CHAPTER 1

INTRODUCTION

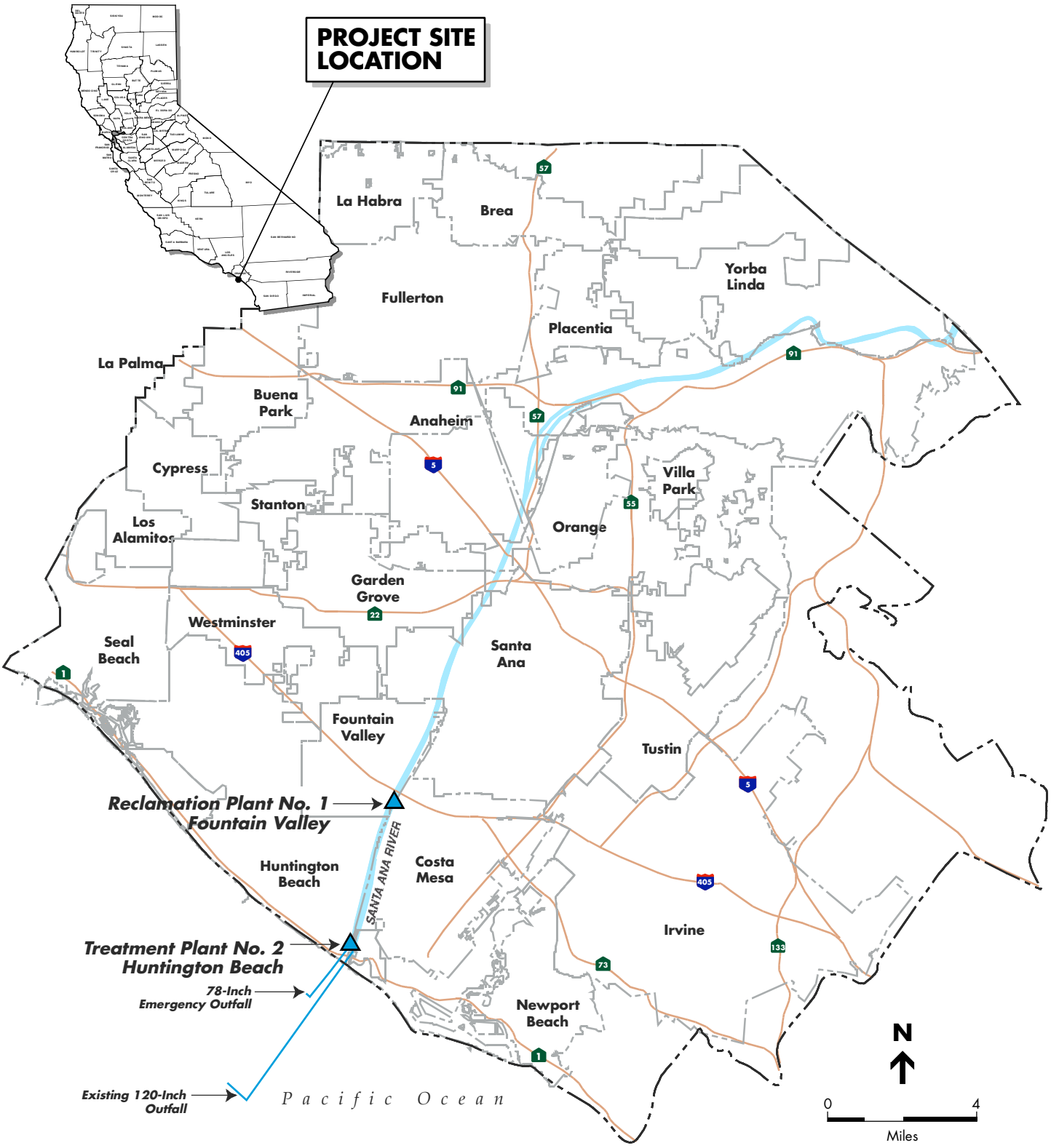
The Orange County Sanitation District (OCSD or District) is the lead agency for the preparation of this Subsequent Environmental Impact Report (SEIR) pursuant to Sections 15162 and 15168 of the California Environmental Quality Act (CEQA) for the Secondary Treatment and Plant Improvement Project (Project). The Project increases secondary treatment capacity at Reclamation Plant No. 1 and Treatment Plant No. 2 in the cities of Fountain Valley and Huntington Beach, California. The SEIR supplements the District's Strategic Plan Program Environmental Impact Report (PEIR) certified by the District's Board of Directors in October 1999 and evaluates the improvements at each plant that are required to achieve secondary treatment standards. The PEIR is incorporated by reference into this SEIR. The PEIR is available for review at the Orange County Sanitation District Planning Division, located in the Administrative Office at 10844 Ellis Avenue, Fountain Valley, CA 92708, or at http://www.ocsd.com/info/eirs/archive.asp.

