APPENDIX A

1999 STRATEGIC PLAN FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM

ORANGE COUNTY SANITATION DISTRICT
MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE

1999 STRATEGIC PLAN

Introduction

This is the Mitigation Monitoring and Reporting Program (MMRP) for the 1999 Strategic Plan approved by the Orange County Sanitation District.

This project has been analyzed in accordance with the California Environmental Quality Act (CEQA) requirements in the Environmental Impact Report (EIR) for the OCSD 1999 Strategic Plan Project (certified October 27, 1999). This MMRP is required by Section 21081.6 of the Public Resources Code (the CEQA statutes).

Mitigation Monitoring and Reporting Program

The MMRP includes the mitigation measures identified in the EIR required to address only the significant impacts associated with the project components being approved. The significant impacts associated with this project and the required mitigation measures are summarized in this program; the full text of the impact analysis and mitigation measures is presented in the Draft PEIR (published June 29, 1999). The mitigation measures included in this program are those adopted by the OCSD's Board of Directors in its Findings of Fact, as required by CEQA.

Table 1 summarizes the mitigation measures required for each project component. Compliance with these mitigation measures will be monitored and verified at different stages in the project implementation process. **Table 2** summarizes the mitigation measures by the schedule for compliance verification.

TABLE 1
MITIGATION MEASURE BY PROJECT COMPONENT

Mitigation Measure	Project Facility / Action				
	Preferred Alternative, Treatment Scenario 2	Ocean Discharge	Treatment System	Collection System	Biosolids Management Program
5 – OCEAN DISCHARGE					
Measure 5-3a, Oil and Grease	x	x			
Measure 5-3b, Local Grease Ordinance	x				
Measure 5-5, Brine Effects Studies	x				
Measure 5-9, Pathogen Reduction	x	x			
Measure 5-11, Outfall Cleaning	x				
Measure 5-12, Outfall Siting	x				
Measure 5-13, Pathogen Reduction	x	x			
6 – TREATMENT SYSTEM					
6.1 – Land Use					
Measure 6.1-1a, Construction Hours			x		
Measure 6.1-b, Construction Notification			x		
Measure 6.1-3a, Implement Landscaping Master Plan			x		
Measure 6.1-3b, Exterior Lighting			x		
6.2 – Traffic					
Measure 6.2-1, Contractor Coordination			x		
Measure 6.2-2a, Ride Sharing Program			x		
Measure 6.2-2b, Traffic Management			x		
Measure 6.2-3, Biosolids Transport			x		
6.3 – Biology					
Measure 6.3-1, Nesting Birds			x		
6.4 – Noise					
Measure 6.4-1a, Construction Hours			x		
Measure 6.4-1b, Muffled Equipment			x		
Measure 6.4-1c, Pile-Driving Noise Reduction			x		
Measure 6.4-1d, Alternatives for Foundations			x		
Measure 6.4-1e, Construction Notification			x		
Measure 6.4-1 f, Pile Driving Noise Reduction			x		
Measure 6.4-1g, Noise Reduction			x		
Measure 6.4-1h, Exterior Lighting			x		

TABLE 1 (CONTINUED)
MITIGATION MEASURE BY PROJECT COMPONENT

Mitigation Measure	Project Facility / Action				
	Preferred Alternative, Treatment Scenario 2	Ocean Discharge	Treatment System	Collection System	Biosolids Management Program
6.4 – Noise (continued)					
Measure 6.4-2a, Noise Performance Standard			X		
Measure 6.4-2b, Community Liaison			X		
Measure 6.4-3, Noise Control			X		
6.5 – Air Quality					
Measure 6.5-1a, Equipment Emissions			X		
Measure 6.5-1b, Truck Emissions			X		
Measure 6.5-1c, Dust Control			X		
Measure 6.5-1d, Soil Binders			X		
Measure 6.5-1e, Ground Cover			X		
Measure 6.5-2a, Non-Combustion Air Emissions			X		
Measure 6.5-2b, Future Air Emission Reductions			X		
Measure 6.5-3a, Ride-Sharing Program			X		
Measure 6.5-3b, Use of CNG			X		
Measure 6.5-3c, Alternative Fuels for Trucks			X		
Measure 6.5-3d, Transportation Alternatives			X		
Measure 6.5-4a, Energy Purchases			X		
Measure 6.5-4b, Clean-Burning Engines			X		
Measure 6.5-4c, Install BACT			X		
Measure 6.5-5a, Odor Control			X		
Measure 6.5-5b, Dewatering Odor Control			X		
Measure 6.5-5c,Community Liaison			X		
Measure 6.5-5d, Odor Complaint Follow-up			X		
Measure 6.5-5e, Pre-Design Coordination			X		
Measure 6.5-5f, Community Outreach			X		
6.6 – Geology					
Measure 6.6-1a, Geotechnical Evaluations			X		
Measure 6.6-1b, Seismic Safety			X		
Measure 6.6-2a, Spill Prevention			X		
Measure 6.6-2b, Spill Containment			X		

TABLE 1 (CONTINUED)
MITIGATION MEASURE BY PROJECT COMPONENT

Mitigation Measure	Project Facility / Action				
	Preferred Alternative, Treatment Scenario 2	Ocean Discharge	Treatment System	Collection System	Biosolids Management Program
6.7 – Hydrology					
Measure 6.7-1a, Best Management Practices			X		
Measure 6.7-1b, Storm Water Management			X		
Measure 6.7-1c, Storm Drain Inspection			X		
Measure 6.7-1d, Regional Board			X		
Measure 6.7-1e, Construction Site Storm Water			X		
Measure 6.7-2a, Groundwater Dewatering			X		
Measure 6.7-2b, Dewatering Discharge			X		
Measure 6.7-3a, Chemical Spills During Floods			X		
Measure 6.7-3b, Coordination with COE			X		
Measure 6.7-3c, Hazard Awareness			X		
Measure 6.7-3d, Flood Protection			X		
6.9 – Hazardous Materials					
Measure 6.9-1a, Worker Safety Training			X		
Measure 6.9-1b, Oxygen Facility Safety			X		
Measure 6.9-1c, Risk Management			X		
6.11 – Cumulative					
Measure 6.11-1a, Construction Coordination with OCWD			X		
11-1 – Growth Inducement					
Measure 11-1a, Phased Construction			X		
Measure 11-1b, Lower Flow Projections	X	X	X	X	X
Measure 11-2, Growth Mitigation Measures			X		
7 – COLLECTION SYSTEM					
7.1 – Land Use					
Measure 7.1-1a, Construction Hours				X	
Measure 7.1-1b, Construction Notification				X	
Measure 7.1-1c, Emergency Services Access				X	
Measure 7.1-1d, Covered Trenches				X	
Measure 7.1-1e, Signage				X	
7.2 – Traffic				X	
Measure 7.2-1a, Traffic Control Plans				X	
Measure 7.2-1b, Alternative Routes					

TABLE 1 (CONTINUED)
MITIGATION MEASURE BY PROJECT COMPONENT

Mitigation Measure	Project Facility / Action				
	Preferred Alternative, Treatment Scenario 2	Ocean Discharge	Treatment System	Collection System	Biosolids Management Program
7.2 – Traffic (continued)					
Measure 7.2-1c, Encroachment Permits				x	
Measure 7.2-1d, Traffic Control Plans				x	
Measure 7.2-1e, Traffic Disruption Avoidance				x	
Measure 7.2-1f, Street Closures				x	
Measure 7.2-1g, Roadway Restoration				x	
Measure 7.2-1h, Sewer Construction Coordination				x	
Measure 7.2-1i, Emergency Services				x	
Measure 7.2-1j, OCTA Coordination				x	
Measure 7.2-1k, Railroad Encroachment Procedures				x	
Measure 7.2-1l, Trails and Bikeways				x	
Measure 7.2-1m, County of Orange Coordination				x	
Measure 7.2-1n, Trails Restoration				x	
7.3 – Biology					
Measure 7.3-1, Additional CEQA Review			x	x	
7.4 – Noise					
Measure 7.4-1a, Hours of Construction				x	
Measure 7.4-1b, Noise Control				x	
Measure 7.4-1c, Pile-Driving Noise Reduction				x	
Measure 7.4-1d, Construction Notification				x	
7.5 – Air Quality					
Measure 7.5-1a, Dust Control				x	
Measure 7.5-1b, Exhaust Emissions				x	
Measure 7.5-1c, Truck Emissions Reductions				x	
7.6 – Geology					
Measure 7.6-1a, Seismic Safety				x	
Measure 7.6-1b, Soils Survey				x	
7.7 – Hydrology					
Measure 7.7-1a, Contractor BMPs				x	

TABLE 1 (CONTINUED)
MITIGATION MEASURE BY PROJECT COMPONENT

Mitigation Measure	Project Facility / Action				
	Preferred Alternative, Treatment Scenario 2	Ocean Discharge	Treatment System	Collection System	Biosolids Management Program
7.7 – Hydrology (continued)					
Measure 7.7-1b, Storm Season Restrictions				x	
Measure 7.7-1c, County of Orange Coordination				x	
Measure 7.7-1d, Waterway Protection				x	
Measure 7.7-1e, Spill Prevention				x	
Measure 7.7-1f, Spill Containment				x	
Measure 7.7-1g, Flood Control Facilities				x	
7.8 – Public Services					
Measure 7.8-1a, Traffic Control Plan Notifications				x	
Measure 7.8-1b, Emergency Facility Access				x	
Measure 7.8-1c, Trench Openings				x	
Measure 7.8-2a, Pedestrian Safety				x	
Measure 7.8-2b, Equipment Security				x	
Measure 7.8-2c, Construction Refuse				x	
Measure 7.8-3a, Utility Search				x	
Measure 7.8-3b, Utility Conflicts				x	
Measure 7.8-3c, Protect Utilities				x	
Measure 7.8-3d, Agency Coordination				x	
Measure 7.8-3e, Identify Abandoned Oil Wells				x	
Measure 7.8-3f, Abandon Wells				x	
7.9 – Aesthetics					
Measure 7.9-1a, Construction Site Restoration				x	
Measure 7.9-1b, Construction Housekeeping				x	

TABLE 1 (CONTINUED)
MITIGATION MEASURE BY PROJECT COMPONENT

Mitigation Measure	Project Facility / Action				
	Preferred Alternative, Treatment Scenario 2	Ocean Discharge	Treatment System	Collection System	Biosolids Management Program
7.10 – Cultural Resources					
Measure 7.10-1, Archaeological Surveys				x	
Measure 7.10-2a, Archaeological Resources				x	
Measure 7.10-2b, Cultural Resources				x	
Measure 7.10-2c, Human Remains Alert				x	
7.11 – Cumulative					
Measure 7.11-1a, Coordinate Construction				x	
Measure 7.11-1b, Recycling				x	
8 – BIOSOLIDS MANAGEMENT PROGRAM					
Measure 8-2, Trucking Impact Reduction					x
Measure 8-3a, Truck Noise Reduction					x
Measure 8-3b, Biosolids Transport					x
Measure 8-5a, Biosolids Application Sites					x
Measure 8-5b, Biosolids Land Application					x

TABLE 2
TIMING OF VERIFICATION FOR MITIGATION MEASURES

Timing of Verification	Mitigation Measures
On-going	5-3a, 5-3b, 5-5, 5-9a, 5-13, 6.1-3a, 6.2-2a, 6.4-2a, 6.4-2b, 6.4-3, 6.5-2a, 6.5-2b, 6.5-3a, 6.5-3b, 6.5-3c, 6.5-3d, 6.5-4a, 6.5-4b, 6.5-4c, 6.5-5a, 6.5-5b, 6.5-5c, 6.5-5d, 6.5-5e, 6.5-5f, 6.6-2a, 6.6-2b, 6.7-1a, 6.7-1b, 6.7-1c, 6.7-1d, 6.7-1e, 6.7-3a, 6.7-3b, 6.7-3c, 6.7-3d, 6.9-1a, 6.9-1b, 6.9-1c, 11-1a, 11-1b, 11-2, 7.7-1a, 7.7-1b, 7.7-1c, 7.7-1d, 7.7-1e, 7.7-1f, 8-2, 8-3a, 8-3b, 8-5a, 8-5b
During project/engineering design	7.8-3a,7.8-3b,7.8-3d,7.10-10
Prior to approval of final design plans and specifications	5-11, 6.4-1d, 6.4-1e, 7.4-1c
Prior to approval of construction contract	6.2-2b, 6.2-3
Prior to start of construction	5-12, 6.1-1a, 6.1-1b, 6.1-3b, 6.2-1, 6.3-1, 6.4-1a, 6.4-1b, 6.4-1c, 6.4-1f, 6.4-1g, 6.4-1h, 6.5-1a, 6.5-1b, 6.5-1c, 6.5-1d, 6.5-1e, 6.6-1a, 6.6-1b, 6.11-1a, 7.1-1a, 7.1-1b, 7.1-1c, 7.1-1d, 7.1-1e, 7.2-1a, 7.2-1b, 7.2-1c, 7.2-1d, 7.2-1e, 7.2-1f, 7.2-1g, 7.2-1h, 7.2-1i, 7.2-1j, 7.2-1k, 7.2-1l, 7.2-1m, 7.2-1n, 7.3-1, 7.4-1a, 7.4-1b, 7.4-1d, 7.5-1a, 7.5-1b, 7.5-1c, 7.6-1a, 7.6-1b, 7.7-1g, 7.8-2a, 7.8-2b, 7.8-2c, 7.8-3a, 7.8-3b, 7.8-3c, 7.8-3d, 7.8-3e, 7.8-3f, 7.9-1a, 7.9-1b, 7.10-1, 7.10-2a, 7.10-2b, 7.10-2c, 7.11-1a, 7.11-1b
During construction	6.4-1a, 6.4-1b, 6.4-1c, 6.4-1f, 6.4-1g, 6.4-1h, 6.5-1a, 6.5-1b, 6.5-1c, 6.5-1d, 6.5-1e, 6.7-2a, 6.7-2b, 6.11-1a, 7.1-1a, 7.1-1b, 7.1-1c, 7.1-1d, 7.1-1e, 7.2-1a, 7.2-1b, 7.2-1c, 7.2-1d, 7.2-1e, 7.2-1f, 7.2-1g, 7.2-1h, 7.2-1i, 7.2-1j, 7.2-1k, 7.2-1l, 7.2-1m, 7.2-1n, 7.3-1, 7.4-1a, 7.4-1b, 7.5-1a, 7.8-1a, 7.8-1b, 7.8-1c, 7.8-2a, 7.8-2b, 7.8-2c, 7.8-3a, 7.8-3b, 7.8-3c, 7.8-3d, 7.8-3e, 7.8-3f, 7.9-1a, 7.9-1b, 7.10-1, 7.10-2a, 7.10-2b, 7.10-2c

SOURCE: Environmental Science Associates

The MMRP is organized in a table format, keyed to each significant impact and each adopted EIR mitigation measure. The significant impacts and mitigation measures are summarized in the tables and are coded by number to the appropriate EIR section. The column headings in the tables are defined as follows:

- **Implementation Procedure:** Where needed, this column provides additional information on how the mitigation measures will be implemented. The column is blank if no elaboration on the mitigation is necessary.

- **Monitoring and Reporting Actions:** This column contains an outline of the appropriate steps to verify compliance with the mitigation measure.

- **Monitoring Responsibility:** This column contains an assignment of responsibility for the monitoring and reporting tasks.

- **Monitoring Schedule:** The general schedule for conducting each monitoring and reporting task, identifying where appropriate both the timing and the frequency of the action. The schedule milestones utilized for this column include:

    - During project/engineering design
    - Prior to approval of final design plans and specifications
    - Prior to approval of construction contract
    - During construction
    - After construction

MITIGATION MONITORING / REPORTING PROGRAM

Marine Environment / Ocean Discharge

Impact 5-3. Oil and Grease effluent levels would comply with numerical permit limits under Scenarios 1, 2, and 5 but would potentially create observable floating particles which would be a permit violation. This impact would be mitigated through monitoring and treatment to achieve and maintain compliance.

Measure 5-3a: Oil and Grease. The District shall monitor receiving water in accordance with its current NPDES permit monitoring requirement and, if floating particulates from the discharge are observed in surface receiving water, the District shall modify its treatment process to reduce oil and grease in the effluent. Treatment modifications that may be implemented to address this issue include: increasing the level of secondary effluent in the discharge blend, and employing new and/or additional chemical processes (new polymer) to increase oil and grease removal.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Incorporate surface water observations in monthly marine monitoring program focused above ZID as well as down-current. 2. Establish methods of increasing treatment in order to be prepared to eliminate floatables if necessary.	Publish results with annual monitoring program report submitted to the RWQCB.	OCSD	Monthly, beginning when treatment level is changed.

Measure 5-3b: Local Grease Ordinance. The District shall work with its member agencies to encourage adoption of local ordinances for improved source control of oil and grease.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Board of Directors to pursue source control policy actions.	Board to adopt source control policies.	OCSD	On-going

Impact 5-5. Increased discharge of brine under any scenario but particularly under Scenarios 2, 4, and 6 with the GWR System would reduce initial dilution and increase metals concentrations. This could result in potentially significant toxicity impacts. Potentially significant.

Measure 5-5: Brine Effect Studies. Study and monitor the effect of brine and adjust treatment and/or brine addition as needed to maintain NPDES permit effluent quality compliance.

a) Conduct a pilot study of the effect of increased brine discharge to OCSD effluent on effluent quality to demonstrate NPDES permit compliance. Prior to start-up of full operation of the GWR System Project, OCSD will test effluent quality with the addition of the GWR System project brine concentrate in accordance with the acute and chronic toxicity testing procedures required in the District's NPDES permit. This will allow the District to confirm the potential compliance with the NPDES permit.

b) During GWR System operation, OCSD will continue its effluent quality testing and ocean monitoring in compliance with its NPDES permit. If this testing or monitoring indicates the occurrence of or potential for non-compliance with effluent toxicity standards, the District will implement measures to achieve and maintain NPDES compliance, including:
   - brine dilution
   - brine treatment
   - toxicity identification evaluation and appropriate source control measures

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Initiate contract to study brine toxicity. 2. Based on study results, identify further actions.	Include status of contract and study results in Annual Operations And Maintenance Report.	OCSD and OCWD	At adoption of findings.

Impact 5-9: Effluent discharge to the 78-inch outfall at a rate of once every three years would result in significant impacts to levels of pathogens in the nearshore waters used for water-contact activities or where shellfish are harvested.

Measure 5-9a: **Pathogen Reduction.** Pathogen reduction in the wet weather discharge would partially mitigate the impact of wet weather discharge to the nearshore area by reducing the pathogen levels and thereby reducing the health risk. Disinfection could reduce pathogen levels but it is not recommended by the RWQCB based on cost and the potential for residual chlorine in the discharge to have an adverse impact to marine organisms. Alternative methods of pathogen removal appropriate for wet weather flow treatment are under development and include filtration processes. The District will continue to evaluate new technologies for pathogen reduction and will implement those that prove to be feasible, effective, and cost-effective. Even with some level of pathogen reduction, beach closure would still probably be required, thus the impact to beach use would remain significant and unavoidable during these infrequent events.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Continue research of pathogen reduction technologies, in particular, micro-filtration.	Include status and results of research in Annual Operations And Maintenance Report.	OCSD	On-going.

Impact 5-11: Removal of accumulated sediments in the existing 120-inch outfall, if needed, would move sediments into the marine environment, which could result in short-term water quality and sediment impacts affecting marine organisms.

Measure 5-11: Outfall Cleaning. If necessary, the District will develop plans to clean out the outfall using appropriate methods approved by the RWQCB to protect water quality in accordance with regulations. The plan will include methods to contain floatables and disperse the sediments so that impacts to benthic communities and water quality are minimized.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Submit clean-out methods to RWQCB prior to implementation.	Include status and results of methods in Annual Operations And Maintenance Report.	OCSD	Prior to clean-out

Impact 5-12. Laying pipeline for any new outfall would result in the permanent loss of hundreds of thousands of square feet of soft-bottom, benthic habitat. Adjacent communities would be temporarily disrupted by increased sedimentation. Disturbance of bottom sediment may result in the short-term release of contaminants into the water column. Potentially significant but can be mitigated.

Measure 5-12: **Outfall Siting.** The District would conduct additional detailed, site-specific studies for the siting of a new second 120-inch ocean outfall. These studies would clarify the extent of marine resources that would be affected by construction and identified appropriate mitigation measures to minimize the area of disturbance.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Initiate feasibility and design studies prior to construction. 2. Prepare appropriate CEQA documentation of proposed project. 3. Implement mitigation measures identified in subsequent CEQA documentation.	Include status and methods in Annual Operations And Maintenance Report.	OCSD	Prior to construction

Impact 5-13: Use of the 78-inch outfall for peak wet weather discharges would contribute to significant cumulative pollutant loads (particularly pathogens) to the nearshore environment during wet weather events in combination with non-point source pollution. Significant.

Measure 5-13: Pathogen Reduction. To mitigate the cumulative contribution from use of the 78-inch outfall, the District will implement Mitigation Measure 5-9, above to provide additional pathogen reduction as allowed and/or required by the RWQCB.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Continue research of pathogen reduction technologies, in particular, micro-filtration.	Include status and results of methods in Annual Operations And Maintenance Report.	OCSD	On going

<u>Treatment Plant</u>

<u>Land Use</u>

Impact 6.1-1. Expansion of the OCSD treatment facilities, as proposed under Scenarios 2 and 4, would require the construction of additional facilities at Reclamation Plant No. 1 and at Treatment Plant No. 2. Project construction would result in short-term disturbance of adjacent land uses. Less than Significant with Mitigation Measures.

Measure 6.1-1a: Construction Hours. The District's standard specifications provide construction hours of work between 7:00 AM and 5:30 PM, except for emergency or special circumstances requiring that work be done during low-flow periods.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include compliance with local noise and construction ordinances in construction specifications. 2. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 6.1-1b: Construction Notification. The District shall post informational signs outside plant when major projects are being constructed.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Post notices near job site outside plant property.	Maintain record of distribution for administrative record.	OCSD	Prior to construction

Impact 6.1-3. Expansion and operation of the proposed facilities for both Scenarios 2 and 4 could adversely alter existing visual character of the site with installation of tall structures and the removal of trees. In additional project implementation could introduce new sources of light and glare. Less than Significant with Mitigation Measures.

Measure 6.1-3a: Implement Landscaping Master Plan. The District will implement the Urban Design Element of the Strategic Plan in order to improve the visual appearance of the site. Recommendations from the Landscape Master Plans (of the Urban Design Element) include the development of buffer zones, planting of trees at the perimeter of the plants along sensitive visual corridors (e.g. Santa Ana bikeway), and maintaining and enhancing the appearance of existing buffer zones.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Comply with Urban Design Plan.	Maintain Urban Design plan for administrative record.	OCSD	On going

Measure 6.1-3b: Exterior Lighting. The District will install permanent exterior lighting on new facilities to point away from neighboring residential areas as possible to minimize visible light sources.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Comply with Urban Design Plan. 2. Conduct nighttime survey after new construction to confirm less than significant impact.	Maintain Urban Design Plan and record of nighttime inspection for administrative record.	OCSD	Prior to and after construction

Traffic

Impact 6.2-1: Periods of peak construction will increase traffic along local access streets. Less than Significant with Mitigation Measures.

