided by the total number of vehicles miles traveled in each class so that an average emission rate per mile could be determined. Worker vehicles are a composite of light duty autos, light duty trucks under 3,750 pounds, light trucks between 3,751 and 5,150 pounds, and motorcycles. Per the URBEMIS2002 model, default trip lengths are set at 20 miles per trips for workers and 30 miles per trips for trucks. PM10 emissions associated with dust are based on the assumptions included in the URBEMIS2002 computer model distributed by the SCAQMD. The model reports

REMOVAL OF SHORING

INPUT ASSUMPTIONS

Heavy Equipment Emissions (All Diesel Except Where Noted)

Equipment Type	Number Used	Hours per Day	Horsepower	Load Factor	Exhaust Emission Factors (Pounds per Horsepower-Hour)				
					CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0	8	39	51.5	0.02	0.021	0.004	0.002	0.0015
Wheel Loaders	0	8	147	54	0.011	0.023	0.002	0.002	0.0015
Tractors/Loaders	0	8	77	46.5	0.015	0.022	0.003	0.002	0.001
Airport Terminal Tractc	0	8	96	82	0.013	0.031	0.003	0.002	0.0015
Excavators	0	8	56	58	0.011	0.024	0.001	0.002	0.0015
Trenchers	0	8	60	69.5	0.02	0.022	0.003	0.002	0.0015
Rollers	0	8	99	57.5	0.007	0.02	0.002	0.002	0.001
Other Construction Eq	0	8	161	62	0.02	0.024	0.003	0.002	0.0015
Cement/Mortar Mixers	0	8	11	56	0.01	0.024	0.002	0.002	0.001
Paving Equipment	0	8	99	53	0.01	0.024	0.002	0.002	0.001
Asphalt Pavers	0	8	91	59	0.007	0.023	0.001	0.002	0.001
Plate Compactors	0	8	8	43	0.007	0.02	0.002	0.002	0.001
Concrete Saws	0	8	56	73	0.02	0.002	0.024	0.003	0.001
Crushing Equipment	0	8	127	78	0.02	0.024	0.003	0.002	0.0015
Aerial Lifts	0	8	43	50.5	0.013	0.031	0.003	0.002	0.0015
Rough Terrain Fork Lif	0	8	93	47.5	0.022	0.018	0.003	0.002	0.0015
Fork Lifts	0	8	83	30	0.013	0.031	0.003	0.002	0.0015
Cranes	1	6	194	43	0.009	0.023	0.003	0.002	0.0015
Sprayers	0	8	92	50	0.008	0.017	0.005	0.002	0.0015
Dumpers/Tenders	0	8	23	38	0.006	0.021	0.002	0.002	0.001
Signal Boards (Routing	0	8	11.22	82	0.011	0.018	0.002	0.002	0.001
Bore/Drill Rigs (Groun	0	8	209	75	0.02	0.024	0.003	0.002	0.0015
Sweepers/Scrubbers	0	8	97	68	0.013	0.031	0.003	0.002	0.0015
Generator Sets (<50 H	0	8	22	74	0.011	0.018	0.002	0.002	0.001
Pressure Washers (<5	0	8	21	30	0.011	0.018	0.002	0.002	0.001
Hydro Power Units	0	8	35	48	0.008	0.017	0.005	0.002	0.0015
Welders (<50 Hp)	1	6	35	45	0.011	0.018	0.002	0.002	0.001
Pumps (<50 Hp)	0	8	23	74	0.011	0.018	0.002	0.002	0.001
Air Compressors (<50	0	8	37	48	0.011	0.018	0.002	0.002	0.001
Landscape Loaders	0	8	55	46.5	0.02	0.021	0.004	0.002	0.0015
Backhoe Loaders	0	8	79	46.5	0.015	0.022	0.003	0.002	0.001
Log Loaders	0	8	116	46.5	0.015	0.022	0.003	0.002	0.001
Excavator (Utility)	0	8	34.2	58	0.011	0.024	0.001	0.002	0.0015
Excavator (Constructi	1	6	151.7	58	0.011	0.024	0.001	0.002	0.0015
Surfacing Equipment (,	0	8	8	49	0.83	0.004	0.043	0.0005	0.00025
Tampers/Rammers (A	0	8	8	55	0.83	0.004	0.043	0.0005	0.00025
2-Wheeled Tractors (A	0	8	7	62	0.6	0.0058	0.032	0.0005	0.00025
Shredder (>5 Hp, All G	0	8	8	36	1.479	0.0018	0.056	0.0004	0.0004
Chain Saws (>4 Hp, Al	0	8	6	50	2.15	0.0021	0.684	0.0008	0.00143
Crawler Dozers	0	8	102.9	59	0.011	0.023	0.002	0.002	0.0015

Rubber-Tired Dozers	1	6	356	59	0.01	0.021	0.002	0.002	0.001
Crawler Tractors	0	8	157	57.5	0.015	0.022	0.002	0.002	0.0015
Tractor (Utility Compar	0	8	29.4	46.5	0.015	0.022	0.003	0.002	0.001
Tractor (Utility General	0	8	69	46.5	0.015	0.022	0.003	0.002	0.001
Fellers/Bunchers	0	8	183	71	0.02	0.024	0.003	0.002	0.0015
Concrete Pavers	0	8	130	62	0.01	0.024	0.002	0.002	0.001
Skidders	0	8	134	61.5	0.011	0.025	0.002	0.002	0.0015
Off-Highway Trucks	0	8	489	41	0.032	0.026	0.005	0.002	0.002
Graders	0	8	156.6	57.5	0.008	0.021	0.003	0.002	0.001
Scrapers	0	8	266.76	66	0.011	0.019	0.001	0.002	0.0015

Mobile Source Emissions

Vehicle Class	Number Round-Trips	Miles Per Round-Trip
Workers (Inc. Autos & Trks Under 5,151 Lbs)	10	20
Medium Trucks (5,751 - 8,500 lb)	5	30
Light Heavy Trucks (8,501 - 10,000 lb)	5	30
Light Heavy Trucks (10,0501 - 14,000 lb)	2	30
Medium Heavy Trucks (14,001 - 33,000 lb)	2	30
Heavy-Heavy Trucks (33,001 - 60,000 lb)	4	30

Exhaust Emission Factors (Pounds per Mile)