1.1 PROJECT BACKGROUND

1.1.1 DISTRICT SERVICE

The District provides wastewater services for more than 2.3 million residents within a 470-square mile portion of northern and central Orange County. The District operates and maintains over 650 miles of trunk and subtrunk sewer lines within its service area, which encompasses slightly more than half of the land area of Orange County. Two treatment plants are situated adjacent to the Santa Ana River (SAR) about four miles apart. Reclamation Plant No. 1 (Plant No. 1) is located in Fountain Valley and Treatment Plant No. 2 (Plant No. 2) is located in Huntington Beach near the coast. Treated effluent from the two plants is discharged through a 120-inch diameter ocean outfall that extends approximately four miles offshore. An additional 78-inch emergency outfall extends one mile from shore and is available for use during infrequent peak storm flows. **Figure 1-1** shows the District's service area.

OCSD's treatment requirements for the wastewater it discharges to the ocean are established in its National Pollutant Discharge Elimination System (NPDES) permit issued by the Regional Water Quality Control Board – Santa Ana Region (SARWQCB) to comply with the federal Clean Water Act (CWA). Although the CWA requires most treatment plants to provide secondary treatment for all effluent discharged to the ocean, OCSD has been permitted for the last several years to operate under a modified permit issued pursuant to Section 301(h) of the Act. This provision of the Act allows qualified wastewater treatment plants employing rigorous pretreatment and extensive ocean monitoring to release less than secondary treated wastewater into deep ocean waters. The District has been operating under this modified permit for the last 15 years – providing a blend of advance primary and secondary treatment for its ocean discharge. Up until 2002 the District had been planning to continue to provide treatment



SOURCE: Environmental Science Associates

OCSD Secondary Treatment and Plant Improvement / 203472 ■

Figure 1-1
OCSD Service Area

capability that would support a blend of advance primary and secondary treatment in compliance with the modified NPDES permit requirements.

1.1.2 1999 STRATEGIC PLAN PROGRAM EIR

The District prepared a 1999 Strategic Plan that assessed the District's wastewater system needs through the year 2020 and options to meet those needs. The Strategic Plan identified facility improvements and operations necessary to:

- accommodate projected population growth in the District's Service Area;
- handle peak wet-weather flows that can be more than two and one-half times greater than average dry-weather flows;
- respond to changing environmental regulations; and
- support regional water recycling through participation with the Orange County Water District (OCWD) in the Groundwater Replenishment (GWR) System Project.

The Strategic Plan covers all aspects of the District's operations. It provides a phased program of projects to replace and rehabilitate the sewer collection system, expand and upgrade the District's two treatment plants, expand the biosolids management program, and provide additional treated wastewater to OCWD to support the GWR System Project. The objectives of the Strategic Plan were identified as:

1) To plan for wastewater collection, treatment, and disposal facilities to serve the needs of the OCSD Service Area through 2020;
2) To ensure compliance with the existing and anticipated ocean discharge permit conditions, including the requirements of the 301 (h) modified (secondary treatment waiver) NPDES permit for discharge;
3) To recommend projects that meet the community's needs, protect public health, are technical feasible, and are cost-effective and environmental responsible; and
4) To maximize the use of treated effluent for water recycling.

