
Draft

Program Environmental Impact Report

Collection System Improvement Plan

SCH# 2006101018

Prepared for



Orange County Sanitation District

March 2007

Prepared by



10844 Ellis Avenue
Fountain Valley, CA 92708

blank page

Contents

Chapter	Page
Acronyms	v
Executive Summary.....	ES-1
1.0 Introduction.....	1-1
1.1 Background	1-1
1.2 Environmental Document.....	1-2
1.3 Plan Objectives.....	1-2
1.4 Environmental Review Process	1-5
1.5 Intended Uses of this PEIR.....	1-5
1.6 Draft PEIR Content and Organization	1-5
2.0 Plan Description	2-1
2.1 Proposed Plan	2-1
2.1.1 Project Descriptions	2-1
2.1.2 Project Implementation	2-7
2.2 Construction Activities.....	2-8
2.2.1 Open-Trench Excavation.....	2-8
2.2.2 Trenchless Installation Methods	2-16
2.2.3 Sewer Lining and Manhole Rehabilitation	2-16
2.2.4 Pump Station Rehabilitation.....	2-19
2.2.5 Construction Equipment	2-19
2.2.6 Construction Schedule.....	2-19
2.3 Operation and Maintenance	2-19
3.0 Environmental Setting, Impacts, and Mitigation Measures	3-1
3.1 Basis for Determining Significance	3-1
3.1.1 CEQA Guidance	3-1
3.1.2 Proposed Plan Approach	3-1
3.2 Air Quality.....	3-2
3.2.1 Setting	3-2
3.2.2 Impacts.....	3-8
3.2.3 Mitigation Measures	3-13
3.2.4 Significance After Mitigation.....	3-13
3.3 Biological Resources.....	3-13
3.3.1 Setting	3-13
3.3.2 Impacts.....	3-17
3.3.3 Mitigation Measures	3-23
3.3.4 Significance After Mitigation.....	3-25
3.4 Cultural Resources	3-25
3.4.1 Setting	3-25
3.4.2 Impacts.....	3-34

3.4.3	Mitigation Measures	3-36
3.4.4	Significance After Mitigation	3-37
3.5	Geology and Soils	3-37
3.5.1	Setting	3-37
3.5.2	Impacts	3-41
3.5.3	Mitigation Measures	3-42
3.5.4	Significance After Mitigation	3-42
3.6	Hazards and Hazardous Materials	3-43
3.6.1	Setting	3-43
3.6.2	Impacts	3-44
3.6.3	Mitigation Measures	3-46
3.6.4	Significance After Mitigation	3-46
3.7	Hydrology and Water Quality	3-47
3.7.1	Setting	3-47
3.7.2	Impacts	3-48
3.7.3	Mitigation Measures	3-50
3.7.4	Significance After Mitigation	3-51
3.8	Land Use and Planning	3-51
3.8.1	Setting	3-51
3.8.2	Impacts	3-54
3.8.3	Mitigation Measures	3-60
3.8.4	Significance After Mitigation	3-60
3.9	Noise	3-60
3.9.1	Setting	3-60
3.9.2	Impacts	3-61
3.9.3	Mitigation Measures	3-70
3.9.4	Significance After Mitigation	3-70
3.10	Population and Housing	3-71
3.10.1	Setting	3-71
3.10.2	Impacts	3-72
3.10.3	Mitigation Measures	3-74
3.10.4	Significance After Mitigation	3-74
3.11	Public Services	3-74
3.11.1	Setting	3-74
3.11.2	Impacts	3-76
3.11.3	Mitigation Measures	3-78
3.11.4	Significance After Mitigation	3-79
3.12	Transportation and Traffic	3-80
3.12.1	Setting	3-80
3.12.2	Impacts	3-85
3.12.3	Mitigation Measures	3-87
3.12.4	Significance After Mitigation	3-89
4.0	Project Alternatives	4-1
4.1	CEQA Requirements	4-1
4.2	Alternative Development Process	4-1
4.2.1	Proposed Objectives	4-2

4.2.2	Potentially Significant Impacts of the Preferred Alternative	4-2
4.2.3	Description of Alternatives	4-2
4.3	Alternatives Evaluation	4-3
4.3.1	No Project Alternative	4-3
4.3.2	Trunk Capacity Optimization Alternative.....	4-3
4.4	Potential Impacts from Project Alternatives.....	4-4
4.5	Environmentally Superior Alternative.....	4-5
5.0	Other CEQA Topics	5-1
5.1	Cumulative Impacts.....	5-1
5.1.1	Proposed Project Impacts	5-1
5.1.2	Thresholds of Significance	5-1
5.1.3	Reasonably Foreseeable Future Projects	5-2
5.1.4	Potential Cumulative Impacts	5-4
5.2	Growth Inducement.....	5-8
5.2.1	Thresholds of Significance	5-9
5.2.2	Existing Environmental Setting.....	5-9
5.2.3	Impacts.....	5-9
5.2.4	Mitigation	5-11
5.3	Significant Irreversible Environmental Effects.....	5-11
6.0	Preparers and Contributors	6-1
7.0	References	7-1