Measure 6.2-1: Contractor Coordination. For each major project or construction period, the District would complete a detailed construction schedule and notify the Cities of Fountain Valley and Huntington Beach of construction. Construction vehicles shall be run on a schedule to minimize truck traffic on arterial highways.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Require traffic control plan for construction projects. 2. Notify affected cities of construction schedule. 3. Provide construction oversight.	Ensure that construction vehicle traffic complies with traffic control plan. Provide record of construction oversight.	OCSD	Prior to and during construction

Impact 6.2-2: Additional traffic would be generated from the ongoing operations of the facilities at Reclamation Plant No. 1 and Treatment Plant No. 2. Sources of new traffic include chemical truck deliveries, trips by new District's employees, and increased biosolids hauling truck trips. Less than Significant with Mitigation Measures.

Measure 6.2-2a: Ride-Sharing Program. The Districts will continue the existing ride-sharing program to encourage employees to join a carpool and use transit.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
	Include status of rideshare program in Operation and Maintenance Annual Report.	OCSD	Annually

Measure 6.2-2b: Traffic Management Chemical delivery trucks and screenings and grit and biosolids disposal trucks will avoid operating during peak traffic hours when possible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. The District will develop a preferred truck-hauling schedule avoiding peak traffic hours. 2. Thereafter the District will attempt to comply with the schedule whenever possible. 3. The District will incorporate this preferred schedule when renewing contracts with haulers and chemical deliverers.	Prepare a record of hauling schedule.	OCSD	At hauler's contract renewal

Impact 6.2-3: Increased biosolids and chemical truck trips would impact regional transportation systems including freeways, especially I-405 and I-5. Less than Significant with Mitigation Measures.

Measure 6.2-3: Biosolids Transport. The District shall arrange for the transport of biosolids by trucks during off-peak travel hours when possible to reduce truck travel times and minimize impacts to the regional transportation system.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. The District will develop a preferred truck-hauling schedule avoiding peak traffic hours. 2. Thereafter the District will attempt to comply with the schedule whenever possible. 3. The District will incorporate this preferred schedule when renewing contracts with haulers.	Prepare a record of hauling schedule.	OCSD	At hauler's contract renewal

Impact 6.3-1: Removal of trees on the treatment plant sites during construction could impact nesting birds. This impact is considered less than significant with mitigation.

Measure 6.3-1: Nesting Birds. Prior to the removal of healthy trees on site, a biologist knowledgeable of birds will survey the trees to determine if active nests are present. If nests of sensitive species are present, tree removal will be scheduled to avoid the nesting season.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include tree surveys in construction specifications for on-site construction projects.	Maintain record of biologist survey recommendations and record of District adherence with recommendations.	OCSD	Prior to and during construction

Noise

Impact 6.4-1: Construction activities related to the proposed treatment plant improvements at Reclamation Plant No. 1 and Treatment Plant No. 2 would intermittently and temporarily generate noise levels above existing ambient levels in the project vicinity. Significant and Unavoidable.

Measure 6.4-1a: Construction Hours. The District's standard specifications provide construction hours of work between 7:00 AM and 5:30 PM, except for emergency or special circumstances requiring that work be done during low-flow periods.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
2. Include compliance with local noise and construction ordinances in construction specifications. 3. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 6.4-1b: Muffled Equipment. All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engine driven equipment shall be fitted with intake and exhaust mufflers that are in good condition.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include compliance with local noise and construction ordinances in construction specifications. 2. Include noise reduction procedures in construction specifications 3. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 6.4-1c: Pile-Driving Noise Reduction. OCSD shall consult with an acoustical engineer to evaluate other alternatives for mitigating impacts from extensive pile driving activities when necessary.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Initiate contract with qualified engineer to reduce noise impacts. 2. Incorporate noise reduction solutions. 3. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 6.4-1d: Alternatives for Foundations. OCSD will evaluate the use of alternative foundation designs to avoid a need for pilings where cost-effective and technically feasible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preference to avoid pilings where possible in project design specifications.	Maintain record of design specifications.	OCSD	Prior to project design

Measure 6.4-1e: Construction Notification. Nearby sensitive receptors affected by construction shall be notified concerning the project timing and construction schedule, and shall be provided with a phone number to call with questions or complaints.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prepare and distribute notifications.	Maintain record of notification distribution list.	OCSD	Prior to construction

Measure 6.4-1f: Pile Driving Noise Reduction. Noise-reduction measures will be implemented such as acoustic insulation or by other means during the construction period at Reclamation Plant No. 1 to reduce a nuisance condition to the closest residences when pile driving is taking place.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include noise reduction procedures in construction specifications 2. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 6.4-1g: Noise Reduction. The District will require construction contractors to include methods to reduce noise and elevated activity impacts to nearby wildlife when working on the southern and southeastern border of Treatment Plant No. 2.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include noise reduction procedures in construction specifications 2. Conduct wildlife sensitivity training during morning tail-gate meetings. 3. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 6.4-1h: Exterior Lighting. The District will install permanent exterior lighting on new facilities to point away from the wetland areas adjacent to Plant No. 2 as possible to minimize light sources permanently shining on the adjacent habitats.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include lighting design in construction specifications.	Conduct periodic evening surveys to observe lights.	OCSD	Prior to and during construction

Impact 6.4-2: Operation of proposed new equipment at Reclamation Plant No. 1 and Treatment Plant No. 2 would generate noise levels above existing ambient levels in the project vicinity. Less than Significant with Mitigation Measures.

Measure 6.4-2a: Noise Performance Standard. OCSD shall establish a performance noise standard for operational noise at Reclamation Plant No. 1 and Treatment Plant No. 2. The performance standard shall apply to the property line of each plant and shall prohibit hourly average noise levels in excess of 55 dBA between the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA between the hours of 10:00 p.m. and 7:00 a.m., as required by the Fountain Valley and Huntington Beach Noise Ordinances. Available mitigation to achieve the performance standard consists of locating noise sources away from sensitive receptors, installation of acoustical enclosures around noise sources, installation of critical application silencers and sequential mufflers for exhaust noise, installation of louvered vents, directing vent systems away from nearby residences, and constructing soundwalls at the property lines.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include compliance with local noise and construction ordinances in standard operational procedures. 2. Implement noise reduction procedures when possible. 3. Consider operational noise when locating new equipment.	Maintain record of noise complaints for administrative record.	OCSD	On-going

Measure 6.4-2b: Community Liaison. The District will assign a community liaison for odor and noise complaints.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Meet with community groups. 2. Develop tasks and assignments for liaison. 3. Periodically review effectiveness of community liaison program.	Maintain record of meetings with community groups.	OCSD	On-going

Impact 6.4-3: Workers at Reclamation Plant No. 1 and Treatment Plant No. 2 may be exposed to excess noise levels from the operation of new facilities. Less than Significant with Mitigation Measures.

Measure 6.4-3: Noise Control. Noise control measures shall be incorporated into the design of the facility. Once the facility is operational, a certified industrial hygienist or other qualified individual shall measure the noise levels to which workers are exposed. If the OSHA 8-hour time weighted average exposure for any worker exceed the 85 dBA threshold, a hearing conservation program must be initiated and appropriate administrative and engineering controls must be put in place to protect workers.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include noise control measures in design of new equipment. 2. Conduct noise assessments on site and on the perimeter to quantify impacts to workers and neighborhood to respond to complaints.	Include noise assessment results in annual Operations and Maintenance Report.	OCSD	Annually

Air Quality

Impact 6.5-1: Project development under any of the six project scenarios would generate short-term emissions of air pollutants, including dust and criteria pollutants, from demolition, construction and/or restoration activities. Significant and Unavoidable.

Measure 6.5-1a: Equipment Emissions. General contractors shall maintain equipment engines in proper tune and operate construction equipment so as to minimize exhaust emissions. Such equipment shall not be operated during second stage smog alerts.

Measure 6.5-1b: Truck Emissions. During construction, trucks and vehicles in loading or unloading queues shall be kept with their engines off, when not in use, to reduce vehicle emissions. Construction activities shall be phased and scheduled to avoid emissions peaks, and discontinued during second-stage smog alerts.

Measure 6.5-1c: Dust Control. General contractors should use reasonable and typical watering techniques to reduce fugitive dust emissions. All unpaved demolition and construction areas shall be wetted as necessary during excavation and construction, and temporary dust covers shall be used to reduce dust emissions and meet SCAQMD District Rule 403.

Measure 6.5-1d: Soil Binders. Soil binders shall be spread on site, unpaved roads, and parking areas when needed.

Measure 6.5-1e: Ground Cover. Ground cover shall be re-established following completion of construction activities through seeding and watering if needed.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include air emissions restrictions and standard operating procedures for construction work in contract specifications. 2. Include dust reduction measures listed in mitigation measures in contract specifications. 3. Conduct oversight of construction activities to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction.

Impact 6.5-2: Emissions at both treatment plants under any of the project scenarios would continue to result from stationary sources. Increasingly restrictive air quality regulations are anticipated in the near future to comply with federal air quality standards, making air emissions permits for new and modified equipment more difficult to obtain. This impact would be less than significant with mitigation measures.

Measure 6.5-2a: Non-Combustion Air Emissions. The District will research ways of reducing NO_x and air toxics emissions from stationary sources, including non-combustion sources to meet future emission reductions that will be imposed by the SCAQMD.

Measure 6.5-2b: Future Air Emission Reductions. The District will comply with existing and future air quality regulations including SCAQMD Rules and permit requirements. As air quality regulations become more restrictive in the South Coast Air Basin coinciding with increased operational demand, the District will be required to reduce emissions through process modifications or by implementing new control technologies.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Initiate research on innovative control technology. 2. Provide SCAQMD with mandated emissions reports to verify compliance.	Maintain record of air emission data. Include status and results of air emissions research in annual Operations and Maintenance Report.	OCSD	Annually.

Impact 6.5-3: Emissions at both treatment plants under any of the project scenarios would continue to result from mobile sources. Mobile sources are projected to exceed the SCAQMD nitrous oxides significance threshold of 55 lbs/day. This would result in a significant impact to air quality.

Measure 6.5-3a: Ride-Sharing Program. The District will maintain its ride-share programs to reduce commuter traffic and air quality impacts.

Measure 6.5-3b: Use of CNG. The District will complete the implementation of compressed natural gas (CNG) stations and encourage contractors to employ CNG-powered engines on residual solids haul trucks through contract incentives where possible.

Measure 6.5-3c: Alternative Fuels for Trucks. Alternative fuels shall be considered for biosolids haul trucks including low NO_x emitters.

Measure 6.5-3d: Transportation Alternatives. The District shall initiate research on alternative methods of transporting biosolids to land application sites including electric vehicles and rail.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Initiate research on innovative control technology, alternative fuels, and biosolids hauling methods. 2. Provide SCAQMD with mandated emissions reports to verify compliance. 3. Include in contracts and requests for qualifications from haulers that CNG is available and encouraged.	Include status of rideshare program in Operation and Maintenance Annual Report. Include status of research in alternative fuels and biosolids haul methods in Operation and Maintenance Annual Report.	OCSD	On going

Impact 6.5-4: Modifying the current CGS or adding new power-generating equipment would require SCAQMD permit modifications. Energy requirements greater than the permitted CGS capacity of 18 MW would require permit modifications. Less Than Significant impact with Mitigation.

Measure 6.5-4a: Energy Purchases. The District will purchase energy from off-site sources if air emissions permit modifications are denied.

Measure 6.5-4b: Clean-Burning Engines. The District will continue to research clean-burning engines for the CGS, in an effort to increase power output while reducing criteria and toxic pollutants.

Measure 6.5-4c: Install BACT. The District will install Best Available Control Technology if necessary to comply with SCAQMD Rules.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Initiate research on innovative control technology. 2. Provide SCAQMD with mandated emissions reports to verify compliance.	Maintain record of air emission data. Include status and results of air emissions research in annual Operations and Maintenance Report.	OCSD	Annually.

Impact 6.5-5: The project under each of the treatment scenarios could generate objectionable odors in the project vicinity and in other areas located downwind from the treatment facilities. Less Than Significant after Mitigation Measures.

Measure 6.5-5a: Odor Control. The District will evaluate the need for odor control equipment for future facilities to reduce fugitive foul odors and include odor control when necessary. The District will also periodically review air emissions from existing solids handling to determine if odor control is necessary.

Measure 6.5-5b: Dewatering Odor Control. When dewatering is required during excavation, the District shall provide odor control systems to reduce construction odor impacts when necessary.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Maintain odor control technology. 2. Provide odor control on new facilities as needed.	Include odor complaints in annual Operations and Maintenance Report.	OCSD	Annually.

Measure 6.5-5c: Community Liaison. The District will assign a community liaison for odor and noise complaints.

Measure 6.5-5d: Odor Complaint Follow-Up The District will follow-up with copies of odor complaint analysis to complainant and/or neighborhood groups including the Southeast Huntington Beach Neighborhood Association representative.

Measure 6.5-5e: Pre-Design Coordination. The District will maintain pre-design coordination on future projects at its treatment plants with interested parties including cities and neighborhood associations.

Measure 6.5-5f: Community Outreach. The District will establish regular community outreach meetings with neighbors.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Meet with community groups to choose community liaison and periodic meeting schedule. 2. Develop tasks and assignments for liaison. 3. Periodically review effectiveness of community liaison program. 4. Provide odor and noise complaint information to community groups.	Maintain record of meetings with community groups.	OCSD	On-going

Geology

Impact 6.6-1: Project facilities, under any of the treatment scenarios, would be located in areas susceptible to primary and secondary seismic hazards (groundshaking, liquefaction, settlement). Damage to facilities could result in the event of a major earthquake. Less than Significant with Mitigation Measures.

Measure 6.6-1a: Geotechnical Evaluations. During the project design phase for all facilities, the District will perform design-level geotechnical evaluations. The geotechnical evaluations will include subsurface exploration and review of seismic design criteria to ensure that design of the facilities meet seismic safety requirements of the Uniform Building Code.

Site-specific testing for soils susceptible to liquefaction would be conducted. If testing results indicates that conditions are present that could result in significant liquefaction and damage to project facilities, appropriate feasible measures will be developed and incorporated into the project design. The performance standard to be used in the geotechnical evaluations for mitigation liquefaction hazards will be minimization of the hazards. Measures to minimize significant liquefaction hazards could include the following:

- Densification or dewatering of surface or subsurface soils.
- Construction of pile or pier foundations to support pipelines and/or buildings.
- Removal of material that could undergo liquefaction in the event of an earthquake and replacement with stable material.

Recommendations of the geotechnical report will be incorporated into the design and construction of proposed facilities.

Measure 6.6-1b: Seismic Safety. The District will design and construct new facilities in accordance with District seismic standards and/or meet or exceed seismic, design standards in the most recent edition of the California Building Code.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include design-level geotechnical evaluations in specifications prior to construction. 2. Include in specifications compliance with California Building Code	Maintain record of specifications for administrative record.	OCSD	Prior to construction

Impact 6.6-2: Groundshaking could cause spills of raw sewage, causing a significant impact to public health. Less than Significant impact with Mitigation Measures.

Measure 6.6-2a: Spill Prevention. The District will implement the Spill Prevention Containment and Countermeasures Plan (SPCC).

Measure 6.6-2b: Spill Containment. OCSD chemical facilities will be designed with secondary containment, such as berms, to contain and divert toxic chemicals from wastewater flows and isolate damaged facilities to reduce contamination risks.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement and update SPCC plan.	Maintain record of SPCC for administrative record.	OCSD	As needed.

Hydrology

Impact 6.7-1: Construction of any of the treatment system scenarios could result in an increase in erosion and siltation into surface waters. Construction could also result in chemical spills (e.g., fuels, oils, or grease) to stormwater, and increase turbidity and decrease water quality in waters of the U.S. Less than Significant with Mitigation Measures.

Measure 6.7-1a: Best Management Practices. The District will implement Best Management Practices (BMPs) as outlined in the SWMP.

Measure 6.7-1b: Storm Water Management. The District will train construction and operation employees in storm water pollution prevention practices. Individual contractors performing construction at each treatment facility shall be required to comply with provisions of the SWMP.

Measure 6.7-1c: Storm Drain Inspection. The District will inspect and maintain all on-site storm water drains and catch basins on plant property regularly.

Measure 6.7-1d: Regional Board. The District will apply the SARWQCB's recommended BMPs during construction and operation as specified in the SWMP.

Measure 6.7-1e: Construction Site Storm Water. For construction involving disturbance greater than five acres of land, the District will incorporate into contract specifications the following requirements:

> The District will comply with the RWQCB requirements of the NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. The District will require that the contractor implement control measures that are consistent with the General Permit and with the recommendations and policies of the RWQCB. This would include submitting a Notice of Intent and site map to the RWQCB, developing a Storm Water Pollution Prevention Plan, and implementing site-specific best management practices to prevent sedimentation to surface waters.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement BMPs. 2. Implement SWMP. 3. Periodically update SWMP. 4. Implement mitigation measures listed above. 5. Periodically inspect construction sites.	Maintain compliance with SWMP for administrative record. Maintain record of site inspections.	OCSD	As needed.

Impact 6.7-2: Pile driving and excavation activities at Reclamation Plant No. 1 and Treatment Plant No. 2 may encounter groundwater, and local dewatering may be required. Less than Significant with Mitigation Measures.

Measure 6.7-2a: Groundwater Dewatering. Construction contractors will comply with the District's Dewatering Specifications.

Measure 6.7-2b: Dewatering Discharge. Water from dewatering operations will be disposed of in a suitable manner in conformance with the NPDES permit, as approved by the RWQCB.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Update dewatering procedures periodically. 2. Periodically inspect construction sites.	Maintain record of dewatering procedures for administrative record Maintain record of site inspections.	OCSD	During construction.

Impact 6.7-3: Reclamation Plant No 1. and Treatment Plant No. 2 are located in the 100-year floodplain of the Santa Ana River. New facilities proposed under any of the scenarios considered would expose structures and people to a 100-year flood event and/or effects of a tsunami. Less than Significant With Mitigation Measures.

Measure 6.7-3a: Chemical Spills During Floods. The District shall construct and maintain secondary containment berms to protect against release of toxic chemicals in an event of a spill from flooding.

Measure 6.7-3b: Coordination with COE. The District shall coordinate with the Army Corp of Engineers to ensure levees located adjacent to Reclamation Plant No. 1 and Treatment Plant No. 2 continue to provide adequate protection for a 100-year flood event.

Measure 6.7-3c: Hazard Awareness Notification. The District shall adhere to the Emergency Contingency Plan and the Flood Protection Plan to minimize the affects of flooding and tsunamis to Reclamation Plant No.1 and Treatment Plant No. 2. These measures shall include hazard awareness notifications to neighborhoods downstream from Reclamation Plant No. 1.

Measure 6.7-3d: Flood Protection. The District shall adhere to Orange County's flood protection program as implemented by the Orange County Flood Control District.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Comply with programs listed in mitigation measures.	Maintain record of communication with U.S. Army Corps of Engineers and County Flood Control District for administrative record.	OCSD	On going.

Hazardous Materials

Impact 6.9-1: Increasing quantities of hazardous materials stored on site could impact public health in the event of a catastrophic spill or explosion. Increasing liquid oxygen storage could increase the hazard. Less than Significant with Mitigation Measures.

Measure 6.9-1a: Worker Safety Training. Worker safety training shall emphasize hazards of liquid oxygen and stored methane. Routine safety measures including hazard communication shall be adopted and strictly enforced in hazardous areas. Hazard training and communication shall include laboratory operations and routine process chemical use.

Measure 6.9-1b: Oxygen Facility Safety. If additional liquid oxygen storage facilities are installed, the District shall research explosion and fire potential to determine explosion arc perimeters. If neighboring land uses are not adequately distant, the District shall reconfigure the oxygen storage facility to remove explosion hazards on neighboring land uses.

Measure 6.9-1c: Risk Management Program. Liquid oxygen operations shall be included in the District's Risk Management Program.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Maintain and periodically update Risk Management Program. 2. Maintain and periodically update worker safety program. 3. Implement mitigation measures listed above. 4. Conduct monthly and annual safety inspections.	Maintain training records, medical records, notification records, and safety record for administrative record.	OCSD	On going.

Cumulative

Impact 6.11-1: Cumulative impacts to air quality and noise could occur as a result of treatment facility construction activities coupled with the construction of the GWR System treatment facilities. Significant unavoidable.

Measure 6.11-1a: Construction Coordination with OCWD. Coordinate construction activities with OCWD to minimize PM_{10} emissions, construction vehicle exhaust, and cumulative noise impacts during excavation and pile driving activities.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include air emissions restrictions and standard operating procedures for construction work in contract specifications. 2. Conduct oversight of construction activities to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction.

Growth-Inducement

Impact 11-1: By removing wastewater treatment capacity as one barrier to growth, the District would have indirect, growth-inducement potential to support planned development within the Service Area that is consistent with and within the levels of development approved in the adopted General Plans. Less the Significant with Mitigation Measures.

Measure 11-1a: Phased Construction. The project's phased design helps minimize growth inducement potential. The Strategic Plan allows for the incremental expansion of treatment capacity, allowing Service Area cities to re-evaluate and revise long-term needs before completing full "build out."

Measure 11-1b: Lower Flow Projections. The District revises its Strategic Plan periodically allowing the treatment facilities to best meet the actual needs of the Service Area. The implementation of this Strategic Plan was based on a projected decrease influent flow and serves to decrease anticipated capacity requirements. Future revisions every five years will assist the District in maintaining service for reasonably foreseeable planned growth levels.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Phase construction of new facilities as outlined in the Strategic Plan. 2. Review and incorporate growth predictions every five years. 3. Update Strategic Plan periodically.	Begin update Strategic Plan in 2004.	OCSD	Begin in 2004.

Impact 11-2: The OCSD Strategic Plan would accommodate planed growth in the Service Area. Implementation of planned growth would result in secondary environmental effects. The effects of planned growth have been identified and addressed in the EIRs on Regional Plans, General Plans for Service Area cities, and associated Specific Plans. Some of the secondary effects of growth which have been identified as significant and unavoidable include air quality and traffic congestion.