In October 1999, the District certified a PEIR that assessed the potential environmental effects of the District's 20-year Strategic Plan on the local and regional environment. The PEIR assessed impacts of implementing capital improvement projects proposed for the collection system, treatment plants, discharge facilities, and biosolids management facilities. The PEIR evaluated six alternative treatment scenarios: three variations on the level of treatment to be provided for ocean discharge, each considered with and without participation in the GWR System Project with OCWD, as follows:

- **Scenario 1: NPDES Permit Compliance without GWR System Project.** This scenario would have provided a level of treatment necessary to meet the National Pollutant Discharge Elimination System (NPDES) permit conditions and the California Ocean Plan. All wastewater would have received advanced primary treatment and the amount of secondary treatment would have been governed by the NPDES limits.

- **Scenario 2: NPDES Permit Compliance with GWR System Project.** This scenario is the same as Scenario 1 except that 50-80 million gallons per day (mgd) average daily flow and up to 100 mgd peak wet weather flow of secondary effluent would have been diverted from OCSD to the GWR system.

- **Scenario 3: Full Secondary Treatment without GWR System.** This scenario would have provided full secondary treatment of all wastewater prior to ocean disposal. Under this alternative the GWR System project would not have been implemented. The capacity within both Plants No. 1 and No. 2 would have been increased to accommodate peak projected flows. The existing facilities would have been optimized through flow diversions to minimize the construction of new facilities.

- **Scenario 4: Full Secondary Treatment with GWR System.** This scenario would have provided full secondary treatment and in coordination with OCWD, diverted flows from OCSD to the GWR system.

- **Scenario 5: 50:50 Blend without GWR System Project.** This alternative scenario would have maintained the level of treatment provided in 1999. All wastewater would have received advanced primary treatment and about 50 percent would have also received secondary treatment prior to ocean discharge.

- **Scenario 6: 50:50 Blend with GWR Project.** This scenario would have also maintained the level of treatment provided in 1999 and diverted flows to the GWR system.

Scenarios 1 and 2 would have provided a blend of primary and secondary treatment. Scenarios 3 and 4 would have achieved secondary treatment for all effluent discharged through the ocean outfall system. Scenarios 5 and 6 would have provided a 50 percent primary and secondary blend. These six alternatives were evaluated thoroughly at an equal level of detail, such that the PEIR provides a complete environmental impact assessment of each alternative, identifying potentially significant impacts and appropriate mitigation measures for each.

The District certified the PEIR and adopted the Strategic Plan in October 1999. As part of the Plan adoption, the District approved Scenario 2, a treatment scenario that provides for a blend of advanced primary and secondary treatment for all ocean discharge flows in compliance with the modified NPDES permit requirements.

1.2 CHANGES SINCE THE 1999 STRATEGIC PLAN ADOPTION

Since the 1999 Strategic Plan adoption OCSD has proceeded with implementation of several of the facility projects within the plan. Among various projects underway, the District has implemented a disinfection/dechlorination program for the full flow discharged to the ocean. Disinfection facilities were installed in 2002. The District has proceeded with its commitment to participate with OCWD in the GWR System Project and has approved a joint development, operation and maintenance agreement with OCWD for the project. The GWR System project is under construction now. The GWR System project will purify highly treated wastewater from OCWD and inject it into the groundwater basin to help prevent seawater intrusion along the coastal boundary of the aquifer and to enhance the long-term water supply of groundwater.

The District has also been engaged in renewing its NPDES permit, which is renewed every five years. In July 2002 the District Board of Directors, responding to public input received during the development of its NPDES ocean discharge permit renewal application, voluntarily decided to have its ocean discharge meet secondary treatment standards. The Board directed staff to proceed immediately with planning, design, and implementation of treatment methods that would allow the District to meet federal CWA secondary treatment standards (Resolution No. OCSD 02-14, July 17, 2002). In response to this Board policy directive, OCSD staff began the process to change the recommended level of treatment identified in the Strategic Plan and PEIR from Scenario 2 (a blend of primary and secondary) to Scenario 4 (full secondary). Staff prepared the Interim Strategic Plan Update (2002) and the Full Secondary Treatment Summary Report (2003) to identify the needed elements of the proposed Secondary Treatment and Plant Improvement Project now being proposed. The Full Secondary Treatment Summary Report concluded that secondary treatment facilities could be phased in over time with full implementation by 2012. **Figure 1-2** summarizes the proposed phased increase of secondary treated effluent through 2012.