CO	NOx	ROG	SOx	PM10
0.101532	0.003043	0.01354	0	0.000248
0.015801	0.003169	0.001737	2.56E-05	0.000169
0.015173	0.001489	0.001631	9.7E-06	0.000114
0.01933	0.002745	0.002021	1.59E-05	0.000156
0.016377	0.005212	0.003057	2.76E-05	0.00011
0.014217	0.009347	0.002549	5.07E-05	0.000178

Dust Emissions

Area Disturbed	Acres Disturbed
Active Area	0.5
Unpaved Access Roads	0.5

PM10 Emission factor (Pounds per Acre per Day)

PM10
5.00
5.00

OUTPUT VALUES

Heavy Equipment Emissions

Equipment Type	CO	NOx	ROG	SOx	PM10
Skid-Steer Loaders	0.00	0.00	0.00	0.00	0.00
Wheel Loaders	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders	0.00	0.00	0.00	0.00	0.00
Airport Terminal Tractors	0.00	0.00	0.00	0.00	0.00
Excavators	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00
Rollers	0.00	0.00	0.00	0.00	0.00
Other Construction Equipment	0.00	0.00	0.00	0.00	0.00
Cement/Mortar Mixers	0.00	0.00	0.00	0.00	0.00
Paving Equipment	0.00	0.00	0.00	0.00	0.00
Asphalt Pavers	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.00	0.00	0.00	0.00	0.00
Concrete Saws	0.00	0.00	0.00	0.00	0.00
Crushing Equipment	0.00	0.00	0.00	0.00	0.00
Aerial Lifts	0.00	0.00	0.00	0.00	0.00
Rough Terrain Fork Lifts	0.00	0.00	0.00	0.00	0.00
Fork Lifts	0.00	0.00	0.00	0.00	0.00
Cranes	4.50	11.51	1.50	1.00	0.75
Sprayers	0.00	0.00	0.00	0.00	0.00
Dumpers/Tenders	0.00	0.00	0.00	0.00	0.00
Signal Boards (Routing Boards)	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs (Groundwater)	0.00	0.00	0.00	0.00	0.00
Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00
Generator Sets (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Pressure Washers (<50 Hp)	0.00	0.00	0.00	0.00	0.00

Hydro Power Units	0.00	0.00	0.00	0.00	0.00
Welders (<50 Hp)	1.04	1.70	0.19	0.19	0.09
Pumps (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Air Compressors (<50 Hp)	0.00	0.00	0.00	0.00	0.00
Landscape Loaders	0.00	0.00	0.00	0.00	0.00
Backhoe Loaders	0.00	0.00	0.00	0.00	0.00
Log Loaders	0.00	0.00	0.00	0.00	0.00
Excavator (Utility)	0.00	0.00	0.00	0.00	0.00
Excavator (Construction)	5.81	12.67	0.53	1.06	0.79
Surfacing Equipment (All gasoline)	0.00	0.00	0.00	0.00	0.00
Tampers/Rammers (All Gasoline)	0.00	0.00	0.00	0.00	0.00
2-Wheeled Tractors (All Gasoline)	0.00	0.00	0.00	0.00	0.00
Shredder (>5 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Chain Saws (>4 Hp, All Gasoline)	0.00	0.00	0.00	0.00	0.00
Crawler Dozers	0.00	0.00	0.00	0.00	0.00
Rubber-Tired Dozers	12.60	26.47	2.52	2.52	1.26
Crawler Tractors	0.00	0.00	0.00	0.00	0.00
Tractor (Utility Compact)	0.00	0.00	0.00	0.00	0.00
Tractor (Utility General Purpose)	0.00	0.00	0.00	0.00	0.00
Fellers/Bunchers	0.00	0.00	0.00	0.00	0.00
Concrete Pavers	0.00	0.00	0.00	0.00	0.00
Skidders	0.00	0.00	0.00	0.00	0.00
Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00
Graders	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00
Total Daily Equipment Emissions (Pounds per Day)	23.95	52.35	4.74	4.77	2.90

Mobile Source Emissions

Vehicle Class

	Exhaust Emissions (Pounds per Day)				
	CO	NOx	ROG	SOx	PM10
Workers (Inc. Autos & Trks Under 5,151 Lbs)	20.31	0.61	2.71	0.00	0.05
Medium Trucks (5,751 - 8,500 lb)	2.37	0.48	0.26	0.00	0.03
Light Heavy Trucks (8,501 - 10,000 lb)	2.28	0.22	0.24	0.00	0.02
Light Heavy Trucks (10,0501 - 14,000 lb)	1.16	0.16	0.12	0.00	0.01
Medium Heavy Trucks (14,001 - 33,000 lb)	0.98	0.31	0.18	0.00	0.01
Heavy-Heavy Trucks (33,001 - 60,000 lb)	1.71	1.12	0.31	0.01	0.02
Total Daily Mobile-Source Emissions (Pounds per Day)	28.80	2.91	3.82	0.01	0.13

Dust Emissions

Area Disturbed

	Dust PM10 Emissions (Pounds per Day)
	PM10
Active Area	2.50
Unpaved Access Roads	2.50
Total Daily PM10 From Dust Emissions (Pounds per Day)	5.00

Total Daily Emission (Pounds per Day)

	CO	NOx	ROG	SOx	PM10
	52.75	55.25	8.56	4.78	8.03

SCAQMD Daily Threshold Values (Pounds per Day)

	550	100	75	150	150
--	-----	-----	----	-----	-----

APPENDIX A-2 LOCALIZED SIGNIFICANCE THRESHOLD DISPERSION MODELING METHODOLOGY FOR CONSTRUCTION EMISSIONS

In accordance with the SCAQMD criteria, peak daily emissions for CO and NO₂ were modeled to determine their concentrations and contributions to the ambient concentrations within the project vicinity. The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology (Methodology)* (SCAQMD June 2003).

Modeling is performed using the USEPA SCREEN3 dispersion model and includes those emissions sources that operate continually at the site (i.e., heavy equipment). Mobile source emissions (i.e., worker and haul trips) are not to be included in the analysis as these emissions are spread over a large area and do not represent a localized source. The maximum daily emissions for CO and NO_x were determined based on emissions projections included in Appendix A-1. These values are 62.6 and 97.3 pounds per day, respectively.