Measure 11-2: Growth Mitigation Measures. OCSD does not have the authority to make land use and development decisions, nor does it have the authority or jurisdiction to address many of the identified significant, secondary effects of planned growth. Authority to implement such measures lies with the County and cities which enforce local, state, and federal regulations through the permit process. Other agencies with authority to require mitigation or with responsibility to implement measures to mitigate the effects of planned growth include regional and state agencies such as the South Coast Air Quality management District (SCAQMD), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG), California Department of Health Services (DHS), California Department of Transportation (Caltrans), and federal agencies including U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), and the U.S. Corps of Engineers (USACE).

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Phase construction of new facilities as outlined in the Strategic Plan. 2. Review and incorporate growth predictions every five years. 3. Update Strategic Plan periodically.	Begin update Strategic Plan in 2004.	OCSD	Begin in 2004.

<u>Collection System</u>

<u>Land Use</u>

Impact 7.1-1: Construction activities associated with the trunk sewer systems would involve the rehabilitation and replacement of existing pipelines. Construction activities would result in short-term disturbance of adjacent land uses. Less than Significant with Mitigation Measures.

Measure 7.1-1a: Construction Hours. The District will comply with local ordinances and restrict construction activities to daylight hours or as specified in encroachment permits.

Measure 7.1-1b: Construction Notification. The District shall post notices or provide notification of construction activities to adjacent property owners (including homeowners and adjacent businesses) at least 72 hours in advance of construction and provide a contact and phone number of a District staff person to be contacted regarding questions or concerns about construction activity.

Measure 7.1-1c: Emergency Services Access. The District shall coordinate with officials of adjacent fire station, the Fountain Valley Regional Hospital as well as other hospital to ensure that 24-hour emergency access is available.

Measure 7.1-1d: Covered Trenches. To minimize disruption of access to driveways to adjacent land uses, the District or its contractor(s) shall maintain steel-trench plates at the construction sites to restore access across open trenches. Construction trenches in streets will not be left open after work hours.

Measure 7.1-1e: Signage. The District shall provide temporary signage indicating that businesses are open.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include compliance with local construction ordinances in construction specifications including site safety during non construction hours. 2. Include the preparation and distribution of notifications prior to construction activities in contract specifications. 3. Include 24-hour emergency access in contract specifications. 4. Maintain record of communication with local authorities. 5. Include signage for impacted businesses in contract specifications. 6. Conduct periodic construction site inspections.	Maintain record of signage, business and fire department notifications, inspections, and construction schedule.	OCSD	Prior to and during construction

Traffic

Impact 7.2-1: Construction activities during trenching in city streets will impact traffic circulation during construction period. Less than Significant with Mitigation Measures.

Measure 7.2-1a: Traffic Control Plans. Traffic control plans will be prepared by a qualified professional engineer, prior to the construction phase of each sewer line project as implementation proceeds.

Measure 7.2-1b: Alternative Routes. Traffic control plans will consider the ability of alternative routes to carry additional traffic and identify the least disruptive hours of construction site truck access routes, and the type and location of warning signs, lights and other traffic control devices. Consideration will be given to maintaining access to commercial parking lots, private driveways and sidewalks, bikeways and equestrian trails, to the greatest extent feasible.

Measure 7.2-1c: Encroachment Permits. Encroachment permits for all work within public rights-of-way will be obtained from each involved agency prior to commencement of any construction. Agencies involved include Caltrans, the Orange County Planning and Development Services (PDS) (Development Services Section) and the various cities where work will occur. The District will comply with traffic control requirements, as identified by Caltrans and the affected local jurisdictions.

Measure 7.2-1d: Traffic Control Plans. Traffic control plans will comply with the Work Area Traffic Control Handbook and/or the Manual of Traffic Controls as determined by each affected local agency, to minimize any traffic and pedestrian hazards that exist during project construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Contract with qualified traffic control engineer to prepare Control Plan for each construction project. 2. Ensure that issues highlighted in mitigation measures are included in Control Plan. 3. Include within contract specifications the acquisition of all necessary encroachment permits. 4. Review list of required permits and verify adequacy prior to construction. 5. Conduct periodic site inspections including post-completion inspection.	Maintain traffic control plan, permits, and construction schedule and methods for administrative record. Maintain record of site inspections including post-construction inspections.	OCSD	Prior to and during construction

Measure 7.2-1e: Traffic Disruption Avoidance. The construction technique for the implementation of the proposed sewer lines, such as tunneling, cut and cover with partial street closure, or cut and cover with full street closure, shall include consideration of the ability of the roadway system, both the street in question and alternate routes, to carry existing traffic volumes during project construction. If necessary, adjacent parallel streets will be selected as alternate alignments for the proposed sewer improvements. As required by local jurisdictions, trunk sewers will be jacked under select major intersections, to avoid traffic disruption and congestion.

Measure 7.2-1f: Street Closure. Public streets will generally be kept operational during construction, particularly in the morning and evening peak hours of traffic. Lane closures will be minimized during peak traffic hours.

Measure 7.2-1g: Roadway Restoration. Public roadways will be restored to a condition mutually agreed to between the District and local jurisdictions prior to construction.

Measure 7.2-1h: Sewer Construction Coordination. The Districts will attempt to schedule construction of relief facilities to occur jointly with other public works projects already planned in the affected locations, through careful coordination with all local agencies involved.

Measure 7.2-1i: Emergency Services. Emergency service purveyors will be contacted and consulted to preclude the creation of unnecessary traffic bottlenecks that will seriously impede response times. Additionally, measures to provide an adequate level of access to private properties shall be maintained to allow delivery of emergency services.

Measure 7.2-1j: OCTA Coordination. OCTA will be contacted when construction affects roadways that are part of the OCTA bus network.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include adherence to the Traffic Control Plan in contract specifications 2. Contact local authorities listed in mitigation measures and maintain record of communication. 3. Conduct periodic site inspections including post-completion inspection.	Maintain traffic control plan, permits, and construction schedule and methods for administrative record. Maintain record of site inspections including post-construction inspections.	OCSD	Prior to and during construction

Measure 7.2-1k: Railroad Encroachment Procedures. This measure is applicable to the following collection systems improvements: Lower Santa Ana River Interceptor Improvements, Newhope-Placentia Trunk Replacement, and Gisler-Redhill System Improvements – B. To reduce impacts to railroad rights-of-way, the District is required to follow the Right-of-Way Encroachment Approval Procedures – SCRRA Form No. 36. The procedures for temporary encroachment calls for 1) the submittal of a written statement on the reason and location of the encroachment; 2) a completed and executed SCRRA Form No. 6, Right-of-Entry Agreement; 3) plan check, inspection, and flagging fees; and 4) insurance certificates as described in the Right-of-Entry Agreement. Per SCRRA Form No. 6, the District must comply with the rules and regulations of this agreement at all times when working on SCRRA property, including those outlined in the “Rules and Requirements for Construction at Railway Property, SCRRA Form No. 37” and General Safety Regulations for Construction / Maintenance Activity on Railway Property”.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include application for SCRRA encroachment permit in contract specifications 2. Contact SCRRA prior to project design.	Maintain encroachment permit application and permit for administrative record.	OCSD and SCRRA	Prior to and during construction

Measure 7.2-1l: Trails and Bikeways. Short term construction impacts and closures to locally designated trails and bikeways, as found in the County's Master Plan of Regional Riding and Hiking Trails (RRHT) and Commuter Bikeways Strategic Plan (CBSP), shall be mitigated with detours, signage, flagmen and reconstruction as appropriate. Long term impacts such as permanent trail link closures should be mitigated with provisions for new rights-of-way for trails and/or bikeways and reconstruction.

Measure 7.2-1m: County of Orange Coordination. Any construction plans that could potentially impact regional riding and hiking trails or Class I bikeways shall be submitted to the County's Division of Harbors, Beaches and Parks/Trails Planning and Implementation for review and approval prior to project construction activities.

Measure 7.2-1n: Trails Restoration. Regional Riding and Hiking Trails and Class I Bikeways impacted by construction activities shall be restored to their original condition after project construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include adherence with County of Orange RRHT and CBSP in contract specifications. 2. Contact County of Orange prior to designing detours.	Maintain construction design for administrative record.	OCSD and SCRRA	Prior to and during construction

Biology

Impact 7.3-1: Based on conceptual alignment information for OCSD's proposed collection system projects, construction of the collection pipeline system improvements would occur in previously disturbed, developed areas, primarily public streets. No impact to biological resources would occur if projects occur within paved areas. However, if final project alignments are revised to include an undeveloped area or open space, potential impacts to biological resource could occur; in these cases OCSD would conduct additional CEQA as needed to clarify and address impacts to biological resources.

Measure 7.3-1: Additional CEQA Review. If in the future, as OCSD develops the design of each specific collection system project for implementation, a project alignment includes unpaved, undeveloped park or open space area, OCSD will conduct additional CEQA review as needed to clarify and address potential impacts to biological resources.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Biological surveys will be conducted for construction activities in previously undisturbed locations.	Maintain record of previous condition for each construction site for administrative record.	OCSD	Prior to and during construction

Noise

Impact 7.4-1: Construction activities related to the proposed collection system improvements would intermittently and temporarily generate noise levels above existing ambient levels in the project vicinity. Less than Significant with Mitigation Measures.

Measure 7.4-1a: Hours of Construction. Construction activities shall be limited to between the hours of 7:30 a.m. and 5:30 p.m. and as necessary to comply with local ordinances. Any nighttime or weekend construction activities would be subject to local permitting.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include compliance with local noise and construction ordinances in construction specifications. 2. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 7.4-1b: Noise Control. All equipment used during construction shall be muffled and maintained in good operating condition. All internal combustion engine driven equipment shall be fitted with intake and exhaust mufflers that are in good condition.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include compliance with local noise and construction ordinances in construction specifications. 2. Include noise reduction procedures in construction specifications 3. Provide construction oversight to ensure scope of work is carried out.	Maintain record of construction oversight for administrative record.	OCSD	Prior to and during construction

Measure 7.4-1c: Pile-Driving Noise Reduction. Contractors shall use vibratory pile drivers instead of conventional pile drivers where feasible and effective in reducing impact noise from shoring of jack-pit locations in close proximity to residential areas, where applicable.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preference to avoid pilings where possible in project design specifications.	Maintain record of design specifications.	OCSD	Prior to project design

Measure 7.4-1d: Construction Notification. Sensitive receptors affected by pipeline replacement projects, and manhole rehabilitation activities shall be notified concerning the project timing and construction schedule, and shall be provided with a phone number to call with questions or complaints.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prepare and distribute notifications.	Maintain record of notification distribution list.	OCSD	Prior to construction

Air Quality

Impact 7.5-1: The proposed improvements to OCSD's collection systems would generate short-term emissions of air pollutants, including dust and criteria pollutants, from excavation, installation and/or replacement activities. This is considered a short-term significant impact that would cease at the completion of construction activities. Construction emission impacts are estimated to occur for an average of three to four weeks within one block of any given property. Less than Significant with Mitigation Measures.

Measure 7.5-1a: Dust Control. The District shall require the contractors to implement a dust abatement program that would reduce fugitive dust generation to lessen impacts to nearby sensitive receptors. The dust abatement program could include the following measures:

- Water all active construction sites at least twice daily.
- Cover all trucks having soil, sand, or other loose material or require all trucks to maintain at least two feet of freeboard.
- Apply water as necessary, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) if visible soil material is carried into adjacent streets.
- Water twice daily or apply non-toxic soil binders to exposed soil stockpiles.
- Limit traffic speeds on unpaved roads to 15 mph.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Conduct mitigation measures to reduce construction air emissions. 2. Conduct periodic construction site inspections.	Maintain record of construction methods for administrative record. Maintain record of site inspections for administrative record.	OCSD	Prior to and during construction

Measure 7.5-1b: Exhaust Emissions. Contractors shall maintain equipment engines in proper working order and operate construction equipment so as to minimize exhaust emissions. Such equipment shall not be operated during first or second stage smog alerts.

Measure 7.5-1c: Truck Emissions Reductions. During construction, trucks and vehicles in loading or unloading queues shall be kept with their engines off, when not in use, to reduce vehicle emissions. Construction activities shall be discontinued during second-stage smog alerts.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include air emission reduction mitigation measures in construction specifications. 2. Conduct periodic site inspections to verify adherence to mitigation measures.	Maintain record of construction specifications and site inspections for administrative record.	OCSD	Prior to construction

Geology

Impact 7.6-1: Project facilities would be located in areas susceptible to primary and secondary seismic hazards (groundshaking, liquefaction, settlement). Damage to facilities could result in the event of a major earthquake. Less than Significant with Mitigation Measures.

Measure 7.6-1a: Seismic Safety. The District will design and construct new facilities in accordance with District seismic standards and/or meet or exceed seismic, design standards in the most recent edition of the California Building Code.

Measure 7.6-1b: Soils Survey. Soils surveys shall be conducted to determine the liquefaction potential along the collection system improvements route.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Use design criteria to reduce seismic hazards. 2. Contract with qualified geologist to conduct geotechnical evaluations prior to construction.	Maintain record of construction specifications and geotechnical information.	OCSD	Prior to construction

Hydrology

Impact 7.7-1: Construction activities could result in erosion and siltation into nearby surface waters, leading to degradation of water quality or flooding hazards. Construction could also result in chemical spills (e.g., fuels, oils, or grease) to stormwater, and increase turbidity and decrease water quality in waters of the U.S. Less than Significant with Mitigation Measures.

Measure 7.7-1a: Contractor BMPs. Construction contractors will implement Best Management Practices to prevent erosion and sedimentation to avoid significant adverse impacts to surface water quality.

Measure 7.7-1b: Storm Season Restrictions. In addition, open-trench installation of pipelines across open drainage channels and the interplant connector shall be limited to the dry season.

Measure 7.7-1c: County of Orange Coordination. The District shall coordinate with the Orange County Public Facilities and Resources Department (Orange County Flood Control District) Planning Section to ensure compatibility and joint use feasibility with existing and future projects.

Measure 7.7-1d: Waterway Protection. The District shall incorporate into contract specifications the requirement that the contractor(s) enforce strict on-site handling rules to keep construction and maintenance materials out of receiving waters. The rules will include measures to:

- Store all reserve fuel supplies only within the confines of a designated construction staging area.
- Refuel equipment only within designated construction staging area.
- Regularly inspect all construction vehicles for leaks.

Measure 7.7-1e: Spill Prevention. The District shall incorporate into contract specifications the requirement that the contractor(s) prepare a Spill Prevention, Control, and Countermeasure Plan. The plan would include measures to be taken in the event of an accidental spill.

Measure 7.7-1f: Spill Containment. The District shall incorporate into contract specifications the requirement that the construction staging areas be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain towards receiving waters or storm drain inlets. If heavy-duty construction equipment is stored overnight adjacent to a potential receiving water, drip pans will be placed beneath the machinery engine block and hydraulic systems.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement BMPs of State-wide SWPPP. 2. Prepare construction SWPPP for sites greater than 5 acres. 3. Implement existing SWMP and SPCC. 4. Periodically update SWMP and SPCC. 5. Provide adequate spill prevention and surface water management SOPs in contract specifications. 6. Periodically inspect construction sites.	Maintain compliance with SWMP and SPCC for administrative record. Including annual reports to the SWRCB. Maintain record of site inspections and sample analysis results.	OCSD	On going

Measure 7.7-1g: Flood Control Facilities. The District will contact the Orange County Flood Control District prior to excavation activities involved with the construction of the interplant connector to ensure the integrity of the flood control system along the Santa Ana River.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Contract with qualified engineer to assess structural impacts to SAR levee prior to construction of interplant connector. 2. Periodically inspect construction site.	Maintain reports for administrative record. Maintain record of site inspections.	OCSD	Prior to construction of interplant connector.

Public Services

Impact 7.8-1: Construction of the collection pipeline system could result in short-term disruption of emergency services in the vicinity of the project area. Less than significant with Mitigation Measures.

Measure 7.8-1a: Traffic Control Plan Notifications. The contractor shall provide a copy of the Traffic Control Plan to the Sheriff's Department local police departments and fire departments prior to construction. The District shall provide 72-hour notice of construction to the local service providers of individual pipeline segments.

Measure 7.8-1b: Emergency Facility Access. Access to fire stations and emergency medical facilities must be maintained on a 24-hour basis and at least one access to medical facilities shall be available at any one time during construction. The District shall notify appropriate officials at the impacted medical facility regarding construction schedule.

Measure 7.8-1c: Trench Openings. Trenches shall be promptly backfilled after pipeline installation. If installation is incomplete, steel trench plates shall be used to cover open trenches.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include site safety measures in contract specifications. 2. Notify local authorities of construction schedule. 3. Maintain access to emergency facilities during construction activities including during non-work hours. 4. Periodically inspect construction sites.	Maintain record of notifications for administrative record. Maintain record of site inspections.	OCSD	During construction

Impact 7.8-2: Construction of the collection system projects would create a public safety hazard in the vicinity of the construction area. Less than Significant with Mitigation Measures.

Measure 7.8-2a: Pedestrian Safety. Construction contractors shall ensure that adequate barriers would be established to prevent pedestrians from entering open trenches of an active construction area. Warnings shall also be posted sufficient distances from the work area to allow pedestrians to cross the street at controlled intersections rather than having to jaywalk.

Measure 7.8-2b: Equipment Security. Construction contractors shall be responsible for providing appropriate security measures, including the provision of security guards, for all equipment staging and/or storage areas needed for the project.

Measure 7.8-2c: Construction Refuse. Construction contractors shall dispose of construction refuse at approved disposal locations. Contractors shall not be permitted to dispose of construction debris in residential or business containers.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include site safety measures in contract specifications. 2. Include waste disposal methods in construction specifications. 3. Periodically inspect construction sites.	Maintain specifications for administrative record. Maintain record of site inspections.	OCSD	Prior to and during construction.

Impact 7.8-3: Construction of the collection pipeline system could result in short-term disruption of utility service and may require utilities relocation. Less than Significant with Mitigation Measures.

Measure 7.8-3a: Utility Search. A detailed study identifying utilities along the pipeline routes shall be conducted during the design stages of the project. For segments with adverse impacts the following mitigations shall be implemented.

- Utility excavation or encroachment permits shall be required from the appropriate agencies. These permits include measures to minimize utility disruption. The District and its contractors shall comply with permit conditions and such conditions shall be included in construction contract specifications.
- Utility locations shall be verified through field survey.
- Detailed specifications shall be prepared as part of the design plans to include procedures for the excavation, support, and fill of areas around utility cables and pipes. All affected utility services would be notified of the District's construction plans and schedule. Arrangements shall be made with these entities regarding protection, relocation, or temporary disconnection of services.

Measure 7.8-3b: Utility Conflicts. In order to reduce potential impacts associated with utility conflicts, the following measures should be implemented in conjunction with 7.8-3a.

- Disconnected cables and lines would be promptly reconnected.
- The District shall observe Department of Health Services (DHS) standards which require a 10-foot horizontal separation between parallel sewer and water mains; (2) one foot vertical separation between perpendicular water and sewer line crossings. In the event that the separation requirements cannot be maintained, the District shall obtain DHS variance through provisions of water encasement, or other means deemed suitable by DHS; and (3) encasing water mains in protective sleeves where a new sewer force main crosses under or over an existing sewer main.

Measure 7.8-3c: Protect Utilities. The construction contractor shall comply with District requirements and specification to protect existing utility lines.

Measure 7.8-3d: Agency Coordination. The District should coordinate with the Orange County Public Facilities Resources Department, Orange County Flood Control District, Planning Section, Metropolitan Water District of Southern California, Municipal Water District of Orange County, Coastal Municipal Water District, and Orange County Water District, and affected jurisdictions to ensure compatibility and joint use feasibility with existing future projects.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement mitigation measures listed above. 2. Include underground utility surveys in construction specifications. 3. Coordinate with local authorities to minimize utility disruption. 4. Periodically inspect construction sites.	Maintain specifications for administrative record. Maintain record of site inspections.	OCSD	Prior to and during construction.

Measure 7.8-3e: Identify Abandoned Oil Wells. Prior to construction, the District shall identify existing and abandoned oil production wells within the project area using the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), District 1 well location maps. Access to identified non-abandoned oil wells will be maintained. Previously abandoned wells identified beneath proposed structures or utility corridors may need to be plugged to current DOGGR specifications including adequate gas venting systems.

Measure 7.8-3f: Abandon Wells. Should construction activities uncover previously unidentified oil production wells, the DOGGR will be notified, and the well will be abandoned following DOGGR specifications for well abandonment.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include existing and abandoned oil well surveys in construction specifications. 2. Coordinate with Department of Conservation to expedite search.	Maintain specifications for administrative record. Maintain record of oil well discoveries and searches for the administrative record.	OCSD	Prior to and during construction.

<u>Aesthetics</u>

Impact 7.9-1: Project implementation could result in short-term visual impacts resulting from construction activities. Less than Significant after Mitigation Measures.

Measure 7.9-1a: Construction Site Restoration. The District shall ensure that its contractors restore disturbed areas along the pipe line alignment to a condition mutually agreed to between the District and local jurisdictions prior to construction such that short-term construction disturbance does not result in long-term visual impacts.

Measure 7.9-1b: Construction Housekeeping. Construction contractors shall be required to keep construction and staging areas orderly, free of trash and debris.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include construction site house-keeping measures in contract specifications.	Maintain specifications for administrative record.	OCSD	Prior to and during construction.
2. Conduct post-construction site inspections.	Maintain record of site inspections.		

Cultural Resources

Impact 7.10-1: Implementation of the proposed collection system improvements may affect known, significant archaeological resources. Less than Significant with Mitigation Measures.

Measure 7.10-1: Archaeological Surveys. During project design, within the area of the 6 recorded archaeological sites within proposed project alignments, a qualified archaeologist shall conduct a subsurface testing program to determine whether intact significant deposits exist in the excavation area. Shall testing indicate that areas of significant deposits do exist, the deposits would be preserved in place, if feasible. If preservation in place is not feasible, a Data Recovery Plan would be prepared to address the removal of those deposits and would be implemented before the beginning of construction. The Plan would define how and when mechanical and manual excavation would be conducted, the anticipated volume of recovered soils, artifact analysis, cataloging and curation, and monitoring and reporting requirements. For the three sites where human remains have been recorded (CA-ORA-85, CA-ORA-87, and CA-ORO-300), the District would enter into a written agreement between an archaeological consultant, to be retained by the District, and a Native American representative prior to construction in the vicinity of these sites. This agreement would specify terms as to the treatment and disposition of the human remains, and shall define “associated burial goods” with reference to Public Resources Code Sections 5097.94, 5097.98, and 5097.99 and Health and Safety Code Section 7050.5.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Contract with a qualified archaeologist to conduct pre-construction site surveys in areas with a high probability of cultural resources. 2. Include necessary actions in specifications shall archaeological artifacts be discovered during construction activities. 3. Conduct post-construction site inspections.	Maintain construction specifications for administrative record. Maintain record of site inspections.	OCSD	Prior to and during construction.