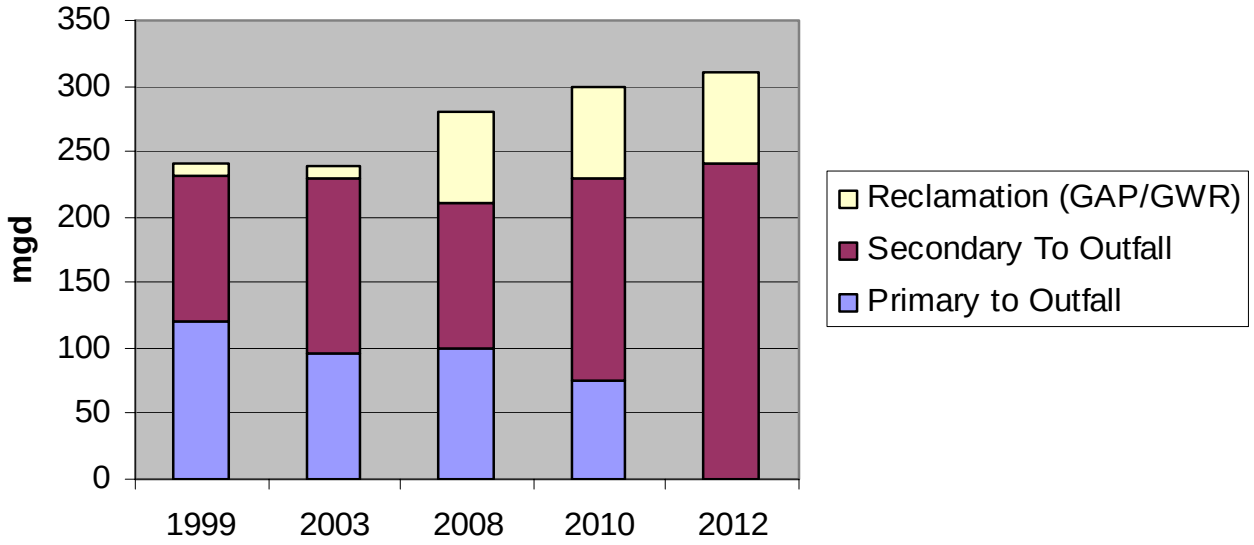


Figure 1-2: Historic and Projected Levels of Wastewater Treatment

Subsequently, the SARWQCB renewed the District's NPDES permit reflecting the requirement that the ocean discharge meet secondary treatment standards. A Consent Decree developed between the EPA, SARWQCB and OCSD, filed in November 2004, establishes the timetable for OCSD to complete the necessary facility projects to provide the required secondary treatment by 2012 and sets interim effluent limits as shown in **Table 1-1**.

Since the District elected to increase the level of wastewater treatment, it has maximized its use of its existing secondary treatment facilities. Secondary treatment of effluent has increased such that the District currently provides secondary treatment to approximately 64 percent (153 mgd) of its total flow.[1]

[1] OCSD Full Secondary Summary Report, 2003.

Table 1-1
NPDES Permit Limits

	BOD	TSS
Interim Ocean Discharge Limits (until 2011) 30-day average (mg/l)	105	70
Interim Ocean Discharge Limits (2011-2012) 30-day average (mg/l)	95	55
Secondary Treatment Discharge Limits (after 2012) 30-day average (mg/l)	30	30

Source: Orange County Sanitation District.
BOD = biochemical oxygen demand
TSS = total suspended solids
mg/l = milligrams per liter

1.3 PROJECTED WASTEWATER FLOWS

The projected future wastewater flow rates within the OCSD service area have been reduced since the PEIR was adopted in 1999. The revised wastewater flow projections are based on the latest information about the actual rates of development and population growth and current trends within the service area and reflect the effect of recent economic conditions. **Figure 1-3** shows the historical and projected wastewater flows. In 2003, the District discharge averaged 239 mgd. **Table 1-2** summarizes existing and projected wastewater flows for dry weather and wet weather. The volumes listed in the table are treatment volumes. Actual discharge volumes out the 120-inch outfall would be reduced due to GWR System diversions. The proposed Project assumes that 70 mgd of secondary-treated effluent would be delivered to the GWR System.