An average hourly emission rate was then determined. In accordance with the construction schedule, construction could occur over a period of 12 hours during the day. The average hourly emission rate in grams per second was then calculated.

$$\text{CO} = 62.6 \text{ lb/day} \times 454 \text{ gm/lb} / 12 \text{ hr/day} / 60 \text{ min/hr} / 60 \text{ sec/min} = 0.66 \text{ gm/sec}$$
$$\text{NO}_x = 97.3 \text{ lb/day} \times 454 \text{ gm/lb} / 12 \text{ hr/day} / 60 \text{ min/hr} / 60 \text{ sec/min} = 1.02 \text{ gm/sec}$$

These values were then divided by the disturbed area including the active and disturbed unpaved areas (i.e., 1 acre) and a 1-hour concentration was derived.

$$\text{CO} = 0.66 \text{ gm/sec} / 43,560 \text{ ft}^2 / 3.28^2 \text{ ft}^2/\text{m}^2 = 0.00016458 \text{ gm/m}^2$$
$$\text{NO}_x = 1.02 \text{ gm/sec} / 43,560 \text{ ft}^2 / 3.28^2 \text{ ft}^2/\text{m}^2 = 0.00025255 \text{ gm/m}^2$$

These values were then modeled as an area source using the USEPA SCREEN3 dispersion model. Model parameters were selected in accordance with the *Methodology*. Accordingly, the emissions plume was set at an elevation of 5 meters while the receptors were set at an elevation of 2 meters. As a reasonable worst case, the highest atmospheric stability class was used in the modeling effort. In accordance with the discussion of local meteorology, daily wind speed was set at 4 miles per hour (1.8 m/sec), the minimum average daily wind speed through the project area.

According to the *Methodology*, receptors are assumed to be located at distances of 25, 50, 100, 200, and 500 meters. In cases where proximate receptors may be closer than 25 meters, as per the *Methodology*, a value of 25 meters is to be used in the analysis as a worst-case scenario. The projected 1-hour concentrations were then modeled at these distances and their off-site concentrations determined. A worst-case distance concentration is also modeled.

In the case of the 1-hour CO standard, the modeled concentration at each distance was added directly to an assumed ambient concentration. This ambient concentration is source-area dependant and is based on the peak 1-hour value observed over the last three years of accumulated data, i.e., 10 ppm (Table A-1).

For the 8-hour CO standard, the 1-hour concentration is multiplied by a persistence factor of 0.7 as recommended by the California Air Pollution Control Officers Association (*Air Toxics Assessment Manual*, October 1, 1987). The resultant value was added to the peak 8-hour value observed over the last three years of accumulated data, i.e., 4.4 ppm (Table A-1).

TABLE A-1
AMBIENT AIR QUALITY MONITORING SUMMARY FOR THE NORTH ORANGE COUNTY
MONITORING STATION¹
(NUMBER OF DAYS STANDARDS WERE EXCEEDED AND MAXIMUM LEVELS DURING SUCH
VIOLATIONS)

Pollutant/Standard	2000	2001	2002	2003	2004
Ozone					
State 1-Hour \geq 0.09 ppm	8	4	3	7	6
Federal 1-Hour > 0.12 ppm	1	0	0	2	0
Federal 8-Hour > 0.08 ppm	4	2	0	1	6
Max. 1-Hour Conc. (ppm)	0.14	0.114	0.121	0.165	0.099
Max. 8-Hour Conc. (ppm)	0.103	0.090	0.079	0.087	0.080
Carbon Monoxide					
State 1-Hour > 20 ppm	0	0	0	0	0
State 8-Hour > 9.1 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	14	11	10	8	7
Max. 8-Hour Conc. (ppm)	6.1	4.7	4.4	4.1	4.0
Nitrogen Dioxide					
State 1-Hour \geq 0.25 ppm	0 ²	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.12 ²	0.13	0.12	0.16	0.12
Inhalable Particulates (PM₁₀)³					
State 24-Hour > 50 $\mu\text{g}/\text{m}^3$	13	20 ²	8.2	9.8	11.5
Federal 24-Hour > 150 $\mu\text{g}/\text{m}^3$	0	0 ²	0	0	0
Max. 24-Hour Conc. ($\mu\text{g}/\text{m}^3$)	126	93 ²	69	96	74
Inhalable Particulates (PM_{2.5})³					
Federal 24-Hour > 65 $\mu\text{g}/\text{m}^3$	2.2 ²	0.4 ²	0.3	0.9	0.0
Max. 24-Hour Conc. ($\mu\text{g}/\text{m}^3$)	113.9 ²	70.8 ²	68.6	115.5	58.9

¹ Gaseous emissions are as monitored in at the La Habra monitoring station in North Orange County. Particulate emissions are as monitored at the Anaheim monitoring station in Central Orange County.

² Less than 12 full months of data and may not be representative.

³ Percent of samples exceeding standard.

In the case of NO₂ the calculation is slightly more complex. The ambient air quality standards are written in terms of NO₂. However, heavy equipment primarily emits NO that then goes on to form NO₂. As such, the *Methodology* includes factors than can be used to determine NO₂ concentrations at varying distances. Those used in the analysis are included below:

Downwind Distance (m)	NO ₂ /NO _x Ratio
20	0.053
25 ¹	0.054
50	0.059
100	0.074
200	0.114
500	0.258

¹ Value is not included in the SCAQMD methodology and is extrapolated.

The NO_x concentration modeled at each distance using the SCREEN3 model was then multiplied by the NO₂/NO_x ratio and the resultant value was added to the peak 1-hour value observed over the last three years of accumulated data, i.e., 0.16 ppm (Table A-1). Results of the analysis are included below.

Source	CO (1-Hr Conc.) ¹	CO (8-hr conc.) ²	NO ₂ (1-hr conc.) ³
Peak Daily Emissions (lb/day)	62.6	62.6	97.3
Concentration at 25 meters (ppm)	10.36	4.65	0.19
Concentration at 50 meters (ppm)	10.55	4.79	0.21
Concentration at 100 meters (ppm)	10.56	4.79	0.22
Concentration at 200 meters (ppm)	10.28	4.59	0.21
Concentration at 500 meters (ppm)	10.07	4.45	0.19
Worst-Case Concentration (ppm)	10.56 ppm @ 100 meters	4.79 ppm @ 100 meters	0.22 ppm @ 100 meters
Ambient Air Quality Standard	20 ppm	9.0 ppm	0.25
Exceeds Standard?	No	No	No

¹ Includes a background concentration of 10 ppm.