Impact 7.10-2: Implementation of the proposed collection system improvements may affect unknown, potentially significant archeological resources. Less than Significant with Mitigation Measures.

Measure 7.10-2a: Archaeological Resources. Subsurface construction has a low to very high potential for exposing significant subsurface cultural resources. Due to the likelihood of encountering cultural resources, the District shall implement the following prior to project construction:

- Language shall be included in the General Specifications section of any subsurface construction contracts alerting the contractor to the potential for subsurface cultural resources and trespassing on known or potential resources adjacent to the project.
- Prior to construction, contractors and District staff will receive an archaeological orientation from a professional archaeologist regarding the types of resources which may be uncovered and how to identify these resources during construction activities. The orientation shall also cover procedures to follow in the case of any archaeological discovery.

Measure 7.10-2b: Cultural Resources. If cultural resources are encountered at any time during project excavation, construction personnel would avoid altering these materials and their context until a qualified archaeologist has evaluated the situation. Project personnel would not collect or retain cultural resources. Prehistoric resources include, but are not limited to, chert or obsidian flakes, projectile points, mortars, and pestles; and dark, friable soil containing shell and bone, dietary debris, heat-affected rock, or human burials. Historic resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits (glass, metal, wood, ceramics), often found in old wells and privies.

Measure 7.10-2c: Human Remains Alert. In the event of accidental discovery or recognition of any human remains, the County Coroner would be notified immediately and construction activities shall be halted. If the remains are found to be Native American, the Native American Heritage Commission would be notified within 24 hours. Guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement the mitigation measures listed above. 2. Contract with a qualified archaeologist to conduct pre-construction site surveys for areas with a high probability of cultural resources. 3. Include necessary actions in specifications shall archaeological artifacts be discovered during construction activities.	Maintain construction specifications for administrative record. Maintain record of site inspections.	OCSD	Prior to and during construction.

<u>Cumulative</u>

Impact 7.11-1: Construction activities of the collection system projects in conjunction with other projects would result in short-term cumulative impacts. Less than Significant with Mitigation Measures.

Measure 7.11-1a: Coordinate Construction. The District will continue to coordinate construction activities with the county and city public works and planning departments and other local agencies to identify overlapping pipeline routes, project areas, and construction schedules. To the extent feasible, construction activities shall be coordinated to consolidate the occurrence of short-term construction-related impacts.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Coordinate with local authorities prior to final design. 2. Conduct coordination incentives with local jurisdictions.	Maintain record of communication and outreach with local authorities for administrative record.	OCSD	Prior to construction.

Measure 7.11-1b: Recycling. To reduce cumulative impacts related to solid waste, the District shall make all practicable efforts to recycle where feasible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Where feasible, include recycling measures in construction contracts.	Maintain record of soils hauling.	OCSD	Prior to construction.
2. Conduct site surveys to ensure scope of work is followed.	Maintain record site surveys for administrative record.		

Biosolids

Impact 8-2: The projected increase in residual solids volumes would increase truck traffic on local roadways. Less than Significant with Mitigation.

Measure 8-2: Trucking Impact Reduction. The District shall limit truck trips associated with the transport of residual solids to off-peak hours when possible as a means of reducing truck travel times and minimizing congestion impacts to the regional transportation system.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preferred schedule in contracts with haulers.	Maintain record of contract for administrative record.	OCSD	On going

Impact 8-3: The projected increase in residual solids volumes and related truck traffic would increase ambient noise levels at nearby sensitive receptor locations. Less than Significant with Mitigation Measures.

Measure 8-3a: Truck Noise Reduction. The District shall limit truck trips associated with the transport of residual solids at Treatment Plant No. 2 to non-noise sensitive (daytime) and non-peak hour periods as a means of reducing exposure of residences to truck-related noise whenever possible.

Measure 8-3b: Biosolids Transport. The District shall investigate options for reducing the number of biosolids truck trips at Treatment Plant No. 2. The study could focus on evaluating such practices as using underground pipelines to pump biosolids from Plant 2 up to Plant 1.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preferred schedule in contract with haulers.	Maintain record of contract for administrative record.	OCSD	On going

Impact 8-5: The projected increase in biosolids production from POTWs in the Southern California region could present a cumulative impact on the availability of land application sites. Less than Significant with Mitigation.

Measure 8-5a: Biosolids Application Sites. The District will continue to research land application sites in the region and consider the management options including the acquisition of dedicated application sites.

Measure 8-5b: Biosolids Land Application. The District will continue to coordinate with other POTWs in the region to cooperatively research innovative ways to solve land availability issues.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTIONS	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Continue research and efforts to increase land application. 2. Coordinate with POTWs in the region.	Maintain record of research and efforts for administrative record.	OCSD	On going

APPENDIX B

NOTICE OF PREPARATION FOR HEADWORKS REPLACEMENT PROJECT JOB P2-66

Notice of Preparation

Date May 12, 2003

To: Responsible and Trustee Agencies and Interested Parties

Subject Notice of Preparation (NOP) of a Supplemental Environmental Impact Report for Treatment Plant No. 2 Headworks Replacement Project (Job No. P2-66)

The Orange County Sanitation District (District) is the lead agency under the California Environmental Quality Act (CEQA) for the preparation of a Supplemental Environmental Impact Report (SEIR) for the replacement of the Headworks at Treatment Plant No. 2 (Plant No. 2) in Huntington Beach, California. The proposed design of this project has been altered since the District's Strategic Plan Program Environmental Impact Report (PEIR) was certified in October 1999. The SEIR will augment the analysis contained in the 1999 PEIR. The 1999 Strategic Plan proposed substantial upgrades to the existing Headworks at Plant No. 2. However, in 2002, the District conducted a thorough evaluation of the existing Headworks facilities to determine the amount of upgrades needed. The District concluded that it would be less costly and more practical to construct a new Headworks than to continue upgrading the existing facility after 40 years of operation with numerous expansions and modifications.

The District is soliciting the views of interested persons and agencies as to the scope and content of the environmental information to be studied in the SEIR. In accordance with CEQA, agencies are requested to review the project description provided in this NOP and provide comments on environmental issues related to the statutory responsibilities of the agency. The SEIR will address written comments submitted during this initial review period. In accordance with the time limits mandated by CEQA, responses to the NOP must be received by the District no later than 30 days after receipt of this notice. **We request that comments to this NOP be received no later than June 12, 2003.** Please send your comments to Jim Herberg, c/o Angie Anderson at the address shown below. Please include a return address and contact name with your comments.

Project Title: Treatment Plant No. 2 Headworks Replacement Project Supplemental Environmental Impact Report No. 2

Signature: ________________________

Title: ________________________

Address: Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708
Attn: Angie Anderson

Telephone: (714) 593-7305

INTRODUCTION

The Orange County Sanitation District (District) is proposing to construct a new Headworks at Treatment Plant No. 2 (District Job Number P2-66). The Headworks functions as the initial point of entry for all influent flow into the plant. This Notice of Preparation (NOP) has been prepared to notify interested parties pursuant to California Environmental Quality Act (CEQA) requirements that the District, as the lead agency, is beginning preparation of a Supplemental Environmental Impact Report (SEIR) for the Headworks Replacement Project.

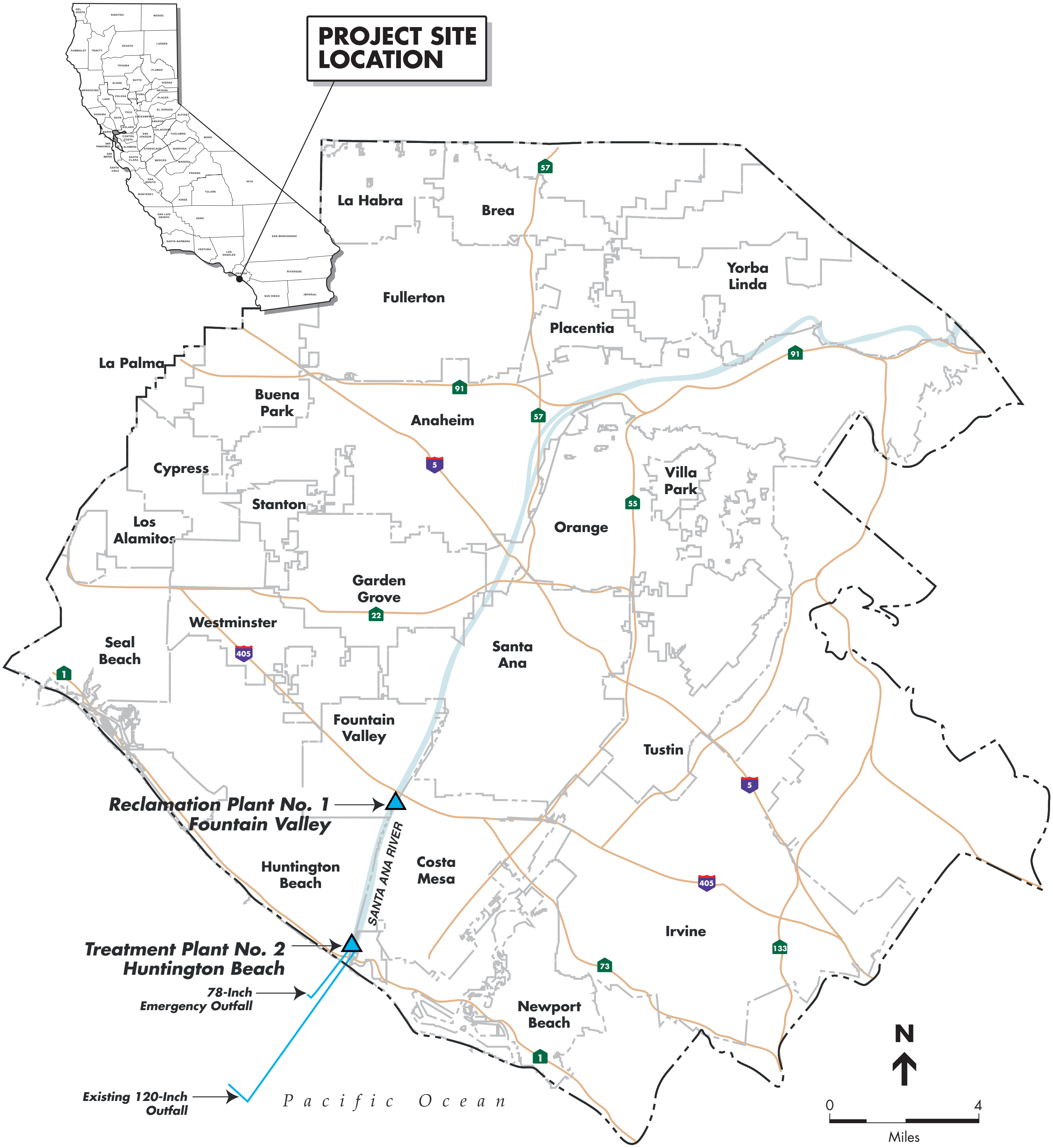
The project was not described in the 1999 Program Environmental Impact Report (PEIR) prepared for the District's 20-year Strategic Plan. The PEIR evaluated a project that would have substantially upgraded the existing Headworks. After further engineering analysis, the District determined that a Headworks replacement was necessary rather than an upgrade of the existing facility. Therefore, the District is preparing SEIR pursuant to the CEQA Guidelines, Section 15163. CEQA provides that a supplement to a previously certified EIR may be prepared if a discretionary action is required for a project for which new information has become available, but for which little revision to the initial EIR, is foreseen as necessary. A SEIR discloses the new information and assesses potential impacts pertaining exclusively to the new information.

PROJECT BACKGROUND

The District provides wastewater services to approximately 2.3 million people within a 450-square mile area of northern and central Orange County. The District operates the third largest wastewater system on the West Coast, consisting of over 650 miles of trunk and subtrunk sewers, two regional wastewater treatment plants, and an ocean disposal system. Figure 1 shows the District's service area.

The District was formed in 1946 under the County Sanitation District Act of 1923 as a single purpose entity, providing wastewater treatment for northern and central Orange County. The District began full operation in 1954 with a network of trunk sewers, two treatment plants, and a 7,200-foot long, 78-inch diameter ocean outfall with a design rated capacity of 240 million gallons per day (mgd). A new 120-inch diameter ocean outfall with a design rated capacity of 480 mgd was installed in 1971. This outfall, currently in service, extends approximately four miles into the ocean where it connects with a diffuser extending another 6,000 feet northward. The effluent discharged to the ocean is a blend of advanced primary and secondary treated wastewater as specified in the District's National Pollutant Discharge Elimination System (NPDES) permit issued jointly by the Santa Ana Regional Water Quality Control Board (RWQCB) and the U.S. Environmental Protection Agency (U.S. EPA).

Plant No. 2 is located in Huntington Beach adjacent to the Santa Ana River (SAR) about 1,500 feet from the Pacific Ocean. The plant is located on approximately 110-acres bounded by Brookhurst Street on the northwest, Pacific Coast Highway on the southwest, and the SAR on the east. The existing treatment facilities occupy the southern two-thirds of the site, with the area to the northeast remaining undeveloped. The plant receives wastewater from five major sewers and provides a mix of advanced primary and secondary treatment. All of the effluent from the plant is discharged to the ocean outfall disposal system.



SOURCE: Environmental Science Associates

Figure 1
Service Area with Existing Treatment Facilities

In 1999, the District prepared a Strategic Plan to identify projects needed to accommodate projected population growth in its service area through 2020. A PEIR for the Strategic Plan was certified in October 1999. The PEIR assessed the potential effects of the Strategic Plan on the local and regional environment. The PEIR also addressed the growth-accommodating role of the District in treating projected flows from the agencies it serves. The PEIR provides program-level analysis of long-term broad planning strategies and project-level analysis for projects designed and planned to occur in the near-term (up to the year 2005).

PROJECT DESCRIPTION

The proposed project would replace the existing Headworks at Plant No. 2 which receives wastewater from five major trunk sewers within the District's service area: Bushard, Miller-Holder, Coast, Newport, and Interplant. The new Plant No. 2 Headworks facility would provide the point of entry for the trunk sewers, measuring their flow and providing grit and debris (preliminary treatment). The major treatment processes and equipment to be installed as part of the proposed project are listed below. Table 1 summarizes the size, height, and depth of each component.

- **Diversion Structure.** An underground concrete structure through which the influent trunk sewers are connected to the treatment plant.

- **Influent Metering Structure.** An underground concrete structure housing four magnetic flow meters and associated piping. The structure is equipped with a 15-ton bridge crane to facilitate equipment maintenance and replacement.

- **Bar Screens Facility.** A concrete structure housing six sewage screening mechanisms (bar screens). The bar screens are rated for a 340 mgd peak wet weather capacity. The facility also includes Influent Screening Channels located below grade.

- **Screenings Handling System**. The screenings are removed washed, dewatered and placed into disposal trucks in the Screenings Handling System. Conveyors transport the material from the Screening Washing Building to the Screenings Loading Building.

- **Influent Pump Station**. The Influent Pump Station consists of a wet well, a pump station and a discharge channel designed to convey a peak flow of 340 mgd. The lower level of the pump room contains seven sewage pumps and piping. The upper level is the motor room. The sewage pumps discharge into the Influent Pump Station Discharge Channel.

- **Grit Basins**. The six vortex sewage grit removal units (grit basins) and six grit pumps are rated to accommodate a peak flow of 340 mgd.

- **Grit Handling Building.** Four grit dewatering units load grit into a trailer housed inside the building.

- **Primary Splitter Structure.** An underground structure housing 26 sluice gates for flow control from the Headworks to downstream primary treatment.

- **Primary Influent Metering Structure.** Three magnetic flow meters measure flow from the Primary Splitter Structure to downstream treatment facilities.

TABLE 1: SUMMARY OF PROJECT COMPONENT AREA, HEIGHT, AND DEPTH

	Area (square feet)	Height (feet)	Depth below grade (feet)
Diversion Structure	3,900	1.5	39
Influent Metering Structure	5,220	2	42
Bar Screens Facility/ Influent Screening Channels	9,100	49.4	35
Screening Washing Building	1,976	18	9.5
Screening Loading Building	1,800	47.5	1.5
Influent Pump Station,	5,500	55	31.5
Influent Pump Station Discharge Channel	3,800	24.5	5.3
Grit Basins/Grit Pump Station	9,300	25	15.5
Grit Handling Building	3,600	56	2.7
Primary Splitter Structure	2,280	56	20.5
Primary Influent Metering Structure	2,775	1.5	20.5
Primary Treatment Ferric Chloride Facility	2,000	33	3.5
Headworks Odor Control Facility	69,000	48	0
Trunkline Odor Control Facility	5,250	48	0
Power Building E	12,000	20.5	3.8

Source: Carollo Engineers, 2003

- **Primary Treatment Ferric Chloride Facility.** Houses two 21,000 gallon above-ground ferric chloride storage tanks (Ferric chloride is used in the wastewater process as a settling-aid for advanced primary treatment and odor control) and six chemical feed pumps for dosing.

- **Headworks Odor Control Facility.** These facilities include large-capacity fans, bio-trickling filter towers, chemical scrubber towers, chemical feed systems, and chemical storage tanks.

- **Trunkline Odor Control Facility.** Provides odor treatment for incoming trunk sewers. These facilities include large-capacity fans and bio-trickling filter towers.

- **Power Building E.** Houses electrical equipment including switchgear, variable frequency drives, and motor control centers. Six electrical transformers are located outside along the southeast of the building.

- **Site Piping.** Additional buried piping and electric ductbanks would be installed as described below.

    - Diversion sewers and diversion boxes would be installed for four large diameter (78-inch to 108-inch) influent sewer trunks from the existing Headworks to the new Headworks.
    - Three large diameter (84-inch to 96-inch) primary influent lines and junction boxes to connect the new Headworks to the existing primary influent lines.
    - Foul air ducts from the new Headworks and trunk lines to the odor control facilities.
    - Chemical pipelines for ferric chloride and sodium hypochlorite.
    - Associated drain pipelines, storm drains, and utility pipelines including high pressure air, reclaimed water, plant water, and potable water.
    - Electrical ductbanks feeding electric power to the process buildings.

- **Chemical Storage.** The ferric chloride system would include two 21,000-gallon above-ground storage tanks located adjacent to the main facility. The new system would use approximately 6,000 gallons of ferric chloride per day.

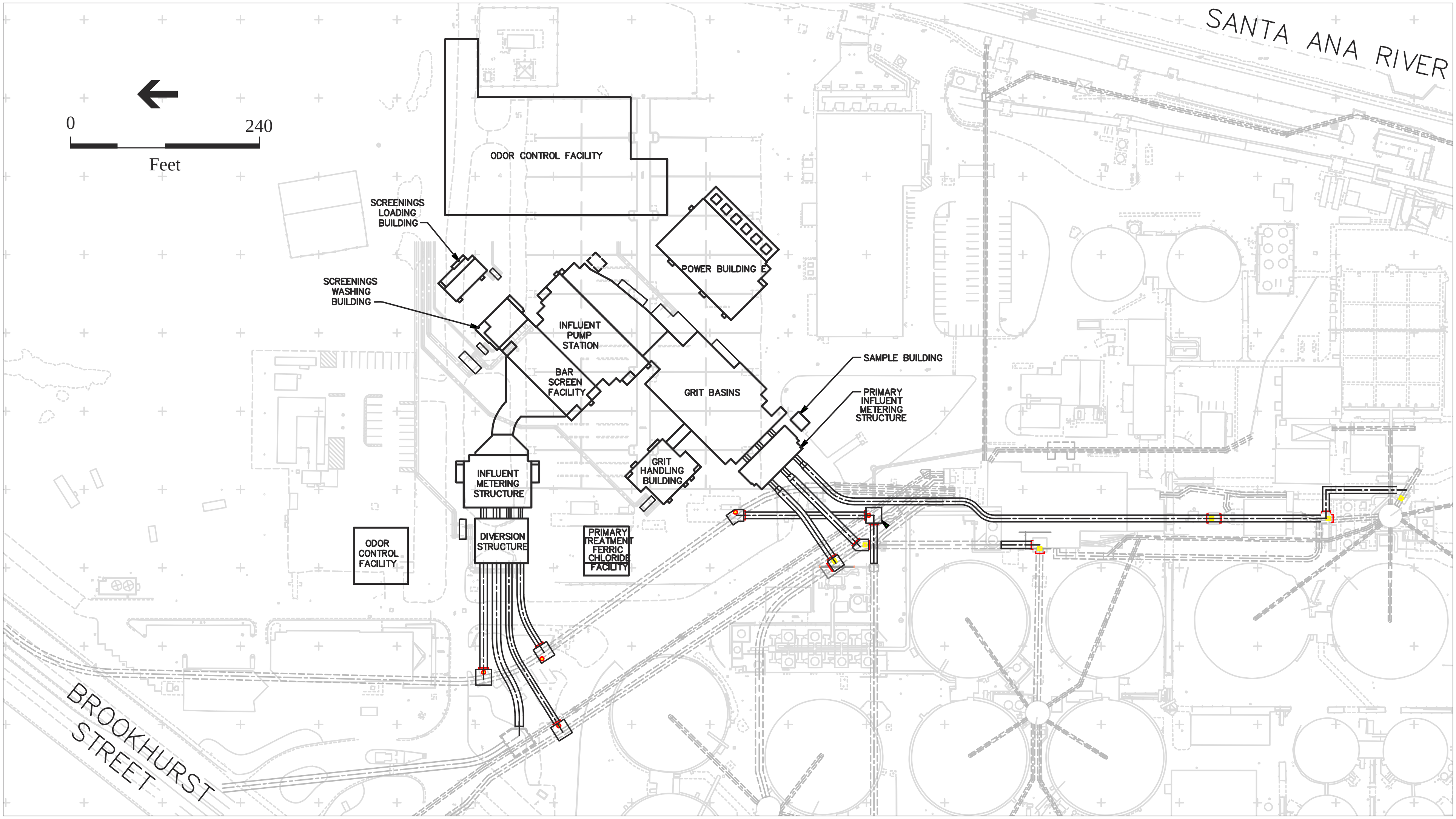
    Sodium hypochlorite would be stored in a 16,000 gallon above-ground storage tank. The new system would use up to 2,200 gallons per day of sodium hypochlorite. An additional 12,000 gallon above-ground storage tanks would be installed for sodium hydroxide (average of 900 gallons used per day) and an 8,000 gallon tank for hydrochloric acid (use of 800 gallons per day, two days a month). All tanks would have containment facilities in the event of a spill.

The new Headworks would have a 340 mgd peak wet weather flow capacity and would not increase the existing treatment capacity of Plant No.2. The odor control system would consist of new bio-tower scrubbing technology followed by conventional chemical scrubbers. Both the bio-towers and the conventional scrubbers would be approximately 48 feet tall located adjacent to the main facility.