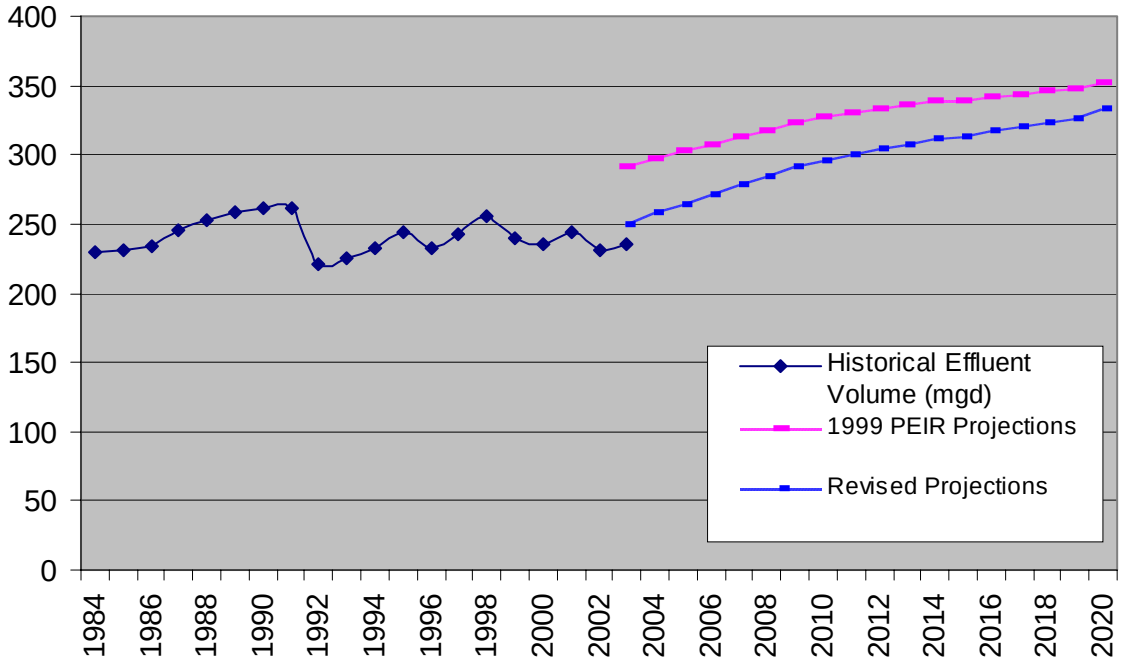


Figure 1-3: Historic and Projected Wastewater Flows

Table 1-2
Wastewater Flow Projections for Dry and Peak Wet Weather

	Projected Average Daily Flows (mgd)			
	2005	**2010**	**2015**	**2020**
Reclamation Plant No. 1	120	152*	170*	189*
Treatment Plant No. 2	144	144	144	144
Total	264	296*	314*	333*
PEIR Total Projections	*303*	*328*	*340*	*352*
	Projected Peak Wet Weather Flows (mgd)			
	2005	**2010**	**2015**	**2020**
Reclamation Plant No. 1	239	262*	285	308*
Treatment Plant No. 2	317	317	317	317
Total	551	579*	602	625*
PEIR Total Projections	*666*	*721*	*748*	*774*

Source: Orange County Sanitation District, Full Secondary Treatment Summary Report; 2003 Report; and the PEIR.
* includes 12 mgd of brine from GWR System

The PEIR estimated average daily discharge volumes to be 259.6 mgd by the year 2020 (accounting for 16 mgd of brine from the GWR System microfiltration process). The proposed Project estimates average daily discharge volumes to be 251 mgd by 2020 (accounting for 12 mgd of brine from the GWR System microfiltration process). The proposed Project would provide secondary treatment facilities to accommodate this revised flow rate, which would require slightly less treatment capacity than assumed under Scenario 4 of the PEIR.