² Includes a background concentration of 4.4 ppm.

³ Includes a background concentration of 0.16 ppm.

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APPENDIX A-3
SCREEN3 MODEL INPUT DATA AND RESULTS

09/23/05
14:14:43

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MWD CROSSFEEDER CO CONCENTRATIONS

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = AREA
EMISSION RATE (G/(S-M**2)) = .130040E-03
SOURCE HEIGHT (M) = 5.0000
LENGTH OF LARGER SIDE (M) = 63.6000
LENGTH OF SMALLER SIDE (M) = 63.6000
RECEPTOR HEIGHT (M) = 2.0000
URBAN/RURAL OPTION = URBAN
MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = .000 M**4/S**2.

*** STABILITY CLASS 6 ONLY ***
*** 10-METER WIND SPEED OF 1.80 M/S ONLY ***

*** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
25.	288.3	6	1.8	1.8	10000.0	5.00	45.
50.	443.8	6	1.8	1.8	10000.0	5.00	45.
100.	448.8	6	1.8	1.8	10000.0	5.00	45.
200.	220.2	6	1.8	1.8	10000.0	5.00	45.
500.	56.72	6	1.8	1.8	10000.0	5.00	40.

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	448.8	100.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

09/23/05
14:16:47

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MWD CROSSFEEDER NO2 CONCENTRATIONS

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = AREA
EMISSION RATE (G/(S-M**2)) = .189740E-03
SOURCE HEIGHT (M) = 5.0000
LENGTH OF LARGER SIDE (M) = 63.6000
LENGTH OF SMALLER SIDE (M) = 63.6000
RECEPTOR HEIGHT (M) = 2.0000
URBAN/RURAL OPTION = URBAN
MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = .000 M**4/S**2.

*** STABILITY CLASS 6 ONLY ***
*** 10-METER WIND SPEED OF 1.80 M/S ONLY ***

*** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
25.	420.6	6	1.8	1.8	10000.0	5.00	45.
50.	647.6	6	1.8	1.8	10000.0	5.00	45.
100.	654.8	6	1.8	1.8	10000.0	5.00	45.
200.	321.2	6	1.8	1.8	10000.0	5.00	45.
500.	82.76	6	1.8	1.8	10000.0	5.00	40.

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	654.8	100.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

ORANGE COUNTY CROSS FEEDER PROJECT

Responses to Comments
Negative Declaration
SCH# 2005101008

Metropolitan Report No. 1277

November 2005



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

1.0 INTRODUCTION

The Metropolitan Water District of Southern California (Metropolitan) proposes the Orange County Cross Feeder Project (Project) in the cities of Anaheim and Placentia, in Orange County, California. Metropolitan is the lead agency, as defined by the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, for the Project's Negative Declaration and Initial Study (ND/IS). The ND/IS was released for public review on October 5, 2005.

The Project would involve the construction of the Orange County Cross Feeder, a 2.36-mile, 84-inch diameter welded steel pipe that would connect Metropolitan's Second Lower Feeder to Metropolitan's East Orange County Feeder No. 2. The Project would be located within and adjacent to the public right-of-way of Miraloma Avenue, from approximately 700 feet east of Red Gum Street, to the intersection of Miraloma Avenue and Richfield Road. The majority of the Project alignment would be located within the city of Anaheim, except for the most easterly segment, which would be located in the city of Placentia.

2.0 COMMENT LETTERS

The comment period for the ND ended on November 4, 2005. In all, eight (8) comment letters were received from two (2) state agencies and five (5) local agencies. Each of the letters, together with Metropolitan's responses to individually numbered comments, is included immediately following this page. The letters are arranged in the order indicated below.

STATE AGENCIES

- A. Governor's Office of Planning and Research, State Clearinghouse
- B. California Department of Transportation
- C. California Department of Transportation

LOCAL AGENCIES

- D. County of Orange
- E. Southern California Regional Rail Authority
- F. City of Anaheim
- G. Orange County Water District
- H. Orange County Fire Authority



STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit



Arnold Schwarzenegger
Governor

Sean Walsh
Director

November 3, 2005

Anthony Klecha
Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, CA 90012

Subject: Orange County Cross Feeder Project
SCH#: 2005101008

Dear Anthony Klecha:

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. The review period closed on November 2, 2005, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts
Director, State Clearinghouse

1

SCH# 2005101008
Project Title Orange County Cross Feeder Project
Lead Agency Metropolitan Water District of Southern California

Type Neg Negative Declaration
Description The proposed project would involve the construction of the Orange County Cross Feeder, a 2.36-mile, 84-inch diameter welded steel pipe that would connect Metropolitan's Second Lower Feeder to Metropolitan's East Orange county Feeder No. 2.

Lead Agency Contact

Name Anthony Klecha
Agency Metropolitan Water District of Southern California
Phone (213) 217-5528 **Fax**
email
Address 700 N. Alameda Street
City Los Angeles **State** CA **Zip** 90012

Project Location

County Orange
City Placentia, Anaheim
Region
Cross Streets Miraloma Avenue and Richfield Road
Parcel No.
Township 3,4S **Range** 9W **Section** **Base**

Proximity to:

Highways 55,57,90,91
Airports
Railways OCTA Metrolink
Waterways Carbon Canyon Diversion Channel, Santa Ana River
Schools El Camino Real Cont., Espanza High
Land Use

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 5; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 12; Department of Health Services; State Water Resources Control Board, Clean Water Program; Regional Water Quality Control Board, Region 8; Native American Heritage Commission

Date Received 10/04/2005 **Start of Review** 10/04/2005 **End of Review** 11/02/2005

DEPARTMENT OF TRANSPORTATION

DISTRICT 12

3337 MICHELSON DRIVE SUITE 380
IRVINE, CA 92612-8894



*Flex your power!
Be energy efficient!*

October 26, 2005

Mr. Mr. Anthony Klecha
Metropolitan Water District of So. California
700 N. Alameda St.
Los Angeles, CA 90012

File: IGR/CEQA
SCH#: 2005101008
Log#: 1635
Route: SR-91, SR-57

Dear Mr. Klecha,

Thank you for the opportunity to review and comment on the **Negative Declaration** dated October, 2005, for the Orange County Cross Feeder Project. The project involves construction of a 2.36-mil-long, 84-inch diameter pipe to carry potable water, and is located along Miraloma Avenue in Anaheim, between Richfield Road and Red Gum Street.