Figure 2 shows the proposed site plan of the new Headworks facility. Wastewater from each trunk sewer passes through a separate section of the diversion structure and metering structure before converging upstream of the bar screens. After passing through the bar screens, the wastewater flows by gravity to the pump station where it is pumped into a channel that conveys flow through grit chambers and primary influent metering structure to the primary clarifiers.

The new screenings and grit handling buildings would be equipped with washing, dewatering, and loading facilities adjacent to the main Headworks structure. On an average day, the new Headworks would remove 5-1/3 cubic yards (cy) (7.2 tons) of grit and 19 cy (18 tons) of screenings. Grit removal would require 125 haul truck trips per year, compared to the present 250 because of the proposed dewatering facilities. Screening washing and compacting will reduce the average daily volume of screenings to 11 cy which would require 185 haul truck trips per year, compared to the present 240.

The new Headworks facility would be up to 56 feet tall as summarized in Table 1. The project would occur within a 30-acre portion of the Plant No. 2 which contains the existing sludge drying beds, Headworks, two underground storage tanks and a truck washing facility. These facilities would be decommissioned and demolished as part of the project. The road network and parking area on the affected portion of the Treatment Plant would be modified as part of the project.



SOURCE: Orange County Sanitation District, May 2003

OCSD Headworks Replacement SEIR / 201168

Figure 2
Proposed Headworks Site Plan

Construction of the project would require approximately four years and eight months. All of the construction would occur within the property boundaries of the District's Plant No. 2. Construction would require excavation of approximately 175,000 cy of soil, 75,000 cy of which would be disposed of off site, requiring approximately 3,750 haul truck trips. The new Headworks and ancillary facilities would be fully constructed prior to the demolition of the existing facility.

The new Headworks would be connected to the incoming sewers and treatment plant in three phases during the final 14 months of construction. In each phase, one or two of the trunk lines would be connected to the new Headworks and a temporary bypass line would be constructed to redirect the flow out of the new Headworks back to the existing Headworks. Then a third of the existing primary clarifiers would be taken out of service and connected to the new Headworks. The clarifiers would then be placed back in service. While the primary clarifiers are out of service some of the influent would be redirected to the District's Reclamation Plant No. 1 to reduce the total flow through Plant No. 2. The existing Headworks would be demolished in two phases: a portion before the second tie-in to the existing primary clarifiers and the remaining portion before the third tie-in to the existing primary clarifiers.

Prior to completion of the new Headworks, the District may reroute the Newport Trunk Sewer via one of two alternatives being proposed under a separate project. In one alternative, the sewer would connect with the Coast Trunk Sewer near Pacific Coast Highway through a new force-main pipeline. The other alternative would construct a new force main system within the marshy area of the Banning Ranch entering the Plant No. 2 from under the Santa Ana River approximately 2,700 feet north of the Pacific Coast Highway (PCH). Currently, the Newport Trunk Sewer and Force Main Project is being evaluated under a separate CEQA document, but on a parallel track with this project.

DISCUSSION OF POTENTIAL IMPACTS

The SEIR will focus on potential impacts associated with implementation of the project. The following discussions highlight potentially significant impacts of the project to be addressed in the SEIR. Other environmental resource areas (i.e., agricultural, cultural, mineral resources, population and housing, recreation.) discussed in the 1999 PEIR will not be addressed in the SEIR since the project would not alter the analysis or conclusions of the PEIR. The SEIR will develop mitigation measures where feasible to avoid or lessen the identified impacts.

AESTHETICS

The proposed project would involve constructing new structures at the District's Plant No. 2 in Huntington Beach. The character of the proposed structures would be similar to the existing facilities on the plant. The existing landscaping and sound wall along Brookhurst Street would screen views of the Headworks facility from the residential areas across Brookhurst Street. The structures would be visible from across the SAR by the residential areas approximately ½ mile east of the plant. The SEIR will evaluate the potential visual impacts of the project.

AIR QUALITY

Construction activities related to the installation of the Headworks facility and ancillary equipment would consist of excavation, trenching, construction, pipeline installation, and demolition. Construction exhaust emissions would be generated from construction equipment, earth movement and demolition activities, construction workers' commute, and material hauling for the entire construction period. It is anticipated that the proposed project would be completed within four years and eight months. Construction-related activities would occur eight hours per day, five days per week. During this period, due to the size of the construction project, daily emissions thresholds of significance established by the SCAQMD could be exceeded. The SEIR will estimate daily exhaust emissions based on detailed construction activities to assess the potential short-term air quality impact.

Operation of the new Headworks facility would require air emissions permits from the South Coast Air Quality Management District (SCAQMD). The permits would cover the odor control facilities, back-up power sources, and the overall Headworks facility. The SEIR will identify and evaluate necessary air emissions permits and performance standards for odor control.

GEOLOGY AND SOILS

Plant No. 2 is located near the Newport-Inglewood Fault, an active and potentially hazardous fault zone. Multiple fault splays run through the treatment plant site. Other major faults in the region include the Whittier Fault Zone and the Palos Verdes Fault. Seismic activity on any of these known faults within the region could cause considerable ground shaking in the project. Since earthquake-related hazards can not be avoided in the Southern California region, the project site may be subjected to ground motion which could affect structures. Critical structures and infrastructure at the new Headworks facility would not be located on known faults subject to surface rupture. Plant No. 2 overlies a liquefaction hazard area. The potential for soil liquefaction in the project area is considered high due to the unconsolidated soils and high water table.

The existing Headworks facility is unmanned but periodically serviced by District personnel. The new Headworks facility would continue to be serviced and operated as such. The project would construct new facilities to replace existing facilities, providing more protection from seismic impacts than currently exists because of more stringent design and construction standards presently required. The design of the new Headworks would account for these seismic hazards present on the treatment plant site. The SEIR will summarize the geotechnical information and evaluate potential geologic hazards and measures being proposed to minimize hazards.

HAZARDS AND HAZARDOUS MATERIALS

The project would include the installation of the following above-ground storage tanks:

- two 21,000-gallon ferric chloride tanks
- one 16,000-gallon sodium hypochlorite tank
- one 12,000-gallon sodium hydroxide tank
- one 8,000-gallon hydrochloric (Muriatic) acid tank

The chemicals would be routinely delivered to the treatment plant by tank truck, as under existing conditions. However, the quantity of these chemicals would increase and the possibility would continue to exist for an accidental release. All chemical storage tanks would be enclosed with secondary containment. The SEIR will evaluate the potential hazard of the chemicals to be stored and used. As part of this project, two existing underground storage tanks would be removed. The SEIR will also evaluate the potential for on-site structures slated for demolition to contain asbestos and lead-based paint.

HYDROLOGY AND WATER QUALITY

The project would require excavating soils to install the new Headworks and ancillary structures. Since groundwater is shallow, the excavations would likely encounter groundwater, requiring dewatering during the construction activities. In addition, the large excavation could collect rainwater during a storm. Collected groundwater and storm water would be discharged through the treatment plant in compliance with the District's dewatering permit and standard best management practices.

During the final 14 months of construction, a portion of the primary treatment facilities at Plant No. 2 would be disconnected from the existing Headworks and connected to the new Headworks, temporarily reducing primary treatment capacity. During peak flow periods, the plant's effective primary treatment capacity could be impacted. This could temporarily affect the quality of the effluent discharged to the ocean. The SEIR will provide an analysis of potential effects of the project on the effluent quality and identify any operational strategies or changes in the treatment process that may be needed during the construction period to allow the District to comply with the discharge permit requirements.

TRAFFIC AND TRANSPORTATION

Construction activities would increase traffic to Plant No. 2 as workers access the site, building materials are delivered, and excavated soils are removed. This increase is not expected to significantly impact local intersections. Workers parking would be provided onsite at the District's Plant No. 2 in Huntington Beach. Once the Headworks and ancillary buildings and equipment are constructed, operations of the facility would have similar effects on local traffic as under current conditions as described in the PEIR.

NOISE

Construction activities associated with the project would generate short-term noise that could exceed fence-line noise thresholds, although it is anticipated that no pile driving activities would be required for construction. Construction noise would only occur during the day in compliance with local ordinances. Measures will be evaluated to reduce the nuisance where possible.

CUMULATIVE EFFECTS

The SEIR will evaluate the project's contribution to the cumulative baseline condition for each environmental resource listed in the CEQA Guidelines Appendix G. The construction activities conducted for the new Headworks project would be in addition to the construction activities described in the 1999 Strategic Plan as well as additional projects proposed for the treatment plant subsequent to the completion of the Strategic Plan PEIR. Localized effects to noise, air quality, and traffic from these construction activities could be cumulatively significant.

APPENDIX C

COMMENTS RECEIVED ON NOTICE OF PREPARATION

CITY OF ANAHEIM, CALIFORNIA

Planning Department

RECEIVED

2003 JUN 12 PM 4:22

ENGINEERING

June 6, 2003

Mr. Jim Herberg, Engineering Manager
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

RE: NOTICE OF PREPARATION (NOP) OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR TREATMENT PLANT NO. 2 HEADWORKS REPLACEMENT PROJECT (JOB NO. P2-66)

Dear Mr. Herberg:

Thank you for the opportunity to review the above-referenced document. City staff has reviewed the document and has no comments at this time.

Please forward any subsequent public notices and/or environmental documents regarding this project to my attention at the address listed below.

If you have any questions regarding this response, please do not hesitate to contact me at (714) 765-5139, Extension 5750.

Sincerely,

Joseph W. Wright
Joseph W. Wright
Associate Planner

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200 South Anaheim Boulevard
P.O. Box 3222, Anaheim, California 92803 • (714) 765-5139 • www.anaheim.net

City of Huntington Beach

2000 MAIN STREET **CALIFORNIA 92648**

DEPARTMENT OF PLANNING

Phone **536-5271**
Fax **374-1540**
374-1648

June 24, 2003

Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708
Attn: Angie Anderson

SUBJECT: Notice of Preparation (NOP) of Supplemental EIR for Orange County Sanitation District Headworks Replacement Project

Dear Ms. Anderson:

Thank you for the opportunity to comment on the preparation of the Supplemental EIR. The City of Huntington Beach agrees with the conclusion of the NOP that aesthetics, air quality, noise, hazards, traffic and water quality should be addressed in the SEIR. With regard to the latter two issues, please note the following:

1. OCSD should ensure urban runoff-related issues are fully addressed in the SEIR. As necessary, mitigation measures should be included to minimize short and long term impacts on receiving waters to the maximum extent practicable. The City has expanded its CEQA checklist to better address this issue and recommends the District use this in its analysis of water quality impacts.

2. The Orange County Sanitation District should coordinate with the Department of Public Works in the development of an acceptable truck haul route for the anticipated export of material. A discussion and exhibit should be included to identify the approximate number of truck trips and the proposed truck haul routes. It should specify the hours during which transport activities can occur and methods to mitigate construction-related impacts to adjacent residents.

We look forward to reviewing the SEIR. Should you have any questions regarding the above comments, please contact Rosemary Medel at (714) 536-5271.

Sincerely,

Howard Zelefsky, Director of Planning

Cc: Scott Hess, Planning Manager
Mary Beth Broeren, Principal Planner

Costa Mesa Sanitary District

... an Independent Special District

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'03 MAY 27 PM 3 25
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Phone
_(714) 754-5043_

Fax
_(714) 432-1436_

Mailing Address
P. O. Box 1200
Costa Mesa, CA
_92628-1200_

Street Address
77 Fair Drive
Costa Mesa, CA
_92626-6520_

May 22, 2003

Mr. Jim Herberg
c/o Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

RE: NOP FOR IMPROVEMENTS TO TREATMENT PLANT NO. 2

The Costa Mesa Sanitary District is in full support of the proposed project of replacing the Headworks at Treatment Plant No. 2 in Huntington Beach. OCSD has determined that constructing a new Headworks is more efficient than upgrading the existing Headworks.

The project will increase the reliability of the sewer system serving Orange County, thereby protecting the environment and the ocean water quality.

Thank you for the opportunity to comment on the proposed project. If you have any questions please call me at 949/631-1731.

Sincerely,

RH

Robin B. Hamers
Manager/District Engineer

cc. Board
Staff

RECEIVED

County of Orange
Planning & Development Services Department

2003 JUN 17 PM 4: 26
ENGINEERING

300 N. FLOWER ST.
SANTA ANA, CALIFORNIA

MAILING ADDRESS:
P.O. BOX 4048
SANTA ANA, CA 92702-4048

NCL 03-056

June 12, 2003

Jim Herberg
c/o Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

SUBJECT: NOP of a DSEIR for Treatment Plant No. 2 Headworks Replacement Project

Dear Mr. Herberg:

The above referenced item is a Notice of Preparation (NOP) of a Draft Supplemental Environmental Impact Report (DSEIR) for the Orange County Sanitation District (District). The approximately 110-acre plant is located in Huntington Beach adjacent to the Santa Ana River about 1,500 feet from the Pacific Ocean. The proposed project involves the construction of the new Headworks (initial point of entry of all influent flow into the plant) in Plant No.2.

The County of Orange has reviewed the NOP and offers the following comments:

WATER QUALITY

It is recommended that the following issues be addressed in the DSEIR:

1. The existing conditions of Receiving Waters as identified in the Water Quality Control Plan – Santa Ana Basin (Basin Plan), with its goals and objectives for surface water quality;

2. Water quality impairments in the downstream receiving waters, as reflected in the 2002 Clean Water Act 303(d) list;

3. The potential surface water quality impacts of the project including but not limited to: construction activities, long-term runoff impacts of new impervious surfaces, pesticides and fertilizers applied to landscaping, future spills from accidents and/or improper business management of chemicals, as they relate to 1 and 2 above; and

4. Mitigations for project water quality impacts, which should include:

    a. Preparation of a construction Stormwater Pollution Prevention Plan under State National Pollution Discharge Elimination System (NPDES) requirements;

    b. Compliance with the State General Industrial NPDES Permit. The DSEIR should at least include, but not be limited to, consideration of Best Management Practices (BMPs) consistent with the Water Quality Management Plan (WQMP) program in Section 7 and exhibit 7-II of the 2003 Countywide Drainage Area Management Plan (DAMP). This includes describing commitments to installation and maintenance of site design, source control and treatment control BMPs consistent with the DAMP New Development Appendix.

    Under the new Municipal Stormwater NPDES permit and in the pending 2003 DAMP, commercial and industrial development greater than 100,000 square feet including parking areas will be considered priority projects which require appropriately sized treatment control BMPs to be included in the WQMP.

WASTE MANAGEMENT

5. <u>Waste Diversion</u>

When structures such as buildings, surface parking and sidewalks are demolished as part of the initial site preparation phase for a project, demolition wastes are generated. The proposed project will result in the generation of demolition wastes. Demolition-generated wastes consist of heavy, inert materials such as concrete, asphalt, rock and soils, wood, drywall, plaster, metals and brick. These materials create significant problems when disposed of in landfills; since demolition wastes do not decompose, they take up valuable landfill capacity. Additionally, since demolition wastes are heavy when compared with paper and plastic, it is more difficult for jurisdictions to reduce the tonnage of disposed waste. For this reason, demolition waste debris has been specifically targeted by the State of California for diversion from the waste stream. Projects that which will generate demolition waste should emphasize deconstruction and diversion planning, rather than demolition. Deconstruction is the planned, organized dismantling of existing buildings and structures on a project site, which allows maximum use of the deconstructed materials for recycling and limits disposal at solid waste landfills. The recycling coordinator for the Orange County Sanitation District can provide the names and locations of recycling facilities in the project area that will accept these wastes. We recommend that this project address a waste reduction plan for the demolition wastes generated from this project. This plan should be coordinated with the recycling coordinator for the Orange County Sanitation District.

6. <u>Unacceptable Materials</u>

Demolition-generated waste from the proposed project may contain contaminated soils, asbestos, lead-based paints, fluorescent lamps and ballasts, or other hazardous materials.

Orange County solid waste landfills are not permitted to accept these waste materials. In addition, Orange County solid waste landfills are not permitted to accept waste contaminated with toxic or hazardous materials, or waste having a moisture content greater than 50%. During the demolition phase of the proposed project, if contaminated soils, asbestos, lead-based paints, fluorescent lamps and ballasts, hazardous materials or liquids are discovered, then these materials must be transported to facilities that are permitted to accept them. If additional clarification is needed, please contact a County Materials Regulation Specialist at (714) 834-4000.

ENVIRONMENTAL HEALTH

The following comments are being submitted, and are limited to the issues relevant to the interests and mandated responsibilities of the Hazardous Materials Management Section of the County's Environmental Health Division.

7. The installation of the 8,000-gallon hydrochloric (Muriatic) acid tank qualifies the District to be subject to regulation/enforcement of the California Accidental Release Prevention Program. Please contact the Huntington Beach Fire Department at (714) 536-5469 for information.

8. If Underground Storage Tanks (UST's) are to be removed, it is highly recommended that a staff member from Orange County Environmental Health Division (OCHCA/EHD) Site Mitigation be present for the removal of the UST's and for soil sampling.

9. If a Site Mitigation staff person is not present, it is highly recommended that the UST removal contractor use the OCHCA/EHD Voluntary Clean-Up Program hot line at (714) 667-3713. It is expected that all pertaining requirements in the California Underground Storage Tank Regulation be followed.

10. If soil remediation is necessary due to contamination from hazardous materials/waste, the State Water Resources Control Board, Santa Ana Region manages the clean-up process in this area and can be contacted at (909) 782-4130.

Thank you for the opportunity to respond to the NOP. Please send one complete set (that we can reproduce) of the DSEIR to Charlotte Harryman at the above address when it becomes available. If you have questions, please contact Ms. Harryman at (714) 834-2522.

Sincerely,

for Timothy Neely, Manager
Environmental Planning Services Division

ch

DEPARTMENT OF CONSERVATION

STATE OF CALIFORNIA

CALIFORNIA CONSERVATION

DIVISION OF OIL, GAS, & GEOTHERMAL RESOURCES

5816 CORPORATE AVE.
SUITE 200
CYPRESS
CALIFORNIA
90630-4731

PHONE
916/816-6847

FAX
916/816-6853

INTERNET
consrv.ca.gov

GRAY DAVIS
GOVERNOR

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May 19, 2003

Jim Herberg, c/o Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

Subject: Notice of Preparation (NOP) for: Treatment Plant No. 2 Headworks Replacement Project Supplemental Environmental Impact Report No. 2, Orange County

The Department of Conservation's (Department) Division of Oil, Gas, and Geothermal Resources (Division) has reviewed the above referenced project. The Division supervises the drilling, maintenance, and plugging and abandonment of oil, gas, and geothermal wells in California.

The proposed project is located within the administrative boundaries of the West Newport oil field. There are numerous plugged and abandoned wells within the project boundaries. These wells are identified on Division map 136 and records. The Division recommends that all wells within or in close proximity to project boundaries be accurately plotted on future project maps and assessed for potential hazards in the SEIR. This office should be contacted for detailed well location information.

Building over or in the proximity of plugged and abandoned wells should be avoided if at all possible. If this is not possible, it may be necessary to plug or re-plug wells to current Division specifications. Also, the State Oil and Gas Supervisor is authorized to order the reabandonment of previously plugged and abandoned wells when construction over or in the proximity of wells could result in a hazard (Section 3208.1 of the Public Resources Code). If reabandonment is necessary, the cost of operations is the responsibility of the owner of the property upon which the structure will be located.

Furthermore, if any plugged and abandoned or unrecorded wells are damaged or uncovered during excavation or grading, remedial plugging operations may be required. If such damage or discovery occurs, the Division's district office must be contacted to obtain information on the requirements for and approval to perform remedial operations.

To ensure proper review of building projects, the Division has published an informational packet entitled, "Construction Project Site Review and Well Abandonment Procedure" that outlines the information a project developer must submit to the Division for review. Developers should contact the Division's Cypress district office for a copy of the site-review packet.

Thank you for the opportunity to comment on the NOP. If you have questions on our comments, or require technical assistance or information, please call me at the Cypress district office: 5816 Corporate Avenue, Suite 200, Cypress, CA 90630-4731; phone (714) 816-6847.

Sincerely

David Curtis
Environmental Engineer

Department of Toxic Substances Control

Edwin F. Lowry, Director
5796 Corporate Avenue
Cypress, California 90630

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

May 30, 2003

Mr. Jim Herberg
Engineering Manager
C/o Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, California 92708

NOTICE OF PREPARATION OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR TREATMENT PLANT NO. 2 HEADWORKS REPLACEMENT PROJECT

Dear Mr. Herberg:

The Department of Toxic Substances Control (DTSC) has received your Notice of Preparation (NOP) of a Supplemental Environmental Impact Report (SEIR) for the above-mentioned Project.

Based on the review of the document, DTSC's comments are as follows:

1) A copy of the SEIR should be filed with the State Clearinghouse, P.O. Box 3044, Sacramento, California 95812-3044, Telephone Number: (916) 445-0613.

2) The NOP does not specifically address the Hazards' section checklist of the California Environmental Quality Act (CEQA) which includes the following questions:

   - Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

   - Would the project create a significant hazard to the public or the environment though reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

   - Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

- Would the project be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

- For a project 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?

- 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?

- Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

- Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

3) The SEIR needs to identify and determine whether current or historic uses at the Project site have resulted in any release of hazardous wastes/substances at the Project area.

4) The SEIR needs to identify any known or potentially contaminated site within the proposed Project area. For all identified sites, the SEIR needs to evaluate whether conditions at the site pose a threat to human health or the environment. A Phase I Assessment may be sufficient to identify these sites. Following are the databases of some of the regulatory agencies:

- National Priority List (NPL): A list is maintained by the United States Environmental Protection Agency (U.S.EPA).

- CalSites: A Database primarily is used by the California Department of Toxic Substances Control.

- Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that maintained by U.S. EPA.

- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that maintained by U.S.EPA.

- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.

- Leaking Underground Storage Tanks (LUST) / Spills, Leaks, Investigations and Cleanups (SLIC): A list that is maintained by Regional Water Quality Control Boards.

- Local County and City maintain lists for hazardous substances' cleanup sites and leaking underground storage tanks.

5) The SEIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may require remediation, and the government agency to provide appropriate regulatory oversight.

6) The NOP shows that the project area contains existing sludge drying beds, Headworks, two underground storage tanks and a truck washing facility and these facilities would be decommissioned and demolished as part of the project. Appropriate regulatory agency oversight should be required during these activities.

7) Any hazardous wastes/materials encountered during construction should be remediated in accordance with local, state, and federal regulations. Prior to initiating any construction activities, an environmental assessment should be conducted to determine if a release of hazardous wastes/substances exists at the site. If so, further studies should be carried out to delineate the nature and extent of contamination. Also, it is necessary to estimate the potential threat to public health and/or the environment posed by the site. It may be necessary to determine if an expedited response action is required to reduce existing or potential threats to public health or the environment. If no immediate threats exist at the site, the final remedy should be implemented in compliance with state regulations and policies rather than excavation of soil prior to any assessments.