1.4 NEED FOR THE PROJECT

In recent years, the ocean waters off Huntington Beach have been impacted by high concentrations of bacteria resulting in the warning or closure of the beaches to water-contact recreation. Numerous studies have been conducted to determine the source(s) of the bacteria. To date, none of these studies has linked the beach closures to OCSD's sewers or wastewater discharges. Nevertheless, the District received substantial public support for upgrading treatment facilities.

Although neither the limitations in the District's NPDES Permit, Order No. 98-5 nor the bacterial standards for beach waters[2] established by the Department of Health Services (DHS) were exceeded as a result of the District's discharge, the District Board of Directors issued a directive to expand treatment facilities to produce secondary treated effluent and to provide disinfection as directed by the RWQCB. In response to these directives, facilities necessary to provide disinfection and dechlorination of the effluent were installed and planning was initiated for implementation of secondary treatment facilities.

The federal CWA requires that publicly owned treatment works (POTW) provide secondary treatment to effluent discharged to waters of the United States. Prior to this year, the District operated under a NPDES permit that included a modification pursuant to Section 301(h) of the CWA. Based on the directive of the Board, the District submitted an application for its ocean discharge permit to be renewed as a standard

[2] These standards include total and fecal coliform, as well as enterococcus, another type of bacterial indicator. The Ocean Plan and California Assembly Bill 411 (A.B. 411) standards for total and fecal coliform are very similar.

secondary treatment permit, removing the discharge modification issued under CWA Section 301(h), and requiring that effluent discharged through the 120-inch outfall meet secondary treatment requirements by the year 2012. Recently OCSD, EPA and the State Water Resources Control Board signed a consent decree that sets interim effluent limits, deadlines for completion of new secondary treatment facilities and reporting requirements.

1.5 CEQA SUBSEQUENT EIR PROCESS

Many of the facilities needed to upgrade to secondary treatment were identified and analyzed in the PEIR under Scenarios 3 and 4.[3] However, since the PEIR was certified, some projects have been modified and new projects have been added that were not included in the 1999 Strategic Plan and consequently not analyzed in the PEIR. Therefore, the District is preparing a SEIR pursuant to the *CEQA Guidelines*, Sections 15162 and 15168(d) to address changes to the previously identified secondary treatment facilities.

Section 15162 of the *CEQA Guidelines* explains that Subsequent EIRs should be prepared when "substantial changes are proposed in the project which will require major revisions of the previous EIR…due to the involvement of new significant environmental effects…" Although the PEIR evaluated two alternatives that would increase the District's secondary treatment capacity to accommodate 2020 flows (Scenarios 3 and 4), substantial new information on individual treatment facilities is now available. As such, this SEIR provides additional information concerning the individual treatment upgrade projects, and evaluates the potential environmental effects associated with their implementation to determine whether "new significant environmental effects" would result. This SEIR then compares the potential effects of these projects with the analysis included in the PEIR.

Section 15168(d) of the *CEQA Guidelines* explains that Subsequent EIRs may be prepared to augment previously certified Program EIRs. In accordance with *CEQA Guidelines*, this SEIR augments the PEIR. The SEIR is an informational document intended to inform decision-makers, responsible or interested agencies, and the general public of the potential effects of the proposed Project that differ from those analyzed in the PEIR. This SEIR provides project-level analysis of the proposed projects while incorporating by reference the program-level analysis provided in the PEIR that remains relevant.