Caltrans District 12, as a review agency on this project, has the following comment on the Negative Declaration (ND):

- Among the "Required Approvals" listed on page 12 of the ND is a Clean Water Act 404 Permit from the U.S. Army Corps of Engineers. If approval is needed from this federal agency, the project would need to comply with the requirements of the National Environmental Policy Act (NEPA).

If you have any questions or need to contact us, please call Barbara Gossett at (949)440-4461.

Sincerely,

A handwritten signature in black ink that reads "Robert F. Joseph".

Robert F. Joseph, Chief
IGR/Community Planning Branch

c: Terri Pencovic, HQ IGR/Community Planning
Terry Roberts, OPR
Isaac Alonso Rice, Caltrans District 12 Traffic Operations

"Caltrans improves mobility across California"

Letter B

DEPARTMENT OF TRANSPORTATION

DISTRICT 12
3337 MICHELSON DRIVE
SUITE C380
IRVINE, CA 92612-1699
PHONE (949) 724-2000



*Flex your power!
Be energy efficient!*

October 27, 2005

Mr. Anthony Klecha
Metropolitan Water District of Southern California
Environmental Planning Team
700 North Alameda Street
Los Angeles, CA 90012

IGR/CEQA
Log # 1633
ND
SR91, 57,55

Dear Mr. Klecha:

Subject: Orange County Cross-Feeder Project, Report No. 1277

Thank you for the opportunity to review and comment on **the Negative Declaration (ND)** for the **Orange County Cross Feeder (OCCF) Project – Report No. 1277**. The proposed project is construction of the OCCF, a 2.36-mile, 84-inch diameter welded steel pipe (WSP) that would connect Metropolitan Water District's (MWD) Second Lower Feeder to their East Orange County Feeder No. 2 (EOCF2).

The project site is located within and adjacent to the public right-of-way of Miraloma Avenue, from approximately 700 feet east of Red Gum Street, to the intersection of Miraloma Avenue and Richfield Road, in the cities of Anaheim and Placentia in Orange County.

Caltrans District 12 is a reviewing agency and has the following comment:

As proposed, this project should not impact Caltrans facilities and we have no comments.

However, if the project scope changes and any project work, (e.g. street widening, emergency access improvements, sewer connections, sound walls, storm drain construction, street connections, etc.) occurs in the vicinity of the Caltrans right-of-way, an encroachment permit would be required and environmental concerns must be adequately addressed.

If the environmental documentation for the project does not meet Caltrans requirements, additional documentation would be required before approval of the encroachment permits. Please coordinate with Caltrans to meet requirements for any work within or near Caltrans right-of-way.

Mr. Anthony Klecha
October 27, 2005
Page 2

Please continue to keep us informed of projects that may impact our State Transportation Facilities. If you have any questions or comments, please contact Lynne Gear (949) 724-2241.

| 2

Sincerely,


Robert F. Joseph, Chief
IGR/Community Planning

Attachment

cc: Terri Pencovic, Headquarters
Terry Roberts, OPR
Leslie Manderscheid, Environmental Planning

ENVIRONMENTAL REVIEW REQUIREMENTS FOR ENCROACHMENT PERMITS

Any Party, outside of Caltrans, that does work on a State Highway or Interstate Highway in California needs to apply for an encroachment permit. To acquire any encroachment permit, environmental concerns must be addressed. Environmental review of encroachment permit applications may take 3 weeks if the application is complete or longer if the application is incomplete. For soil disturbing activities (e.g. geotechnical borings, grading, usage of unpaved roads from which dirt and other materials may be tracked onto the State/Interstate highways, etc.), compliance with Water Quality and Cultural Resources Provisions are emphasized. Surveys may/ may not be soil-disturbing activities, depending on the site and survey method.

A complete application for environmental review includes the following:

1. If an environmental document (CE, EIR/EIS, ND, etc.) has been completed for the project, copy of the final, approved document must be submitted with the application.
2. **Water Quality Provision:** All work within the State Right of Way must conform to Caltrans Standard Plans and Standard Specifications for Water Pollution Control including production of a Water Pollution Control Program or Storm Water Pollution Prevention Plan as required. The applicant must provide Encroachments with a copy of the Storm Water Pollution Prevention Plan (SWPPP) including Best Management Practices (BMPs) to be implemented for construction activities impacting Caltrans Right of Way, prepared for this as required by the NPDES Statewide Storm Water Permit for General Construction Activities. If no SWPPP has been prepared for this project, then the applicant must follow the requirements described in the attached Water Pollution Control Provisions (please see attachment).
3. **Cultural Resources Provisions:** If not included in the environmental document, before permit approval and project construction, the encroachment permit applicant must complete a Cultural Resource Assessment pursuant to Caltrans Environmental Handbook, Volume 2, Appendix B-1, and Exhibit 1, as amended. The Cultural Resources Assessment ascertains the presence or absence of cultural resources within a one-mile radius of the project area and evaluates the impact to any historical/cultural resource. Cultural Resources include "those resources significant in American history, architecture, archaeology, and culture, including Native American Resources" (Caltrans Environmental Handbook, Volume 2, Chapter1, as amended)]. The Cultural Resource Assessment must include:
 - a) a clear project description and map indicating project work, staging areas, site access, etc.;
 - b) a Record Search conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. For information call (714) 278-5395;
 - c) proof of Native American consultation. Consultation involves contacting the Native American Heritage Commission (NAHC), requesting a search of their Sacred Lands File, and following the recommendations provided by the NAHC. For information call (916) 653-4082;
 - d) documentation of any historic properties (e.g. prehistoric and historic sites, buildings, structures, objects, or districts listed on, eligible for, or potentially eligible for listing on the National Register of Historic Places) within a one mile radius of the project area;
 - e) and a survey by qualified archaeologist for all areas that have not been previously researched.

The SCCIC and NAHC have an approximate turn around time of 2 weeks.