8) All environmental investigation and/or remediation should be conducted under a Workplan which is approved by a regulatory agency that has jurisdiction to oversee hazardous waste cleanups. Complete characterization of the soil is needed prior to any excavation or removal action.

9) The NOP states that the proposed project construction requires soil excavation and soil filling in certain areas. Appropriate sampling is required prior to disposal of the excavated soil. If the soil is contaminated, properly dispose of it rather than placing it in another location. Land Disposal Restrictions (LDRs) may be applicable to these soils. Also, if the project is planning to import soil to backfill the areas excavated, proper sampling should be conducted to make sure that the imported soil is free of contamination.

10) If the subject property was previously used for vegetation or agriculture, onsite soils could contain pesticide residues. The site may have contributed to soil, and groundwater contamination. Proper investigation and remedial actions should be conducted at the site prior to its new development.

11) If any of the adjacent properties of the project site are contaminated with hazardous chemicals, and if the proposed project is within 2,000 feet from a contaminated site, then the proposed development may fall under the "Border Zone of a Contaminated Property." Appropriate precautions should be taken prior to construction if the proposed project is on a "Border Zone Property."

12) Investigate the presence of lead-based paints and ACMs in the currently existing building structures that plans to be demolished/renovated. If the presence of lead-based paints or ACMs are suspected, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with the California environmental regulations.

13) A groundwater investigation may also be necessary based on the nature of on-site activities.

14) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5).

15) If it is determined that hazardous wastes are or will be generated and the wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite,

or (c) disposed of onsite, then a permit from DTSC may be required. The facility should contact DTSC at (818) 551-2171 to initiate pre application discussions and determine the permitting process applicable to the facility.

16) If it is determined that hazardous wastes will be generated, the facility should obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942.

17) Certain hazardous waste treatment processes may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting Mr. Steven Wong, Orange County Environmental Health Department at (714) 667-3771 (swong@hca.co.orange.ca.us).

18) If the project is planning for discharging waste water to the municipal sewer system, you may be required to obtain waste water discharge requirements from the Santa Ana Regional Water Quality Control Board.

19) If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate Health and Safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the draft EIR should identify how any required investigation and/or remediation will be conducted, and the government agency to provide appropriate regulatory oversight.

DTSC provides guidance for the Preliminary Endangerment Assessment (PEA) preparation and cleanup oversight through the Voluntary Cleanup Program (VCP). For additional information on the VCP, please visit DTSC's web site at www.dtsc.ca.gov.

If you have any questions regarding this letter, please contact Mr. Johnson P. Abraham, Project Manager at (714) 484-5476.

Sincerely,

Haissam Y. Salloum, P.E.
Unit Chief
Southern California Cleanup Operations Branch
Cypress Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

IRVINE RANCH WATER DISTRICT

IRVINE RANCH WATER DISTRICT 15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

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2003 MAY 27 PM 3:25

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May 21, 2003

Jim Herberg
C/O Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

Subject: Notice of Preparation (NOP) of a Supplemental Environmental Impact Report for Treatment Plant No. 2 Headworks Replacement Project (Job No. P2-66)

Dear Mr. Herberg:

Irvine Ranch Water District (IRWD) has received and reviewed the NOP for the subject project. As a significant discharging agency to OCSD, IRWD takes a keen interest in upgrades to the treatment plants and the subject project in particular. The project does not appear to affect operations or discharge by IRWD, however if construction does require changes in how IRWD conveys wastewater to OCSD, this potential should be discussed in the Supplemental EIR.

IRWD appreciates the opportunity to review and comment on this project, and looks forward to the issuance of the environmental impact report. Should you have any questions or require additional information, please call Gregory Herr, Planning and Resources Specialist at (949) 453-5577.

Yours truly,

Richard A. Diamond
Water Resources Manager

RAD/GKH

South Coast
Air Quality Management District
21865 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 · www.aqmd.gov

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May 21, 2003

Mr. Jim Herberg
c/o Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

Dear Mr. Herberg:

Notice of Preparation of a Draft Supplemental Environmental Impact Report for Treatment Plant No. 2 Headworks Replacement Project

The South Coast Air Quality Management District (AQMD) appreciates the opportunity to comment on the above-mentioned document. The AQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the Draft Environmental Impact Report (EIR).

Air Quality Analysis

The AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The AQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the AQMD's Subscription Services Department by calling (909) 396-3720.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction and operations should be considered. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the evaluation. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the AQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additionally, AQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

AQMD rules and relevant air quality reports and data are available by calling the AQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the AQMD's World Wide Web Homepage (http://www.aqmd.gov).

The AQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. Please call Dr. Charles Blankson, Transportation Specialist, CEQA Section, at (909) 396-3304 if you have any questions regarding this letter.

Sincerely,

Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rule Development and Area Sources

SS:CB:li

ORC30514-01LI
Control Number

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

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2003 MAY 27 PM 3:26
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May 21, 2003

Mr. Jim Herberg
Attn: Angie Anderson
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

RE: **SCAG Clearinghouse No. I 20030264 Treatment Plant No. 2 Headworks Replacement Project**

Dear Mr. Herberg:

Thank you for submitting the **Treatment Plant No. 2 Headworks Replacement Project** for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Treatment Plant No. 2 Headworks Replacement Project**, and have determined that the proposed Project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and California Environmental Quality Act (CEQA) Guidelines (Section 15206). Therefore, the proposed Project does not warrant comments at this time. Should there be a change in the scope of the proposed Project, we would appreciate the opportunity to review and comment at that time.

A description of the proposed Project was published in SCAG's **May 1-15, 2003** Intergovernmental Review Clearinghouse Report for public review and comment.

The project title and SCAG Clearinghouse number should be used in all correspondence with SCAG concerning this Project. Correspondence should be sent to the attention of the Clearinghouse Coordinator. If you have any questions, please contact me at (213) 236-1867. Thank you.

Sincerely,

Jeffrey M. Smith

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

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2003 MAY 27 PM 3:24

ENGINEERING

Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708
Attn: Angie Anderson

Notice of Preparation Dated May 12, 2003

Thank you, for allowing me to input me thoughts regarding this project.

I believe you are dealing with a great energy source and should be planning to extract all the energy possible by collecting and converting the gases to generate electricity and also use the exhaust heat from the generators to help kill the dangerous pathogens in the sludge and also to dry the sludge so it also could be burned to generate more electricity. You could use electrostatic precipitators to clean the exhaust gases as is done in the glass making industry. They also used to waste their heat but now generate some of the power they use from the glass furnaces exhausts.

As I have stated before, the Inland Empire Utility District is creating a positive from the very negative situation of all the cattle manure. We can do the same.

Truly Yours

Tom England

Tom England
9711 Swallow Lane
Garden Grove CA 92841

APPENDIX D

INITIAL STUDY CHECKLIST

INITIAL STUDY CHECKLIST

The following Environmental Checklist and discussion of potential environmental effects were completed in accordance with Section 15063(d)(3) of the CEQA Guidelines to determine if the project may have any significant effect on the environment.

A brief explanation is provided for all determinations. A "No Impact" or "Less than Significant Impact" determination is made when the project will not have any impact or will not have a significant effect on the environment for that issue area based on a project-specific analysis.

CEQA ENVIRONMENTAL CHECKLIST FORM AND INITIAL STUDY

1. Project Title:	Replacement of the Headworks at Treatment Plant No. 2
2. Lead Agency Name and Address:	Orange County Sanitation District 10844 Ellis Avenue Fountain Valley, CA 92708
3. Contact Person and Phone Number:	Jim Herberg 714-593-7310
4. Project Location:	Huntington Beach, CA
5. Project Sponsor's Name and Address:	Orange County Sanitation District
6. General Plan Designation:	treatment plant
7. Zoning:	public facility
8. Description of Project:	Construction of a new headworks facility and associated odor control equipment.
9. Surrounding Land Uses and Setting:	Surrounding land uses include residential property and the Santa Ana River.

10. Other agencies whose approval is required:

City of Huntington Beach	encroachment permit and coastal development permit
SCAQMD	air emissions permit

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as Indicated by the checklist on the following pages:

☒ Aesthetics	☐ Agriculture Resources	☒ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Hazards & Hazardous Materials	☒ Hydrology / Water Quality	☐ Land Use / Planning
☐ Mineral Resources	☒ Noise	☐ Population / Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities / Service Systems	☐ Mandatory Findings of Significance	

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.

____________________	____________________
Signature	Date
____________________	____________________
Printed Name	For

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

I. AESTHETICS -- Would the project:

Issues (and Supporting Information Sources):

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

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 prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

Would the project:

Issues (and Supporting Information Sources):

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
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:				
Issues (and Supporting Information Sources):				
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☒	☐	☐	☐
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)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐
IV. BIOLOGICAL RESOURCES -- Would the project:				
Issues (and Supporting Information Sources):				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*

IV. BIOLOGICAL RESOURCES (Continued) -- Would the project:

Issues (and Supporting Information Sources):

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

V. CULTURAL RESOURCES -- Would the project:

Issues (and Supporting Information Sources):

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

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
VI. GEOLOGY AND SOILS -- Would the project:				
Issues (and Supporting Information Sources):				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☒	☐	☐
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?	☐	☒	☐	☐
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?	☐	☐	☐	☒
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
Issues (and Supporting Information Sources):				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
VII. HAZARDS AND HAZARDOUS MATERIALS (Continued) -- Would the project:				
Issues (and Supporting Information Sources):				
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
Issues (and Supporting Information Sources):				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐

VIII. HYDROLOGY AND WATER QUALITY (Continued) - Would the project:	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Issues (and Supporting Information Sources):				
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)?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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 housing 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?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
IX. LAND USE AND PLANNING -- Would the project:				
Issues (and Supporting Information Sources):				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural communities' conservation plan?	☐	☐	☐	☒
X. MINERAL RESOURCES -- Would the project:				
Issues (and Supporting Information Sources):				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
XI. NOISE -- Would the project result in:				
Issues (and Supporting Information Sources):				
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?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

XI. NOISE (Continued)-- Would the project result in:

Issues (and Supporting Information Sources):

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
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 of public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
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?	☐	☐	☐	☒

XII. POPULATION AND HOUSING -- Would the project:

Issues (and Supporting Information Sources):

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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XIII. PUBLIC SERVICES –

Issues (and Supporting Information Sources):

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?	☐	☐	☐	☒

XIII. PUBLIC SERVICES (Continued) –	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Issues (and Supporting Information Sources):				
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XIV. RECREATION –

Issues (and Supporting Information Sources):				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

XV. TRANSPORTATION / TRAFFIC -- Would the project:

Issues (and Supporting Information Sources):				
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)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
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?	☐	☐	☐	☒
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
XV. TRANSPORTATION / TRAFFIC (Continued) -- Would the project:				
Issues (and Supporting Information Sources):				
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒
XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
Issues (and Supporting Information Sources):				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVII. MANDATORY FINDINGS OF SIGNIFICANCE	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Issues (and Supporting Information Sources):				
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?	☐	☐	☐	☒
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)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

SECTION 3.0
DISCUSSION OF IMPACTS
AND MITIGATION MEASURES

I. AESTHETICS

A. Have a substantial adverse effect on a scenic vista?

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact

No scenic vistas as designated by the California Department of Transportation (Caltrans) under the California Scenic Highways Program[1] or state designated scenic highways[2] exist in Huntington Beach. No impacts are anticipated and no mitigation measures are required.

C. Substantially degrade the existing visual character or quality of the site and its surroundings?

Potentially Significant Impact

The project would include the construction of a large above-ground structure. The structure could modify the existing visual character of the project site or surrounding area. Architectural designs and landscape plans would be required to mitigate the potential impact.

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact

The project would be constructed within an industrial setting that is currently operating 24 hours per day. Nighttime lighting constructed for the project would be similar to existing conditions. The mature landscaping and visual obstructions currently block nighttime lighting from neighboring residential areas. Nighttime lighting would be similar to existing conditions and would not be considered a significant impact of the project.

II. AGRICULTURAL RESOURCES

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?

B. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

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?

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[1] Southern California Association of Governments, *Regional Transportation Plan*, 2001.

[2] *Ibid.*

No Impact

The project would not affect any farmland or agricultural activities. No impact would result from the project.

III. AIR QUALITY

A. Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan?

No Impact

The proposed project would be consistent with the Air Quality Management Plan (AQMP) prepared by the South Coast Air Quality Management District (SCAQMD). No impacts to the AQMP are anticipated.

B. Violate any air quality standard or contribute to an existing or projected air quality violation?
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)?
D. Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact

Construction-related activities would add air pollutants to the regional air basin which is already in violation of state and federal air quality standards. Construction emissions could exceed thresholds of significance.

E. Create objectionable odors affecting a substantial number of people?

Potentially Significant Impact

The project would replace an existing sewage headworks facility. The new facility would include upgraded odor control technologies. Nonetheless, odor from the demolition of sewage equipment could generate odors.

IV. BIOLOGICAL RESOURCES

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?
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?
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?

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?
E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
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?

No Impact

The proposed project would be located within previously developed areas. No biological resources would be affected by the project.

V. CULTURAL RESOURCES

A. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact

The project would not remove historic structures. No impact to historic resources would result.

B. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?
C. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
D. Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation Incorporation

Excavation activities could unearth previously unknown cultural artifacts. The District would implement mitigation measures identified in the PEIR to reduce this impact to a less than significant level.

VI. GEOLOGY AND SOILS

A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - **i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**
  - **ii) Strong seismic ground shaking?**
  - **iii) Seismic-related ground failure, including liquefaction?**
  - **iv) Landslides?**

B. Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact

The project site would not be located within an Alquist-Priolo Earthquake Fault Zone[3]. Seismic activity on any faults within the region could cause considerable ground shaking in the project area. The project would be designed to comply with building codes for the region. Impacts from seismic hazards would be considered less than significant.

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?

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?

Less than Significant with Mitigation Incorporation

The proposed project sites could be underlain by unstable or expansive soils. Implementation of mitigation measures identified in a site-specific geotechnical evaluation would be necessary to reduce this impact to less than significant levels.

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?

No Impact

The proposed project would not involve the use of septic tanks. The nature of the proposed project does not necessitate the need for septic tanks. Therefore, no impacts are anticipated.

VII. HAZARDS AND HAZARDOUS MATERIALS

A. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

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?

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

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?

Less than Significant with Mitigation Incorporation

The proposed project would increase the volume of chemicals stored at Treatment Plant No. 2. Compliance with OCSD hazardous materials handling and storage procedure would reduce the potential for splits. Excavation could encounter contaminated soils. In addition, demolition of

[3] California Division of Mines and Geology, Special Publication 42, 1997.

structures could require removal of lead-based paint and asbestos containing building materials. Implementation of mitigation measures to avoid these potential hazards would be required.

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?

No Impact

The project site is not located within the immediate vicinity of any airport or private airstrip. The nearest airport to the project site, John Wayne International Airport, is located over five miles southeast of the project site. The proposed project would not result in a safety hazard for the people working in the project area or visiting the project site.

The proposed project is not located adjacent to wildlands or near a substantial amount of dry brush that could expose people to wildfire risks. No impacts are anticipated.

VIII. HYDROLOGY AND WATER QUALITY

A. Violate any water quality standards or waste discharge requirements?

Potentially Significant Impact

During the connection of the new headworks, treatment capacity at Treatment Plant No. 2 would be diminished. During peak flow periods, influent may exceed the treatment capacity of the plant, which could result in decreased effluent quality. Degradation of effluent quality below permitted limits would be considered a significant impact of the project. The District would be required to divert flows to Reclamation Plant No. 1 during the connection phase to avoid degrading effluent quality.

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)?

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?

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?

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 housing 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?

No Impact

The project would not require dewatering following completion of construction. The proposed project would not deplete or interfere with potable water sources. No impacts to groundwater are anticipated.

The project would not alter the drainage patterns in the area. The project site is not located within an area designated as 100-year or 500-year flood plain.[4] Construction and operation activities associated with the proposed project would not subject people or structures to flooding, dam failure, tsunami, mudflow, or seiche wave impacts. No impacts are anticipated.

IX. LAND USE AND PLANNING

A. Physically divide an established community?

No Impact

The proposed project would be constructed entirely within the OCSD treatment plant property and would not physically divide an established community.

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?

No Impact

The project would be replacing an existing facility for a new one of similar use. No changes to land use designations would be necessary.

C. Conflict with any applicable habitat conservation plan or natural communities' conservation plan?

[4] U.S. Federal Emergency Management Agency, *Federal Emergency Management Agency National Flood Insurance Program Map No. 06059C0054F. Revised January 3, 1997.* Washington D.C.: U.S. Federal Emergency Management Agency.

No Impact

The proposed project would not conflict with any habitat conservation plan or natural communities' conservation plan.

X. MINERAL RESOURCES

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?

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?

No Impact

The proposed project would not result in the loss of availability of any mineral resource that would be of future value[5]; therefore, there is no potential for impacts.

XI. NOISE

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?

B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact

Construction activities associated with the project would generate short-term noise. Local sensitive receptors could be affected by the temporary construction noise. The significance of the impact would depend on construction methods, duration, and proximity of sensitive receptors.

C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact

The project would not subject people to substantial permanent increases in ambient noise levels in the project vicinity above levels existing without the project.

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 of public use airport, would the project expose people residing or working in the project area to excessive noise levels?

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?

[5] Orange County General Plan, Resources Element, 1995.

No Impact

The project would not subject people to excessive noise or be located within two miles of an airport. No impact is anticipated.

XII. POPULATION AND HOUSING

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)?
B. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
C. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

No Impact

The proposed project would replace an existing facility with a new facility for a similar use. The proposed project would not result in displacement of a substantial number of people. The project would not induce growth in the area. No impact is anticipated.

XIII. PUBLIC SERVICES

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?
Police protection?
Schools?
Parks?
Other public facilities?

No Impact

The project would replace an existing facility entirely within OCSD's treatment plant property. No impacts to fire or police services, schools or other public facilities are anticipated.

XIV. RECREATION

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?
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?

No Impact

The proposed project would not increase demand for neighborhood or regional parks. No negative impacts to recreation are anticipated.

XV. TRANSPORTATION / TRAFFIC

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)?

B. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less than Significant Impact

Both construction and operation of the project could result in a slight increase in traffic trips that could alter level of service at local intersections. Traffic control plans would need to be approved by the city of Huntington Beach prior to beginning construction.

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?

D. Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

E. Result in inadequate emergency access?

F. Result in inadequate parking capacity?

G. Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact

The project would not alter air traffic patterns. The project would not alter the current roadway designs or affect emergency access. The project would not reduce available parking or conflict with adopted City policies supporting alternative transportation. No impact is expected.

XVI. UTILITIES AND SERVICE SYSTEMS

A. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

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?

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?

D. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

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?

F. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

G. Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact

The project would not require new water supplies or increased capacity at the treatment plant, or increase solid waste capacity needs. Therefore, the project would not adversely impact regional utilities.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

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?

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)?

No Impact

The project would replace an existing pump station at a new location. The new location does not support wildlife. No significant cultural resources are known to exist at the new location. No impact is expected.

C. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than significant Impact

The project enhances the reliability of existing infrastructure. Construction impacts to noise, air quality and traffic could affect nearby residents.

APPENDIX E

AIR EMISSIONS WORKSHEETS

ESTIMATED EMISSIONS FROM EXCAVATION

Construction Imports Inputs	
Total days Allowed for Project	150
Total Days Allowed for Construction (Days)	150
Total Site Acres (Acres)	0.00
Number of Employees	45
Average Trip Length One Way POV (Miles)	30
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul Trucks	76
Average Trip Length One Way Haul Trucks (Miles)	18
Total VMT Water Trucks per day (Miles)	2
Total VMT Dump Trucks per day (Miles)	20

Total Number of Each Equipment used for Construction

# of equipment	5	2	1	4	2	2
Hours per Day	8	8	8	8	8	8
Days in Operation	150	150	150	150	150	150
Miles Per Hour	1					
	scraper	forklift	compactor	crane	welder	backhoe
	diesel	diesel	diesel	diesel	diesel	diesel

# of equipment	2	2	2	1	2	0
Hours per Day	8	8	8	8	8	0
Days in Operation	150	150	150	150	150	0
Miles Per Hour	1					
	loaders	crawler dozer	drill rig	grader	pump	trencher
	diesel	diesel	diesel	diesel	diesel	diesel

Assumptions Used in EMFAC2002

% LDA	66.00%	Daily VMT LDA & LDT	2722.000
%LDT	34.00%	Daily VMT Haul Truck	2736
Season	summer		

EMFAC2002 Inputs

	LDA	LDT	HDD
	Grams/Mile	Grams/Mile	Grams/Mile
Carbon Monoxide (CO)	3.02	3.6	2.9
Reactive Organic Compounds (ROC)	0.19	0.2	0.65
Nitrogen Oxides (NOx)	0.25	0.3	15.97
Particulates (PM10)	0.01	0.01	0.26

Source: EMFAC2002

Vehicle Exhaust Emissions from POV, Excavation

Construction Workers POV Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	3.2172	19.29
Reactive Organic Compounds (ROC)	0.1934	1.16
Nitrogen Oxides (NOx)	0.267	1.60
Particulates (PM10)	0.01	0.06

Source: Emission Factors From EMFAC2002

Haul Truck Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	2.9	17.48
Reactive Organic Compounds (ROC)	0.65	3.92
Nitrogen Oxides (NOx)	15.97	96.24
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.26	1.57

Source: EMFAC2002

Construction Equipment Emissions	scraper 250 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	compactor 50 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	backhoe 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.34	0.24	0.05	0.22	0.55	0.11	35.4
Reactive Organic Compounds (ROC)	0.18	0.13	0.03	0.11	0.1	0.06	15.6
Nitrogen Oxides (NOx)	3.13	2.24	0.49	2.01	0.9	1.01	259.8
Particulates (PM10)	0.08	0.05	0.01	0.05	0.05	0.02	6.8

	loaders 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	drill rig 175 hp diesel lbs/hour	grader 175 hp diesel lbs/hour	pump 50 hp diesel lbs/hour	trencher 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.23	0.31	0.22	0.24	0.05	0.23	13.2
Reactive Organic Compounds (ROC)	0.12	0.16	0.12	0.12	0.03	0.12	7.8
Nitrogen Oxides (NOx)	2.07	2.79	2.02	2.18	0.49	2.06	135.4
Particulates (PM10)	0.05	0.07	0.05	0.05	0.01	0.05	3.3

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from construction						
Air Pollutant	Emission Factor		Unmitigated Emissions		Mitigation Efficiency	Est. Emissions (lbs/day)
Particulates (PM10) Loaders*	0.000035	lb/ton	0.19992	lb/day	50%	0.1
Particulates (PM10) Bulldozer**	2.4	lb/hr	38.4	lb/day	50%	19
Particulates (PM10) Scraper***	4.3	lb/vmt	172	lb/day	50%	86
Particulates (PM10) Backhoe****	0.000035	lb/ton	0.09632	lb/day	50%	0.0
Particulates (PM10) Trencher*****	0.000035	lb/ton	0	lb/day	50%	0.0
Particulates (PM10) POV & Haul Truck	0.42	gm/mile				5.05
					Total Particulates	**110**

* Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

** Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

*** Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

**** Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

***** Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

Total Air Emissions from Excavation Including POV, Fugitive Dust, and			
Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	**85.41**	550.00	NO
Reactive Organic Compounds (ROC)	**28.52**	75.00	NO
Nitrogen Oxides (NOx)	**493.04**	100.00	YES
Particulates (PM10)	**122.10**	150.00	NO

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

ESTIMATED EMISSIONS FROM CONSTRUCTION

Construction Imports Inputs

Total days Allowed for Project	1050
Total Days Allowed for Construction (Days)	1050
Total Site Acres (Acres)	0.00
Number of Employees	60
Average Trip Length One Way POV (Miles)	30
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul Trucks	10
Average Trip Length One Way Haul Trucks (Miles)	15
Total VMT Water Trucks per day (Miles)	2
Total VMT Dump Trucks per day (Miles)	5

Total Number of Each Equipment used for Construction

	scraper diesel	forklift diesel	compressor diesel	boom truck diesel	welder diesel	backhoe diesel
# of equipment	0	2	3	0	0	0
Hours per Day	0	8	8	0	0	0
Days in Operation	0	1050	1050	0	0	0
Miles Per Hour	1					

	loaders diesel	crawler dozer diesel	crane diesel	150 ton crane diesel	pump diesel	trencher diesel
# of equipment	0	0	2	2	1	0
Hours per Day	0	0	8	8	8	0
Days in Operation	0	0	1050	1050	1050	0
Miles Per Hour	1					

Assumptions Used in EMFAC2002

% LDA	66.00%	Daily VMT LDA & LDT	3607.000
%LDT	34.00%	Daily VMT Haul Truck	300
Season	summer		

EMFAC2002 Inputs

	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	3.02	3.6	2.9
Reactive Organic Compounds (ROC)	0.19	0.2	0.65
Nitrogen Oxides (NOx)	0.25	0.3	15.97
Particulates (PM10)	0.01	0.01	0.26

Source: EMFAC2002

Vehicle Exhaust Emissions from POV, Construction

Construction Workers POV Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	3.2172	25.56
Reactive Organic Compounds (ROC)	0.1934	1.54
Nitrogen Oxides (NOx)	0.267	2.12
Particulates (PM10)	0.01	0.08

Source: Emission Factors From EMFAC2002

Haul Truck Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	2.9	1.92
Reactive Organic Compounds (ROC)	0.65	0.43
Nitrogen Oxides (NOx)	15.97	10.55
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.26	0.17

Source: EMFAC2002

Construction Equipment Emissions

	scraper 500 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	compressor 50 hp diesel lbs/hour	boom truck 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	backhoe 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.62	0.24	0.55	0.2	0.55	0.11	17.0
Reactive Organic Compounds (ROC)	0.24	0.13	0.1	0.11	0.1	0.06	4.5
Nitrogen Oxides (NOx)	4.82	2.24	0.9	1.85	0.9	1.01	57.4
Particulates (PM10)	0.10	0.05	0.05	0.05	0.05	0.02	2.0

	loaders 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	crane 500 hp diesel lbs/hour	pump 505 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.23	0.31	0.22	0.58	0.05	0.22	6.2
Reactive Organic Compounds (ROC)	0.12	0.16	0.11	0.22	0.03	0.11	5.5
Nitrogen Oxides (NOx)	2.07	2.79	2.01	4.52	0.49	2.01	108.4
Particulates (PM10)	0.05	0.07	0.05	0.1	0.01	0.05	2.5

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from construction							
Air Pollutant	Emission Factor		Unmitigated Emissions		Mitigation Efficiency		Est. Emissions (lbs/day)
Particulates (PM10) Loaders*	0.000035	lb/ton	0	lb/day	50%		0.0
Particulates (PM10) Bulldozer**	2.4	lb/hr	0	lb/day	50%		0
Particulates (PM10) Scraper***	4.3	lb/vmt	0	lb/day	50%		0
Particulates (PM10) Backhoe****	0.000035	lb/ton	0	lb/day	50%		0.0
Particulates (PM10) Trencher*****	0.000035	lb/ton	0	lb/day	50%		0.0
Particulates (PM10) POV & Haul Truck	0.42	gm/mile					3.61
				Total Particulates			**4**

* Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

** Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

*** Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

**** Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

***** Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

*Source: ARB Recommended

Total Air Emissions from Construction Including POV, Fugitive Dust, and			
Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	**50.76**	550.00	NO
Reactive Organic Compounds (ROC)	**11.97**	75.00	NO
Nitrogen Oxides (NOx)	**178.51**	100.00	YES
Particulates (PM10)	**8.35**	150.00	NO

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

ESTIMATED EMISSIONS FROM CONNECTION

Construction Imports Inputs

Total days Allowed for Project	430
Total Days Allowed for Construction (Days)	430
Total Site Acres (Acres)	0.00
Number of Employees	60
Average Trip Length One Way POV (Miles)	30
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul Trucks	3
Average Trip Length One Way Haul Trucks (Miles)	15
Total VMT Water Trucks per day (Miles)	2
Total VMT Dump Trucks per day (Miles)	10

Total Number of Each Equipment used for Construction

	scraper diesel	forklift diesel	drill rig diesel	boom truck diesel	welder diesel	backhoe diesel
# of equipment	0	1	1	0	2	2
Hours per Day	0	8	8	0	8	8
Days in Operation	0	430	430	0	430	430
Miles Per Hour	0	0	0	0	0	0

	loaders diesel	crawler dozer diesel	compactor diesel	roller diesel	paver diesel	crane diesel
# of equipment	3	2	4	0	0	2
Hours per Day	8	8	8	0	0	8
Days in Operation	430	430	430	0	0	430
Miles Per Hour	1	0	0	0	0	0

Assumptions Used in EMFAC2002

% LDA	66.00%	Daily VMT LDA & LDT	3612.000
%LDT	34.00%	Daily VMT Haul Truck	90
Season	summer		

EMFAC2002 Inputs

	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	3.02	3.6	2.9
Reactive Organic Compounds (ROC)	0.19	0.2	0.65
Nitrogen Oxides (NOx)	0.25	0.3	15.97
Particulates (PM10)	0.01	0.01	0.26

Source: EMFAC2002

Vehicle Exhaust Emissions from POV, Connection

Construction Workers POV Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	3.2172	25.60
Reactive Organic Compounds (ROC)	0.1934	1.54
Nitrogen Oxides (NOx)	0.267	2.12
Particulates (PM10)	0.01	0.08

Source: Emission Factors From EMFAC2002

Haul Truck Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	2.9	0.57
Reactive Organic Compounds (ROC)	0.65	0.13
Nitrogen Oxides (NOx)	15.97	3.17
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.26	0.05

Source: EMFAC2002

Construction Equipment Emissions

	scraper 500 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	drill rig 175 hp diesel lbs/hour	boom truck 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	backhoe 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.62	0.24	0.22	0.2	0.55	0.11	14.2
Reactive Organic Compounds (ROC)	0.24	0.13	0.12	0.11	0.1	0.06	4.6
Nitrogen Oxides (NOx)	4.82	2.24	2.02	1.85	0.9	1.01	64.6
Particulates (PM10)	0.10	0.05	0.05	0.05	0.05	0.02	1.9

	loaders 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	compactor 50 hp diesel lbs/hour	roller 120 hp diesel lbs/hour	paver 175 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.23	0.31	0.05	0.12	0.24	0.22	15.6
Reactive Organic Compounds (ROC)	0.12	0.16	0.03	0.06	0.13	0.11	8.2
Nitrogen Oxides (NOx)	2.07	2.79	0.49	1.13	2.22	2.01	142.2
Particulates (PM10)	0.05	0.07	0.01	0.03	0.05	0.05	3.4

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from connection						
Air Pollutant	Emission Factor		Unmitigated Emissions		Mitigation Efficiency	Est. Emissions (lbs/day)
Particulates (PM10) Loaders*	0.000035	lb/ton	0.29988	lb/day	50%	0.1
Particulates (PM10) Bulldozer**	2.4	lb/hr	38.4	lb/day	50%	19
Particulates (PM10) Scraper***	4.3	lb/vmt	0	lb/day	50%	0
Particulates (PM10) Backhoe****	0.000035	lb/ton	0.09632	lb/day	50%	0.0
Particulates (PM10) Trencher*****	0.000035	lb/ton	0.09632	lb/day	50%	0.0
Particulates (PM10) POV & Haul Truck	0.42	gm/mile				3.42
					Total Particulates	**23**

* Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

** Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

*** Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

**** Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

***** Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

*Source: ARB Recommended

Total Air Emissions from Construction Including POV, Fugitive Dust, and Construction Equipment			
Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	**56.01**	550.00	NO
Reactive Organic Compounds (ROC)	**14.39**	75.00	NO
Nitrogen Oxides (NOx)	**212.09**	100.00	YES
Particulates (PM10)	**28.36**	150.00	NO

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

ESTIMATED INCREASE IN HAUL TRUCK EMISSIONSFROM OPERATIONS

Vehicle Inputs	
Number of Workers	
Average Trip Distance (One Way/ Miles)	
Number of Biosolid Truck Trips Per Day	
Average Trip Distance (One Way/ Miles)	
Number of Grit/Screening Truck Trips Per Day	1
Average Trip Distance (One Way/ Miles)	35
Number of maintenance trips Per Day	
Average Trip Distance (One Way/ Miles)	
Number of septage disposal trips Per Day	
Average Trip Distance (One Way/ Miles)	
Number of Delivery Trucks	
Average Trip Distance (One Way/ Miles)	
Total Trips, POV (One Way)	0
Total Trips Truck (One Way)	0

Assumptions Used in EMFAC2002 For Automobiles			
% LDA	70.00%	Daily VMT LDA & LDT	0
%LDT	30.00%	Daily VMT Haul Truck	70

EMFAC2002 Inputs	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	3.02	3.6	2.9
(ROC)	0.19	0.2	0.65
Nitrogen Oxides (NOx)	0.25	0.3	15.97
Sulfur Oxides (SOx)	NA	NA	NA
Particulates (PM10)	0.01	0.01	0.26

Source: EMFAC2002

Truck Emissions	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	2.9	0.45
Reactive Organic Compounds (ROC)	0.65	0.10
Nitrogen Oxides (NOx)	15.97	2.46
Sulfur Oxides (SOx) *	0	0.00
Particulates (PM10)	0.26	0.04

*Source: EMFAC2002

*Source: Table A9-5-L SCAQMD CEQA Handbook

POV Emissions		
	EMFAC Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	3.19	0.00
Reactive Organic Compounds (ROC)	0.19	0.00
Nitrogen Oxides (NOx)	0.27	0.00
Sulfur Oxides (SOx) *	0.05	0.00
Particulates (PM10)	0.01	0.00

Source: Emission Factors From EMFAC2002

*Source: Table A9-5-L SCAQMD CEQA Handbook

Fugitive Dust Emissions from project-related trips on local			
	PM10 grams/VMT		lbs/day
Local Streets	0.42		0.1

Source: Air Resources Board Recommended

Total Operational Emissions					
Air Pollutant	Mobile (lbs/day)		Total (lbs/day)	SCAQMD Thresholds lb/day	Significant?
Carbon Monoxide (CO)	0.45		0.45	550	NO
Reactive Organic Compounds (RO	0.10		0.10	55	NO
Nitrogen Oxides (NOx)	2.46		2.46	55	NO
Sulfur Oxides (SOx)	0.00		0.00	150	NO
Particulates (PM10)	0.11		0.11	150	NO

APPENDIX F

OPERATIONAL PLAN

Operational Plan

Implementation of the July 17, 2002
Board of Directors Policy
To Achieve Compliance with the
Clean Water Act
Secondary Treatment Standard

September 16, 2002
Revised September 3, 2003

Prepared By:

Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, California 92708-7018

With Assistance From:

Kris Lindstrom, President
K. P. Lindstrom, Inc.

FULL DOCUMENT AVAILABLE AND ON FILE AT OCSD ADMINISTRATIVE OFFICES

APPENDIX G

EFFLUENT QUALITY ESTIMATE METHODS

Average Daily Flows

2007 Average Daily Flows **Nitrification >** **Yes**

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
112.4	15.6	128 mgd	128 mgd	12 mgd	94 mgd	34 mgd	190 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	78.8 mg/l
	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	38.3 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.0 mg/l
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
159.6	144	144 mgd	144 mgd		85 mgd	59 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity		
		340 mgd	144 mgd		90 mgd		

2008

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
113.6	18.4	132 mgd	132 mgd	12 mgd	95.88 mgd	36.12 mgd	192.12 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	78.7 mg/l
	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	38.3 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.0 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
162.4	144	144 mgd	144 mgd		86.275 mgd	57.725 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	144 mgd		90 mgd		

2009

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
114.8	21.2	136 mgd	136 mgd	12 mgd	97.7976 mgd	38.2024 mgd	194.2024 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	78.5 mg/l
	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	38.3 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.0 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
165.2	144	144 mgd	144 mgd		87.56913 mgd	56.43088 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	144 mgd		90 mgd		

Average Daily Flows Ellis Only

2007	Average Daily Flows	Nitrification >	Yes						
Tributary	Ellis	Influent	Primary Effluent	GWRS	Secondary Effluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
112.4	15.6	128 mgd	128 mgd	12 mgd	108.4 mgd	19.6 mgd	180 mgd	175.6	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	83.4 mg/l	116.9111	
	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	39.4 mg/l	54.41111	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.6 mg/l	32.30722	
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
159.6	144	144 mgd	144 mgd		68.5 mgd	75.5 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity				
		340 mgd	90 mgd		90 mgd				
			1,248 New SLR	gdp/ft^2				1.6	216
			780 SP Range	gdp/ft^2					
2008									96
Tributary	Ellis	Influent	Primary Effluent	GWRS	Secondary Effluent	Primary Effluent to Ocean	Final Effluent		43.2
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
113.6	15.6	129.2 mgd	129.2 mgd	12 mgd	108.942 mgd	20.258 mgd	184 mgd	179.058	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	83.6 mg/l	118.8086	
	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	39.5 mg/l	55.26322	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.6 mg/l	32.60997	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
162.4	146.8	146.8 mgd	146.8 mgd		69.5275 mgd	77.2725 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	90 mgd		90 mgd				
			1,272 New SLR	gdp/ft^2				1.631111	220.2
			450-1600 SP Range	gdp/ft^2					
2009									97.86667
Tributary	Ellis	Influent	Primary Effluent	GWRS	Secondary Effluent	Primary Effluent to Ocean	Final Effluent		44.04
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
114.8	15.6	130.4 mgd	130.4 mgd	12 mgd	109.4867 mgd	20.91329 mgd	188 mgd	182.5133	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	83.7 mg/l	120.6859	
	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	39.5 mg/l	56.10686	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.5 mg/l	32.91365	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
165.2	149.6	149.6 mgd	149.6 mgd		70.57041 mgd	79.02959 mgd	0.375375		
mgd	mgd	BOD	BOD		BOD	BOD			
		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	90 mgd		90 mgd				
			1,297 New SLR	gdp/ft^2				1.662222	224.4
			450-1600 SP Range	gdp/ft^2					99.73333
									44.88

Average Daily Flows P2-66 and Ellis

2007	Average Daily Flows	Nitrification >	Yes						
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
112.4	58	170.4 mgd	170.4 mgd	12 mgd	108.4 mgd	62 mgd	180 mgd	175.6	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	95.1 mg/l	99.59644	
	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	43.5 mg/l	45.58607	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.8 mg/l	26.70929	
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
159.6	101.6	101.6 mgd	101.6 mgd		50.2 mgd	51.4 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity				
		340 mgd	90 mgd		90 mgd				
			881 New SLR	gdp/ft^2				1.128889	152.4
			780 SP Range	gdp/ft^2					

2008									67.73333
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		30.48
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
113.6	58	171.6 mgd	171.6 mgd	12 mgd	108.942 mgd	62.658 mgd	184 mgd	179.058	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	95.0 mg/l	101.4704	
	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	43.7 mg/l	46.39022	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.8 mg/l	26.93647	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
162.4	104.4	104.4 mgd	104.4 mgd		50.2 mgd	54.2 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	90 mgd		90 mgd				
			905 New SLR	gdp/ft^2				1.16	156.6
			450-1600 SP Range	gdp/ft^2					

2009									69.6
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		31.32
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
114.8	58	172.8 mgd	172.8 mgd	12 mgd	109.4867 mgd	63.31329 mgd	188 mgd	182.5133	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	96.1 mg/l	103.3877	
	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	43.9 mg/l	47.21488	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l	27.17861	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
165.2	107.2	107.2 mgd	107.2 mgd		50.2 mgd	57 mgd	0.267021		
mgd	mgd	BOD	BOD		BOD	BOD			
		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	90 mgd		90 mgd				
			929 New SLR	gdp/ft^2				1.191111	160.8
			450-1600 SP Range	gdp/ft^2					71.46667
									32.16

Peak Average Daily Flows

2007	**Average Daily Peak Flows**	**Nitrification >**	**Yes**				
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
142.748	15.6	158.348 mgd	158.348 mgd	12 mgd	110 mgd	48.348 mgd	251.844 mgd
mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	87.6 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	41.5 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
201.096	185.496	185.496 mgd	185.496 mgd		90 mgd	95.496 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity		
		340 mgd	205.92 mgd		90 mgd		
				gdp/ft^2			
2008				gdp/ft^2			

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
144.272	18.4	162.672 mgd	162.672 mgd	12 mgd	110 mgd	52.672 mgd	256.896 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	88.5 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	41.9 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
204.624	186.224	186.224 mgd	186.224 mgd		90 mgd	96.224 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	205.92 mgd		90 mgd		
				gdp/ft^2			
2009				gdp/ft^2			

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
145.796	21.2	166.996 mgd	166.996 mgd	12 mgd	110 mgd	56.996 mgd	261.948 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	89.4 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	42.2 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
208.152	186.952	186.952 mgd	186.952 mgd		90 mgd	96.952 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	205.92 mgd		90 mgd		
				gdp/ft^2			
				gdp/ft^2			

Peak Average Daily Flows Ellis Only

2007 Average Daily Peak Flows Nitrification > Yes

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
142.748	15.6	158.348 mgd	158.348 mgd	12 mgd	110 mgd	48.348 mgd	251.844 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	87.6 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	41.5 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
201.096	185.496	185.496 mgd	185.496 mgd		90 mgd	95.496 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity		
		340 mgd	205.92 mgd		90 mgd		
				gdp/ft^2			
				gdp/ft^2			

2008

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
144.272	18.4	162.672 mgd	162.672 mgd	12 mgd	110 mgd	52.672 mgd	256.896 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	88.5 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	41.9 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
204.624	186.224	186.224 mgd	186.224 mgd		90 mgd	96.224 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	205.92 mgd		90 mgd		
				gdp/ft^2			
				gdp/ft^2			

2009

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
145.796	21.2	166.996 mgd	166.996 mgd	12 mgd	110 mgd	56.996 mgd	261.948 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	89.4 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	42.2 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.7 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
208.152	186.952	186.952 mgd	186.952 mgd		90 mgd	96.952 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	205.92 mgd		90 mgd		
				gdp/ft^2			
				gdp/ft^2			

Peak Average Daily Flows P2-66 and Ellis

2007	Average Daily Peak Flows	Nitrification >	Yes						
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
142.748	58	200.748 mgd	200.748 mgd	12 mgd	110 mgd	90.748 mgd	251.844 mgd	245.844	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	99.0 mg/l	102.6331	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	45.5 mg/l	47.21181	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.9 mg/l	26.61372	
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
201.096	143.096	143.096 mgd	143.096 mgd		65 mgd	78.096 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
1029	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity				
780		340 mgd	130.32 mgd		90 mgd				
			1,130 New SLR	gdp/ft^2				1.098036	148.2348
			1029 SP Range	gdp/ft^2					
2008									65.88214
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		29.64696
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
144.272	58	202.272 mgd	202.272 mgd	12 mgd	110 mgd	92.272 mgd	256.896 mgd	250.896	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	99.7 mg/l	104.6126	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	45.8 mg/l	48.06017	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.9 mg/l	26.88991	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
204.624	146.624	146.624 mgd	146.624 mgd		65 mgd	81.624 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	130.32 mgd		90 mgd				
			1,158 New SLR	gdp/ft^2				1.125107	151.8895
			450-1600 SP Range	gdp/ft^2					
2009									67.50645
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		30.3779
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
145.796	58	203.796 mgd	203.796 mgd	12 mgd	110 mgd	93.796 mgd	261.948 mgd	255.948	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
1.27	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	100.4 mg/l	106.6141	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	46.1 mg/l	48.91956	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.9 mg/l	27.17513	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
208.152	150.152	150.152 mgd	150.152 mgd		65 mgd	85.152 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
1.26		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	130.32 mgd		90 mgd				
			1,186 New SLR	gdp/ft^2				1.152179	155.5442
			450-1600 SP Range	gdp/ft^2					69.13076
									31.10884

Wet Weather Peak Flows

2007	Wet Weather Peak Flows		Nitrification >	Yes				
Tributary	Ellis		Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions		Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow		Flow	Flow	Flow	Flow	Flow	
247.28	58		305.28 mgd	305.28 mgd	0 mgd	110 mgd	195.28 mgd	460.08 mgd
mgd	mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD
2.2	Timing	0%	270 mg/l	135 mg/l	0 mgd	20 mg/l	135 mg/l	94.5 mg/l
Factor	Storm	Reduction	TSS	TSS	BOD	TSS	TSS	TSS
		TSS	260 mg/l	60 mg/l	0 mg/l	20 mg/l	60 mg/l	53.2 mg/l
		45%	Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		Reduction	27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.4 mg/l
	Capacity	BOD	Total Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58		410 mgd	422 mgd	0 mg/l	110 mgd		
	mgd				GWRS Production			
Peak wet weather flow quality based on data from Michelle.					0 mgd			
Plant No.2	Minus		Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions		Flow	Flow		Flow	Flow	
316.8	258.8		258.8 mgd	258.8 mgd		70 mgd	188.8 mgd	
mgd	mgd		BOD	BOD		BOD	BOD	
2.2		0%	270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l	
Factor		Reduction	TSS	TSS		TSS	TSS	
		TSS	260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		45%	Ammonia	Ammonia		Ammonia	Ammonia	
Assumed SLR		Reduction	27 mg/l	27 mg/l		25 mg/l	27 mg/l	
1716	gdp/ft^2	BOD	Total Capacity	Rated Capacity		Rated Capacity		
			340 mgd	316.8 mgd		90 mgd		
					gdp/ft^2			
					gdp/ft^2			