The environmental review process has been structured to enable interested parties to evaluate the proposed projects in terms of their environmental consequences, to examine and implement methods to eliminate or reduce potential adverse impacts and to consider a reasonable range of alternatives to the project. While CEQA requires that major consideration be given to avoiding adverse environmental effects, the lead agency and other responsible public agencies must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

Pursuant to Section 15082 of the *CEQA Guidelines*, a Notice of Preparation (NOP) was prepared for the project and circulated to the public on March 15, 2004. The NOP requested that interested parties respond within 30 days with comments and concerns related to the proposed projects. The NOP comment

[3] Facilities for secondary treatment under Scenarios 3 and 4 are described in the PEIR I Tables 3-2 and 3-3 on pages 3-13 and 3-14, and in Tables 3-7 and 3-8 on pages 3-26 through 3-28.

period ended on April 23, 2004. A total of 15 NOP comment letters were received. Copies of the NOP and comments received are included in Appendices A and B, respectively. This SEIR addresses each of the issues raised in the comments.

The Draft SEIR will be circulated for public review by local, state and federal agencies and to interested organizations and individuals for a period of 45 days. During the review process, comments can be sent to the District to Jim Herberg at 10844 Ellis Avenue; Fountain Valley, CA. 92708-7018. Following the comment period, the District will compile comments received and will prepare a Response to Comments document that, together with the Draft SEIR, will constitute the Final SEIR. The Final SEIR will be presented to the District Board of Directors for certification prior to approval of the Project.

This SEIR identifies measures that the District will implement to lessen potential impacts. These measures will then be added to those already identified in the PEIR. The mitigation measures identified in the PEIR that are applicable to the newly proposed project are restated in this SEIR. The Mitigation Monitoring and Reporting Plan for the PEIR is included in Appendix C.

As noted in the NOP, this SEIR is focused to assess only those environmental resources that could potentially be significantly impacted by the proposed project in ways not already identified in the PEIR. An Initial Study pursuant to *CEQA Guidelines* Section 15063 was prepared to assess whether the proposed Project could result in significant impacts to environmental resources. The Initial Study is included in Appendix D. Based on the results of the Initial Study, impacts to the resources listed below could be potentially significant. The SEIR includes a setting and impacts analysis for the following resource areas:

- Aesthetics
- Air Quality
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Marine Environment
- Noise
- Traffic

1.6 ORGANIZATION OF THE SUBSEQUENT EIR

This Subsequent EIR is structured as follows:

Executive Summary: This section contains an overview of the scope of the SEIR, as well as a summary of environmental impacts, proposed mitigation, level of significance after mitigation, and unavoidable impacts.

Chapter 1. Introduction: This chapter provides an overview of the purpose and use of the SEIR, the scope of this SEIR, the environmental review process for the SEIR and the proposed Project, and the general format of the document.

Chapter 2. Project Description and Site Characteristics: This chapter defines the project location, summarizes the proposed Project, and outlines the Project objectives. This section describes the changes to the secondary treatment improvements assessed in the PEIR. This section also lists the other agency approvals needed to implement the project.

Chapter 3. Environmental Setting, Impacts and Mitigation Measures: This chapter describes and evaluates the environmental issue areas, including the existing environmental setting and background, applicable environmental thresholds, environmental impacts (both short-term and long-term), and mitigation measures capable of minimizing environmental harm.

Chapter 4. Alternatives. This chapter reviews the assessment of level of treatment alternatives analyzed thoroughly in the PEIR, and presents an analysis of secondary treatment process alternatives at Plant No. 2, and the required No Project Alternative. The environmentally superior alternative is identified.

Chapter 5. Other CEQA Requirements: This chapter provides a summary of the proposed project's relationship to regional growth; an assessment of cumulative impacts, a discussion of significant irreversible environmental changes, and an assessment of the environmentally superior alternative.

Chapter 6. References: This chapter identifies all references used and cited in the preparation of this report.

Chapter 7. Acronyms and Abbreviations: This chapter provides a description of abbreviations and acronyms used throughout the document.

Chapter 8. List of Preparers/Organizations and People Consulted: This chapter identifies the public and private agencies and individuals contacted during the preparation of this report, and all individuals responsible for the preparation of this report.

Appendices: Data supporting the analysis or contents of this EIR are provided in appendices to the document. Other reports are available at the offices of the Orange County Sanitation District; 10844 Ellis Avenue; Fountain Valley, CA. 92708-7018.