4. **Biological Resources Provisions:** Work conducted within Caltrans Right of Way should have the appropriate plant and wildlife surveys completed by a qualified biologist. If the information is not included in the environmental document, Environmental Planning requests that the applicant submit a copy of the biological study, survey, or technical report by a qualified biologist that provides details on the existing vegetation and wildlife at the project site and any vegetation that is to be removed during project activities. Official lists and databases should also be consulted for sensitive species such as the California Natural Diversity Database and lists provided by the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Any impacts that affect waterways and drainages and/or open space during construction, or that occur indirectly as a result of the project must be coordinated with the appropriate resource agencies. As guidance, we ask that the applicant include:
 - a) clear description of project activities and the project site
 - b) completed environmental significance checklist (not just yes and no answers, but a description should be given as to the reason for the response),
 - c) staging/storage areas noted on project plans,
 - d) proposed time of year for work and duration of activities (with information available),
 - e) any proposed mitigation (if applicable to the project),
 - f) and a record of any prior resource agency correspondence (if applicable to the project).



COUNTY OF ORANGE

RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

Bryan Speegle, Director
300 N. Flower Street
Santa Ana, CA
P.O. Box 4048
Santa Ana, CA 92702-4048
Telephone: (714) 834-2300
Fax: (714) 834-5188

NCL 05-040

November 3, 2005

Anthony Klecha
Corporate Resources Group, Environmental Planning Team
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

SUBJECT: ND/IS for the Orange County Cross Feeder Project

Dear Mr. Klecha:

The above referenced item is a Negative Declaration/Initial Study (ND/IS) for The Metropolitan Water District of Southern California. The proposed project involves the construction of the Orange County Cross Feeder, a 2.36-mile, 84-inch diameter welded steel pipe (WSP) connecting Metropolitan's Second Lower Feeder to Metropolitan's East Orange County Feeder No. 2 (EOCF). The 84-inch pipe crosses OCFCD's Carbon Creek Diversion Channel (E02). We have the following comments for your consideration:

1. Our review of the Negative Declaration (ND) for the Orange County Cross Feeder . The project proponent needs to ensure that the proposed project will not result in adverse impacts or worsening of existing conditions in County and OCFCD facilities. The project proponent should analyze impacts and propose mitigation measures in consultation with the Orange County Resources & Development Department's Flood Control Division to ensure flooding potential will not be worsened, floodplains and flooding problems will not be shifted elsewhere and erosion will not be caused by the proposed project.

1

Letter D

2. All work within, over and/or under OCFCD and/or County of Orange right-of-way should be conducted only after receiving an encroachment permit from the County. For information regarding County Property Permit application process, Valerie Oxford of the County Property Permits Section should be contacted at (714) 834-3474.

2

Thank you for the opportunity to respond to the ND/IS. If you have any questions, please contact Charlotte Harryman at (714) 834-2522.

Sincerely,



Ronald L. Tippetts, Chief
Environmental Planning Division



SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY

Member Agencies:
 Los Angeles County
 Metropolitan Transportation
 Authority.
 Orange County
 Transportation Authority.
 Riverside County
 Transportation Commission.
 San Bernardino
 Associated Governments.
 Ventura County
 Transportation Commission.
Ex Officio Members:
 Southern California
 Association of Governments.
 San Diego Association
 of Governments.
 State of California.

November 3, 2005

Anthony A. Klecha
 The Metropolitan Water District of Southern California
 Environmental Planning Team
 700 N. Alameda Street
 Los Angeles, CA 90012

**Subject: Negative Declaration
 Orange County Cross Feeder Project**

Dear Mr. Klecha:

The Southern California Regional Rail Authority (SCRRA) is a joint powers authority of five county transportation agencies organized under the provisions of the Joint Powers Act, Sections, 6500 *et seq.* of the California Government Code, and Section 130255 of the California Public Utilities Code, that builds, maintains, and operates Metrolink commuter railroad system within Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties. The Orange County Cross Feeder Project crosses the SCRRA Orange Subdivision at Milepost 0.60 in the City of Anaheim. This rail line has average daily train traffic of 12 passenger and 6 freights. Although the Negative Declaration is not a set of construction plans for our review, we can make some preliminary comments at this time. Please include SCRRA at all levels of design review since both our agency and yours have a vested interest in working safely in the area of an active rail line. With that in mind we can offer the following comments:

1. A 104" casing and the tunneling that goes along with it have the potential to significantly impact railroad operations. Current SCRRA Engineering Standards do not include specifications for a 104" casing, so it will have to be reviewed by the SCRRA design review team and any consultants required. | 1
2. Open trenching will not be allowed within the Zone of Influence for Cooper E-80 railroad loading. The proposed tunneling method must be also be reviewed by SCRRA. | 2
3. Shoring plans must be reviewed by SCRRA also cognizant of Cooper E-80 railroad loading. | 3
4. Traffic control plans must be submitted and approved by SCRRA. In general traffic lane closures should provide for railroad gate protection at all times for both westbound and eastbound traffic. | 4
5. Page 12, "Required Approvals", make no mention of SCRRA review. SCRRA will require that a full set of construction drawings with a completed Right of Way Encroachment Application be submitted for review. Upon completion of SCRRA design | 5

Letter E

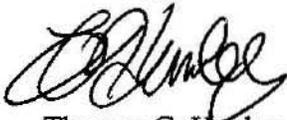
Mr. Anthony A. Kletcha
November 3, 2005
Page 2

review, a license agreement will be prepared by OCTA upon favorable recommendation of SCRRRA. A Right of Entry Agreement Form 6 will be issued to the construction contractor after preparation of the appropriate license agreement or easement. We suggest that these documents be included in the bid documents.

↑ 5

If you have any questions, I can be reached at (213) 452-0256 by phone, (213) 452-0423 by fax, and hanleyt@scrra.net by e-mail.

Sincerely,



Thomas G. Hanley, P.E.
Right-of-Way Engineer

Attachments

TGH: tgh

Cc: Deidra Knox
Ron Mathieu

City of Anaheim PLANNING DEPARTMENT

November 4, 2005

Anthony Klecha
Corporate Resources Group, Environmental Planning Team
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Re: Notice of Availability/Notice of Intent to Adopt a Negative Declaration for the Orange County Cross Feeder Project

Dear Mr. Klecha:

Thank you for the opportunity to review and comment on the above-referenced project. City of Anaheim staff offers the following comments on the submitted Negative Declaration.

UTILITIES DEPARTMENT – WATER ENGINEERING DIVISION

- 1. Pages 1-5, Section 1, “Project Description”:** The document states, “The purpose of the proposed Project is to: (1) increase operational flexibility by maximizing deliveries of SWP supplies into southern Orange County; and (2) increase the reliability of deliveries to Metropolitan’s Diemer Plant.”