2008								
Tributary	Ellis		Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions		Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow		Flow	Flow	Flow	Flow	Flow	
249.92	58		307.92 mgd	307.92 mgd	12 mgd	110 mgd	197.92 mgd	474.72 mgd
mgd	mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD
2.2	Timing		270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	92.3 mg/l
Factor	Storm		TSS	TSS	BOD	TSS	TSS	TSS
			260 mg/l	60 mg/l	0 mg/l	20 mg/l	60 mg/l	51.9 mg/l
			Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
			27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.4 mg/l
	Capacity		Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58		410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd				GWRS Production			
					70 mgd			
Plant No.2	Minus		Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions		Flow	Flow		Flow	Flow	
316.8	258.8		258.8 mgd	258.8 mgd		70 mgd	188.8 mgd	
mgd	mgd		BOD	BOD		BOD	BOD	
2.2			270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l	
Factor			TSS	TSS		TSS	TSS	
			260 mg/l	60 mg/l		20 mg/l	60 mg/l	
			Ammonia	Ammonia		Ammonia	Ammonia	
			27 mg/l	27 mg/l		25 mg/l	27 mg/l	
			Capacity	Rated Capacity		Rated Capacity		
			340 mgd	316.8 mgd		90 mgd		
					gdp/ft^2			
					gdp/ft^2			

2009								
Tributary	Ellis		Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions		Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow		Flow	Flow	Flow	Flow	Flow	
252.56	58		310.56 mgd	310.56 mgd	12 mgd	110 mgd	200.56 mgd	477.36 mgd
mgd	mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD
2.2	Timing		270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	92.5 mg/l
Factor	Storm		TSS	TSS	BOD	TSS	TSS	TSS
			260 mg/l	60 mg/l	0 mg/l	20 mg/l	60 mg/l	51.9 mg/l
			Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
			27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.4 mg/l
	Capacity		Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58		410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd				GWRS Production			
					70 mgd			
Plant No.2	Minus		Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions		Flow	Flow		Flow	Flow	
316.8	258.8		258.8 mgd	258.8 mgd		70 mgd	188.8 mgd	
mgd	mgd		BOD	BOD		BOD	BOD	
2.2			270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l	
Factor			TSS	TSS		TSS	TSS	
			260 mg/l	60 mg/l		20 mg/l	60 mg/l	
			Ammonia	Ammonia		Ammonia	Ammonia	
			27 mg/l	27 mg/l		25 mg/l	27 mg/l	
			Capacity	Rated Capacity		Rated Capacity		
			340 mgd	316.8 mgd		90 mgd		
					gdp/ft^2			
					gdp/ft^2			

Wet - Weather Peak Flows - Ellis Only

2007	**Wet Weather Peak Flows**	**Nitrification >**	**Yes**						
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
247.28	35	282.28 mgd	282.28 mgd	12 mgd	110 mgd	172.28 mgd	506.4 mgd	500.4	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
2.2	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	88.0 mg/l	113.9198	
Factor	Storm	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	50.8 mg/l	69.79647	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.3 mg/l	34.86813	
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
351.12	316.12	316.12 mgd	316.12 mgd		90 mgd	226.12 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
2.2		270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
1716	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity				
		340 mgd	184.8 mgd		90 mgd				
			2,935 New SLR	gdp/ft^2				1.710606	141.125
			450-1600 SP Range	gdp/ft^2					
2008									102.6364
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		46.18636
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
249.92	41	290.92 mgd	290.92 mgd	12 mgd	110 mgd	180.92 mgd	515.2 mgd	509.2	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
2.2	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	88.8 mg/l	114.3131	
Factor	Storm	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	51.0 mg/l	69.6652	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.4 mg/l	34.74996	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
357.28	316.28	316.28 mgd	316.28 mgd		90 mgd	226.28 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
2.2		270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	184.8 mgd		90 mgd				
			2,937 New SLR	gdp/ft^2				1.711472	141.1964
			450-1600 SP Range	gdp/ft^2					
2009									102.6883
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		46.20974
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
252.56	47	299.56 mgd	299.56 mgd	12 mgd	110 mgd	189.56 mgd	524 mgd	518	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
2.2	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	89.5 mg/l	114.6933	
Factor	Storm	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	51.1 mg/l	69.53837	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	26.4 mg/l	34.63578	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
363.44	316.44	316.44 mgd	316.44 mgd		90 mgd	226.44 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
2.2		270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	184.8 mgd		90 mgd				
			2,938 New SLR	gdp/ft^2				1.712338	141.2679
			450-1600 SP Range	gdp/ft^2					102.7403
									46.23312

Wet Weather Peak Flows P2-66 and Ellis - No GWRS (Offline)

2007	**Wet Weather Peak Flows**		**Nitrification >**	**Yes**						
Tributary	Ellis		Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions		Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow		Flow	Flow	Flow	Flow	Flow			
247.28	58	83	388.28 mgd	388.28 mgd	12 mgd	110 mgd	278.28 mgd	610.4 mgd	500.4	
mgd	mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD		
2.2	Timing		270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	84.2 mg/l	86.55235	
Factor	Storm		TSS	TSS	BOD	TSS	TSS	TSS		
			260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	43.5 mg/l	45.30782	
			Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
			27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	21.9 mg/l	22.73452	
	Capacity		Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58		410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd				GWRS Production					
					70 mgd					
Plant No.2	Minus		Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions		Flow	Flow		Flow	Flow			
351.12	293.12		210.12 mgd	210.12 mgd		70 mgd	140.12 mgd			
mgd	mgd		BOD	BOD		BOD	BOD			
2.2			270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l			
Factor			TSS	TSS		TSS	TSS			
			260 mg/l	60 mg/l		20 mg/l	60 mg/l			
			Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR			27 mg/l	27 mg/l		25 mg/l	27 mg/l			
1716	gdp/ft^2		Total Capacity	Rated Capacity		Rated Capacity				
			340 mgd	184.8 mgd		90 mgd				
				1,951 New SLR	gdp/ft^2				1.137013	93.80357
				450-1600 SP Range	gdp/ft^2					
2008										68.22078
Tributary	Ellis		Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		30.69935
Plant No.1	Diversions		Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	SARI	Flow	Flow	Flow	Flow	Flow			
249.92	58	83	390.92 mgd	390.92 mgd	12 mgd	110 mgd	280.92 mgd	619.2 mgd	509.2	
mgd	mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD		
2.2	Timing		270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	84.4 mg/l	87.48071	
Factor	Storm		TSS	TSS	BOD	TSS	TSS	TSS		
		332.92	260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	43.7 mg/l	46.07089	
			Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
			27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	22.0 mg/l	23.04456	
	Capacity		Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58		410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd				GWRS Production					
					70 mgd					
Plant No.2	Minus		Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions		Flow	Flow		Flow	Flow			
357.28	299.28		216.28 mgd	216.28 mgd		70 mgd	146.28 mgd			
mgd	mgd		BOD	BOD		BOD	BOD			
2.2			270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l			
Factor			TSS	TSS		TSS	TSS			
			260 mg/l	60 mg/l		20 mg/l	60 mg/l			
			Ammonia	Ammonia		Ammonia	Ammonia			
			27 mg/l	27 mg/l		25 mg/l	27 mg/l			
			Capacity	Rated Capacity	216	Rated Capacity				
			340 mgd	184.8 mgd		90 mgd				
				2,008 New SLR	gdp/ft^2				1.170346	96.55357
				450-1600 SP Range	gdp/ft^2					
2009										70.22078
Tributary	Ellis		Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		31.59935
Plant No.1	Diversions		Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow		Flow	Flow	Flow	Flow	Flow			
252.56	58	83	393.56 mgd	393.56 mgd	12 mgd	110 mgd	283.56 mgd	628 mgd	518	
mgd	mgd		BOD	BOD	Brine Reject	BOD	BOD	BOD		
2.2	Timing		270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	84.5 mg/l	88.437	
Factor	Storm		TSS	TSS	BOD	TSS	TSS	TSS		
			260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	43.9 mg/l	46.85181	
			Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
			27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	22.1 mg/l	23.36357	
	Capacity		Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58		410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd				GWRS Production					
					70 mgd					
Plant No.2	Minus		Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions		Flow	Flow		Flow	Flow			
363.44	305.44		222.44 mgd	222.44 mgd		70 mgd	152.44 mgd			
mgd	mgd		BOD	BOD		BOD	BOD			
2.2			270 mg/l	82.5 mg/l		20 mg/l	82.5 mg/l			
Factor			TSS	TSS		TSS	TSS			
			260 mg/l	60 mg/l		20 mg/l	60 mg/l			
			Ammonia	Ammonia		Ammonia	Ammonia			
			27 mg/l	27 mg/l		25 mg/l	27 mg/l			
			Capacity	Rated Capacity		Rated Capacity				
			340 mgd	184.8 mgd		90 mgd				
				2,066 New SLR	gdp/ft^2				1.20368	99.30357
				450-1600 SP Range	gdp/ft^2					72.22078
										32.49935

Minimum Hour Flows

2007	**Minimum Hour Flows**	**Nitrification >**	**Yes**				
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
44.96	34.5	79.46 mgd	79.46 mgd	12 mgd	91.46 mgd	0 mgd	25.608 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	38.7 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	20.7 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	35.8 mg/l
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
60.648	26.148	26.148 mgd	26.148 mgd		26.148 mgd	0 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
Assumed SLR		Total Capacity	Rated Capacity		Rated Capacity		
780	gdp/ft^2	340 mgd	144 mgd		90 mgd		
				gdp/ft^2			
2008				gdp/ft^2			

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
45.44	34.8	80.24 mgd	80.24 mgd	12 mgd	92.24 mgd	0 mgd	27.152 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	37.7 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	20.1 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	34.5 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
61.712	26.912	26.912 mgd	26.912 mgd		26.912 mgd	0 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	144 mgd		90 mgd		
				gdp/ft^2			
2009				gdp/ft^2			

Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1	
Flow	Flow	Flow	Flow	Flow	Flow	Flow	
45.92	35.1	81.02 mgd	81.02 mgd	12 mgd	93.02 mgd	0 mgd	28.696 mgd
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	36.7 mg/l
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	19.6 mg/l
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	33.5 mg/l
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity		
	58	410 mgd	422 mgd	26 mg/l	110 mgd		
	mgd			GWRS Production			
				70 mgd			
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2	
Flow	Diversions	Flow	Flow		Flow	Flow	
62.776	27.676	27.676 mgd	27.676 mgd		27.676 mgd	0 mgd	
mgd	mgd	BOD	BOD		BOD	BOD	
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l	
Factor		TSS	TSS		TSS	TSS	
		260 mg/l	60 mg/l		20 mg/l	60 mg/l	
		Ammonia	Ammonia		Ammonia	Ammonia	
		27 mg/l	27 mg/l		25 mg/l	27 mg/l	
		Capacity	Rated Capacity		Rated Capacity		
		340 mgd	144 mgd		90 mgd		
				gdp/ft^2			
				gdp/ft^2			

Minimum Hour Flows Ellis Only

2007	Minimum Hour Flows	Nitrification >	Yes						
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
44.96	34.5	79.46 mgd	79.46 mgd	12 mgd	91.46 mgd	0 mgd	38.148 mgd	38.148	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	32.6 mg/l	32.58257	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	13.7 mg/l	13.70871	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.3 mg/l	25.31456	
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
60.648	26.148	26.148 mgd	26.148 mgd		26.148 mgd	0 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity				
		340 mgd	84 mgd		90 mgd				
			243 New SLR	gdp/ft^2				0.311286	42.02357
2008			450-1600 SP Range	gdp/ft^2					18.67714
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		8.404714
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
45.44	34.8	80.24 mgd	80.24 mgd	12 mgd	92.24 mgd	0 mgd	38.912 mgd	38.912	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	32.3 mg/l	32.33553	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	13.8 mg/l	13.83224	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.3 mg/l	25.30839	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
61.712	26.912	26.912 mgd	26.912 mgd		26.912 mgd	0 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	84 mgd		90 mgd				
			250 New SLR	gdp/ft^2				0.320381	43.25143
2009			450-1600 SP Range	gdp/ft^2					19.22286
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		8.650286
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
45.92	35.1	81.02 mgd	81.02 mgd	12 mgd	93.02 mgd	0 mgd	39.676 mgd	39.676	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	32.1 mg/l	32.09799	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	14.0 mg/l	13.951	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.3 mg/l	25.30245	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
62.776	27.676	27.676 mgd	27.676 mgd		27.676 mgd	0 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	84 mgd		90 mgd				
			257 New SLR	gdp/ft^2				0.329476	44.47929
			450-1600 SP Range	gdp/ft^2					19.76857
									8.895857

Minimum Hour Flows P2-66 and Ellis

2007	Minimum Hour Flows	Nitrification >	Yes						
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
44.96	34.5	79.46 mgd	79.46 mgd	12 mgd	91.46 mgd	0 mgd	38.148 mgd	38.148	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	32.6 mg/l	32.58257	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	13.7 mg/l	13.70871	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.3 mg/l	25.31456	
	Capacity	Total Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
60.648	26.148	26.148 mgd	26.148 mgd		26.148 mgd	0 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
Assumed SLR		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
780	gdp/ft^2	Total Capacity	Rated Capacity		Rated Capacity				
		340 mgd	84 mgd		90 mgd				
			243 New SLR	gdp/ft^2				0.311286	42.02357
2008			450-1600 SP Range	gdp/ft^2					18.67714
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		8.404714
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
45.44	34.8	80.24 mgd	80.24 mgd	12 mgd	92.24 mgd	0 mgd	38.912 mgd	38.912	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	32.3 mg/l	32.33553	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	13.8 mg/l	13.83224	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.3 mg/l	25.30839	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
61.712	26.912	26.912 mgd	26.912 mgd		26.912 mgd	0 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	84 mgd		90 mgd				
			250 New SLR	gdp/ft^2				0.320381	43.25143
2009			450-1600 SP Range	gdp/ft^2					19.22286
Tributary	Ellis	Influent	Primary Effluent	GWRS	SecondaryEffluent	Primary Effluent to Ocean	Final Effluent		8.650286
Plant No.1	Diversions	Plant No.1	Plant No.1	MF Reject	Plant No.1	Plant No.1			
Flow	Flow	Flow	Flow	Flow	Flow	Flow			
45.92	35.1	81.02 mgd	81.02 mgd	12 mgd	93.02 mgd	0 mgd	39.676 mgd	39.676	
mgd	mgd	BOD	BOD	Brine Reject	BOD	BOD	BOD		
0.4	Timing	270 mg/l	135 mg/l	12 mgd	20 mg/l	135 mg/l	32.1 mg/l	32.09799	
Factor	night	TSS	TSS	BOD	TSS	TSS	TSS		
		260 mg/l	60 mg/l	60 mg/l	20 mg/l	60 mg/l	14.0 mg/l	13.951	
		Ammonia	Ammonia	TSS	Ammonia	Ammonia	Ammonia		
		27 mg/l	27 mg/l	0 mg/l	4 mg/l	27 mg/l	25.3 mg/l	25.30245	
	Capacity	Capacity	Rated Capacity	Ammonia	Rated Capacity				
	58	410 mgd	422 mgd	26 mg/l	110 mgd				
	mgd			GWRS Production					
				70 mgd					
Plant No.2	Minus	Plant No.2	Plant No.2		Plant No.2	Plant No.2			
Flow	Diversions	Flow	Flow		Flow	Flow			
62.776	27.676	27.676 mgd	27.676 mgd		27.676 mgd	0 mgd			
mgd	mgd	BOD	BOD		BOD	BOD			
0.38		270 mg/l	135 mg/l		20 mg/l	135 mg/l			
Factor		TSS	TSS		TSS	TSS			
		260 mg/l	60 mg/l		20 mg/l	60 mg/l			
		Ammonia	Ammonia		Ammonia	Ammonia			
		27 mg/l	27 mg/l		25 mg/l	27 mg/l			
		Capacity	Rated Capacity		Rated Capacity				
		340 mgd	84 mgd		90 mgd				
			257 New SLR	gdp/ft^2				0.329476	44.47929
			450-1600 SP Range	gdp/ft^2					19.76857
									8.895857

Plant No. 2 Summary

Plant No.2 Summary										
							With P2-66			
		Without P2-66					(minus 29.8 mgd Primary Capacity)			
2007 ADF		Flow	Capacity	Est SLR			Flow	Capacity	Est SLR	
Influent Flow		144	144	NA			101.6	90	NA	
Primary Treatment		144	144	780			101.6	90	881	
Secondary Treatment		90	90	NA			30	30	NA	
Effluent to Ocean										
Primary		54	NA				71.6	NA		
Secondary		90	NA				30	NA		
Primary Effluent Quality										
BOD	est.	135	mg/l			est.	135	mg/l		
TSS	Chart	70	mg/l			Chart	80	mg/l		
Secondary Effluent Quality										
BOD	Planning Est.	20	mg/l				20	mg/l		
TSS	Planning Est.	20	mg/l				20	mg/l		
Plant No.1										
Effluent to Ocean										
Primary		34	NA				62	NA		
Secondary (GWRS)		94	NA				108.4	NA		
Primary Effluent Quality										
BOD		135	mg/l				135	mg/l		
TSS		60	mg/l				60	mg/l		
Secondary Effluent Quality										
BOD		20	mg/l				20	mg/l		
TSS		20	mg/l				20	mg/l		
Final Effluent										
Flow		178					163.6			
BOD		77					114	55%	119.1236	
TSS		43					61	45%	62.07303	
Permit										
BOD	150 mg/l	7-day Average								
TSS	109 mg/l	7-day Average								

Plant No. 2 Summary Peak Daily

Plant No.2 Summary

		Without P2-66				With P2-66 (minus 60 mgd Primary Capacity)		
2007 Peak Daily Flow		Flow	Capacity	Est SLR		Flow	Capacity	Est SLR
Influent Flow		185	185	NA		143	130	NA
Primary Treatment		185	185	1029		143	130	1,130
Secondary Treatment		90	90	NA		30	30	NA
Effluent to Ocean								
Primary		95.496	NA			113.096	NA	
Secondary		90	NA			30	NA	
Primary Effluent Quality								
BOD	est.	135	mg/l		est.	135	mg/l	
TSS	Chart	90	mg/l		Chart	95	mg/l	
Secondary Effluent Quality								
BOD	Planning Est.	20	mg/l			20	mg/l	
TSS	Planning Est.	20	mg/l			20	mg/l	
Plant No.1								
Effluent to Ocean								
Primary		48	NA			91	NA	
Secondary (GWRS)		94	NA			108.4	NA	
Primary Effluent Quality								
BOD		135	mg/l			135	mg/l	
TSS		60	mg/l			60	mg/l	
Secondary Effluent Quality								
BOD		20	mg/l			20	mg/l	
TSS		20	mg/l			20	mg/l	
Final Effluent without GWRS								
Flow		234				234		
BOD		91				120	30%	117.9616
TSS		57				72	25%	71.07046

Permit			
BOD	150	mg/l	7-day Average
TSS	109	mg/l	7-day Average

Summary of Headworks Replacement Flow Routing Quality

Final Effluent Quality With P2-66 and Ellis

	Flow (MGD)	BOD (mg/l)	TSS (mg/l)	Ammonia (mg/l)
ADWF	180	95	44	26
PDWF	252	99	45	26
PWWF*	610	84	43	22
Min Hour	38	33	14	25
2008				
ADWF	184	95	44	26
PDWF	257	100	46	26
PWWF*	619	84	44	22
Min Hour	39	32	14	25
2009				
ADWF	188	96	44	26
PDWF	262	100	46	26
PWWF*	628	85	44	22
Min Hour	40	32	14	25

Final Effluent Quality With Ellis Only

Flow (MGD)	BOD (mg/l)	TSS (mg/l)	Ammonia (mg/l)
180	83	39	26
252	88	42	26
506	88	51	26
38	33	14	25
184	84	39	26
257	89	42	26
515	89	51	26
39	32	14	25
188	84	40	26
262	89	42	26
524	90	51	26
40	32	14	25

Final Effluent Quality Without P2-66 or Ellis

2007	Flow (MGD)	BOD (mg/l)	TSS (mg/l)	Ammonia (mg/l)
ADWF	190	79	38	26
PDWF	252	88	42	26
PWWF	460	94	53	26
Min Hour	26	33	21	36
2008				
ADWF	192	79	38	26
PDWF	257	89	42	26
PWWF	475	92	52	26
Min Hour	27	38	20	35
2009				
ADWF	194	79	38	26
PDWF	262	89	42	26
PWWF	477	93	52	26
Min Hour	29	37	20	33

Comparison of "with Ellis" and "With Ellis and P2-66"

BOD Delta	TSS Delta	NH4 Delta	BOD%	TSS%	NH4%
12	4	0	14%	10%	1%
11	4	0	13%	10%	0%
-4	-7	-4	-4%	-14%	-17%
0	0	0	0%	0%	0%
11	4	0	14%	11%	1%
11	4	0	13%	9%	1%
-4	-7	-4	-5%	-14%	-17%
0	0	0	0%	0%	0%
12	4	0	15%	11%	1%
11	4	0	12%	9%	1%
-5	-7	-4	-6%	-14%	-16%
0	0	0	0%	0%	0%

Permit		
BOD	150 mg/l	7-day Average
TSS	109 mg/l	7-day Average

* GWRS Offline

Conclusions from above results:
1.) The 60 mgd flow Ellis Ave. swap from P1 to P2 will not significantly impact effluent quality during normal daily treatment operations.
2.) The flow swap represents primary effluent treatment location only for primary effluent that will otherwise go the to ocean anyway. (P2 vs. P1)
3.) The excpetion will be during peak wet weather events. P2 will be overwhelmed if P1 does not take SARI flows for a period of time. (usually a few hours)
4.) GWRS will need to be shutdown until the SARI wastes leave the treatment system.

2008 ADF without P2-66 with P1-37 (average daily conditions)

P1 Influent 129 mgd	P1 primary to ocean 21 mgd	P1 secondary to GWRS 108 mgd +12 mgd GWRS MF reject	P1 secondary to ocean 0 mgd
P2 Influent 147 mgd	P2 primary to the ocean 79 mgd		P2 secondary to ocean 68 mgd
Total 276 mgd	Primary to the ocean 100	Secondary to GWRS 120 mgd +12 mgd GWRS MF reject	Secondary to ocean 68

2008 ADF with P2-66 with P1-37

P1 Influent 172 mgd	P1 primary to ocean 64 mgd	P1 secondary to GWRS 108 mgd	P1 secondary to ocean 0 mgd
P2 Influent 104 mgd	P2 primary to the ocean 54 mgd		P2 secondary to ocean 50 mgd
Total 276 mgd	Primary to the ocean 118	Secondary to GWRS 120 mgd +12 mgd GWRS MF reject	Secondary to ocean 50
	+18 primary delta		-18 secondary delta