Staff recommends that an additional, regional map be provided that illustrates the connection from the SWP to MWD’s Jensen Plant to the 2nd Lower Feeder, and then into southern Orange County.

1

- 2. Page 36, Section 3 “Hydrology and Water Quality (a) – paragraph 2”:** “...some groundwater dewatering may also be required, particularly adjacent to the Carbon Canyon Diversion Channel and the Metrolink railroad tracks.”

The area within the vicinity of the project (e.g., Kraemer Basin, Miller Retarding Basin, etc) is used to recharge the Orange County groundwater basin. Dewatering projects that instead discharge to local storm drain channels may reduce the amount of water supply available to the region. Please specify the quantity of potential groundwater dewatering that may be needed, in cubic feet per second (cfs), and its subsequent impact to the regional water supply.

2

If you have any questions relative to the above comments, please contact Rick Shintaku, Principal Water Engineer, at (714) 765-4181.



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**PUBLIC WORKS DEPARTMENT – TRAFFIC ENGINEERING
DIVISION**

1. Page 1, Section 1, Project Description:

The document indicates, “The proposed alignment would be approximately 40 feet wide by 12,500 feet long and would contain both construction and staging areas.” Page 9 of this same Section indicates that a trench “approximately 12 feet wide and 16 feet deep would be excavated...”

Existing City safety standards will require a minimum 5-foot wide buffer zone between the open trench and the travel lane on Miraloma Avenue. Since the existing roadway width (curb to curb) on Miraloma Avenue is 64 feet and two 12-foot wide lanes are required (one for each direction of travel), the 40-foot wide work area will need to include a minimum 5-foot wide buffer zone with the final width to be determined by an engineering soils analysis.

3

2. Page 13, Project Schedule:

“For work in the City of Anaheim, all construction activities, except dewatering and tie-in activities would occur between 7:00 AM to 7:00 PM daily.” This section also indicates that construction activities will occur for a period of approximately 16 months from December 2006, through March 2008.

Staff strongly recommends the use of Saturday hours of construction in order to alleviate potential traffic impacts occurring from the availability of only one travel lane resulting from construction activity. Additionally, as Section 6.70.010 of the City’s Municipal Code exempts governmental agencies from the applications of the City’s Noise Ordinance and given the lack of sensitive land uses near the project site, construction activities could be extended beyond the hours cited above.

4

3. Page 48, Transportation/Traffic Discussion; 2nd paragraph:

“...with the exception of the intersection at Kraemer Boulevard and La Palma Avenue which operate at LOS F for the PM Peak Hour.”

Please be aware that in June 2008, a major widening project by the City of Anaheim will be underway at the intersection of La Palma Avenue and Kraemer Boulevard. Significant, temporary traffic impacts in this area can be avoided if the Orange County Cross Feeder Project is completed by the proposed completion date of March 2008.

5

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- 4. **Page 48, Transportation/Traffic (a), paragraph 1:**
“The Anaheim Circulation Element identifies LOS D as the operational threshold for traffic circulation (for intersection of Miraloma Avenue and Tustin Avenue)...”

LOS D is the operational threshold for intersections while LOS C or better is the City’s threshold for mid-block segments. The proposed project will result in the reduction of one through lane per direction of travel. As a two lane undivided roadway, Miraloma Avenue will operate at LOS E during construction. Staff recommends that the project include sign postings in advance of the proposed construction advising the public of construction delays and possible detour routes in order to help mitigate traffic impacts.

6

Additionally, Levels of Service at the impacted intersections should be recalculated to address the planned travel lane reductions during construction.

7

Should you have any questions regarding the above comments, please contact Taher Jalai, Principal Traffic Engineer at (714) 765-5066.

PLANNING DEPARTMENT – PLANNING SERVICES DIVISION

- 1. **Page 11, Dewatering of Isolated Pipelines:**
“Half of the water would be discharged into Atwood Channel in the City of Placentia.”

The Atwood Channel also traverses the City of Anaheim. Staff recommends that the dewatering process be minimized during the rainfall season or during any storm event in order to decrease the potential for exceeding channel capacity.

8

- 2. **Page 21, Agricultural Resources:**
“The potential staging area located off of Van Buren Street is designated as Agricultural Use per the City of Anaheim. If this site is used for staging, there may be a temporary loss of agricultural product.”

The property in question is currently designated for Industrial land uses in the General Plan and zoned SP94-1 (Northeast Area Specific Plan – Development Area 1, “Industrial Area”). While the property may currently be in use for agricultural purposes, it is not designated for such by the City of Anaheim.

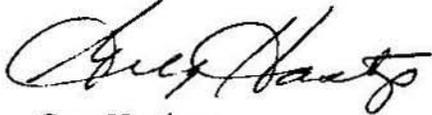
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We would again like to thank you for the opportunity to comment on the Negative Declaration. Please forward any further environmental documentation relative to this project to Marie Newland, Planner, at the address indicated on the first page of this letter. She may also be contacted at (714) 765-5139, Ext. 5739.

10

Sincerely,



Greg Hastings
Planning Services Manager

c: Taher Jalai, Public Works Department – Traffic Engineering
John Lower, Public Works Department – Traffic Engineering
Rick Shintaku, Public Utilities – Water Engineering
David Allen, Public Utilities – Water Engineering

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 ROGER C. YOY



ORANGE COUNTY WATER DISTRICT

Orange County's Groundwater Authority

Officers

PHILIP L. ANTHONY
President

JAN DEBAY
First Vice President

KATHRYN L. BARR
Second Vice President

—

VIRGINIA GREBBIEN
General Manager

November 4, 2005

Anthony Klecha
 Corporate Resources Group, Environmental Planning Team
 The Metropolitan Water District of Southern California
 P. O. Box 54153
 Los Angeles, CA 90054-0153

Re: Negative Declaration for the Orange County Cross Feeder Project

Dear Mr. Klecha:

The Orange County Water District (OCWD) would like to provide four comments on the Negative Declaration for the Orange County Cross Feeder Project prepared by the Metropolitan Water District of Southern California (MWDSC):

1- Pipeline conflicts and crossings

MWDSC must be aware that OCWD recently installed a 60-inch recycled water pipeline within the banks of the Carbon Canyon Diversion Channel as part of the Groundwater Replenishment System (GWR System). Additionally, OCWD owns and operates a large diameter pipeline connecting Warner Basin to Anaheim Lake. This pipeline is in Tustin Avenue and Miraloma Avenue. The MWDSC Orange County Cross Feeder will intersect these two pipelines. MWDSC will need to take all necessary precautions to prevent any impact(s) to these two facilities.

1

2- Dewatering during construction

Any project dewatering operations must be coordinated with OCWD to make sure that these discharge flows do not adversely affect OCWD's recharge operations regardless of their duration.

2

3- Traffic control

MWDSC must ensure that OCWD and the County of Orange can access Anaheim Lake and Kraemer Basin from Miraloma Avenue with vehicles and heavy equipment such as flatbed trailers carrying bulldozers.

3

Letter G

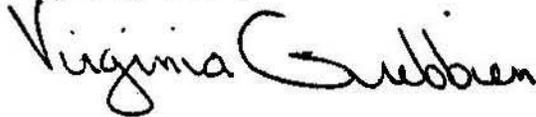
Mr. A. Klecha
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4- Potential staging areas

Figure 3 shows three potential staging areas located on OCWD's land at Kraemer Basin and Anaheim Lake. MWDSC must provide OCWD more details on these potential staging areas and the time of use before OCWD can evaluate whether or not MWDSC may be able to use OCWD's land for staging equipment and supplies for this project. OCWD is not listed as an agency contacted by MWDSC in Section 5 of the Negative Declaration. | 4

The contact person at OCWD for this project is Adam Hutchinson who can be reached at (714) 378-3214 or, via e-mail, ahutchinson@OCWD.com.

Very Truly Yours,



Virginia Grebbien
General Manager

VG:lt



ORANGE COUNTY FIRE AUTHORITY

P.O. Box 57115, Irvine, CA 92619-7115 • 1Fire Authority Rd., Irvine, CA 92602

Chip Prather, Fire Chief

www.ocfa.org

(714) 573-6000

November 7, 2005

Metropolitan Water District
Anthony Klecha, Corp. Resources Group
PO Box 54123
Los Angeles, CA 90054-0153

SUBJECT: Orange County Cross Feeder Project

Dear Mr. Kletcha:

Thank you for the opportunity to review the subject document. While no additional public safety resources are anticipated as a result of this project, all standard conditions and guidelines will be applied to the project during the normal plan review process. Please note the following comments:

-Please ensure the project area has adequate emergency vehicle access. Provide notice of any road closures to the City of Placentia, County of Orange, or the Orange County Fire Authority.

| 1

Thank you for providing us with this information. Please contact me at 714-573-6199 if you have any questions.

Sincerely,

Michele Hernandez
Management Analyst, Strategic Services

3.0 RESPONSES TO COMMENTS

Letter A, California State Clearinghouse, November 3, 2005

1. Comment noted.

Letter B, California Department of Transportation, October 26, 2005

1. Should Metropolitan be required to apply for a Clean Water Act Section 404 permit, the U.S. Army Corps of Engineers, acting as the Lead Agency pursuant to the National Environmental Policy Act (NEPA), would determine the level of environmental analysis necessary to comply with NEPA.

Letter C, California Department of Transportation, October 27, 2005

1. If the Project scope changes, Metropolitan will coordinate with Caltrans, as necessary, to obtain any required encroachment permits. Any new potential environmental effects will be addressed, as required.
2. Metropolitan will continue to inform Caltrans of any Metropolitan projects that may impact State Transportation Facilities.

Letter D, County of Orange, November 3, 2005

1. Potential flooding and erosion impacts were analyzed in the Project's ND. No potentially significant impacts were identified. No mitigation measures are required.
2. Metropolitan will obtain an encroachment permit, as required, from the County of Orange prior to commencing construction within, over, and/or under any Orange County Flood Control District and/or County of Orange right-of-ways.

Letter E, Southern California Regional Rail Authority, November 3, 2005

1. Metropolitan will provide the Southern California Regional Rail Authority (SCRRA) with a copy of the Project's design specifications for review prior to commencing construction.
2. Metropolitan will provide SCRRA with a copy of the Project's tunneling method for review prior to commencing construction.
3. Metropolitan will provide SCRRA with a copy of the Project's shoring plans for review prior to commencing construction.

4. Metropolitan will provide SCRRA with a copy of the Project's traffic control plans for review prior to commencing construction.
5. Metropolitan will provide SCRRA with a full set of construction drawings and a completed Right of Way Encroachment Application for review prior to commencing construction.

Letter F, City of Anaheim, November 4, 2005

1. Metropolitan will consider the inclusion of such map in future environmental documents, as appropriate.
2. Geotechnical borings drilled by Metropolitan within 1,000 feet of the Carbon Creek diversion channel did not encounter groundwater, indicating that groundwater levels are below the expected maximum depth of excavation for the feeder. This is consistent with groundwater data obtained from the Orange County Water District, including recent near-historic high groundwater levels experienced this past year. Any groundwater encountered during construction would be expected to be locally perched water, which would not be representative of the regional groundwater table. Metropolitan will coordinate closely with the city of Anaheim to ensure that any potential impacts to the regional water supply are less than significant.
3. Metropolitan will coordinate all traffic diversions with the cities of Anaheim and Placentia prior to commencing construction.
4. Metropolitan will consider whether it is both feasible and practical to extend the construction workweek beyond 7:00 PM and to include Saturdays.
5. Comment noted.
6. Prior to commencing construction, Metropolitan will post signs along the alignment to inform the public of potential construction delays.
7. Metropolitan will consider recalculating the Levels of Service at impacted intersections during the development of the Project's traffic control plans.
8. Comment noted.
9. Comment noted.
10. Metropolitan will forward any further applicable environmental documentation relative to this project to Ms. Marie Newland.

Letter G, Orange County Water District, November 4, 2005

1. Metropolitan will coordinate with the Orange County Water District (OCWD), as necessary, to avoid potential impacts to existing facilities owned and/or operated by OCWD.
2. Metropolitan will ensure that OCWD's recharge operations will not be adversely affected due to Project dewatering operations.
3. During Project construction, Metropolitan will ensure that adequate access is maintained to Anaheim Lake and Kraemer Basin.
4. Comment noted.

Letter H, Orange County Fire Authority, November 7, 2005

1. During Project construction, Metropolitan will ensure that adequate emergency vehicle access is maintained in the Project area. All traffic diversions and road closures will be coordinated with the cities of Anaheim and Placentia, the County of Orange, and the Orange County Fire Authority, as appropriate, prior to commencing construction.