Appendixes

A	Maps – Land Use and Sensitive Receptors by Proposed Improvements
B	Scoping Materials
B1	Notice of Preparation and Initial Study
B2	Notification and Mailing List
B3	Public Meeting Sign-in Sheet
B4	Comment Letters
C	Construction Emissions Calculations
D	Special-Status Species
E	Material Safety Data Sheets
F	Draft PEIR Mailing List

Tables

ES-1 Proposed Collection System Improvements ES-2

ES-2 Summary of Project Impacts and Mitigation Measures ES-5

1-1 Permits or Approvals that Might be Required 1-6

2-1 Proposed Collection System Improvements 2-2

2-2 Construction Activity Area and Method Assumptions 2-11

2-3 Implementation Assumptions by Project 2-13

2-4 Construction Equipment for Open Trench Excavation Projects 2-14

2-5 Preliminary Construction Schedule 2-15

3-1 Orange County Air Quality Summary, 2002 through 2005 3-5

3-2 Estimated Construction Emissions (lbs/day) 3-11

3-3 Identification of Sensitive Receptors 3-57

3-4 Orange County Sanitation District Service Area Population Projections 3-71

3-5 Orange County Sanitation District Service Area Employment Projections..... 3-71

3-6 Orange County Sanitation District Service Area Population and Housing
Comparison by City..... 3-72

3-7 Orange County Sanitation District Service Area Public Service and Utility
Providers by City 3-75

3-8 Existing Transportation Facilities Along the Sanitation District Proposed
System Improvements..... 3-81

3-9 Estimated Construction Traffic of the Sanitation District-Proposed System
Improvements 3-86

4-1 Potential Impacts from the Proposed Plan and Project Alternatives 4-4

5-1 Reasonably Foreseeable Future Projects..... 5-3

Figures

1-1 Existing Service Area and Wastewater Facilities..... 1-3

2-1 Proposed Improvements..... 2-3

2-2 Typical Open Trench Construction 2-9

2-3 Jacking and Boring Technique 2-17

3-1 Generalized Wildlife Habitat Areas 3-15

3-2 Prehistoric Archaeology General Areas of Sensitivity..... 3-27

3-3 Paleontology General Areas of Sensitivity 3-29

3-4 Orange County Historical Areas 3-31

3-5 Regional Fault Zones 3-39

3-6 Typical Ground Vibration Associated with Construction Equipment..... 3-69

Acronyms

AQMP	Air Quality Management Plan
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CIP	Capital Improvement Plan
CIPP	cured-in-place pipe
CO	carbon monoxide
CPUC	California Public Utilities Commission
CUPAs	Certified Uniform Program Agencies
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
DAMP	Drainage Area Management Plan
dBA	A-weighted decibels
dB	decibel
DOGGR	California Department of Conservation, Division of Oil, Gas, and Geothermal Resources
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
GWDR	State General Waste Discharge Requirements
HCD	State of California Department of Housing and Community Development
HDPE	high-density polyethylene
I	Interstate

LAFCO	Local Agency Formation Committee
mgd	million gallons per day
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NAHC	California Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NOI	Notice of Intent
NOP	Notice of Preparation
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OCFCD	Orange County Flood Control District
OCWD	Orange County Water District
OHP	Office of Historic Preservation
OPR	Governor's Office of Planning and Research
OSHA	Occupational Health and Safety Administration
Pb	lead
PEIR	Program Environmental Impact Report
Plan	Collection System Improvement Plan
PM _{2.5}	fine particulate matter
PM ₁₀	particulate matter less than 10-microns
PVC	polyvinyl chloride
RHNA	Regional Housing Needs Assessments
RDMD	Orange County Resources and Development Management Department
ROC	reactive organic compounds
ROG	reactive organic gas
RPA	Registered Professional Archaeologist
RWQCB	Regional Water Quality Control Board
the Sanitation District	Orange County Sanitation District
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments

SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCG	Southern California Gas Company
SCRRA	Southern California Regional Rail Authority
SIP	state implementation plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SR	State Route
SWMPs	Storm Water Management Plans
SWPCP	Stormwater Pollution Control Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TRPH	total recoverable petroleum hydrocarbons
UBC	Uniform Building Code
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound

blank page

Executive Summary

ES 1.1 Introduction

The Orange County Sanitation District (Sanitation District) has proposed the Collection System Improvement plan (Plan). The proposed Plan is located within the Sanitation District service area, as shown in Figure 1-1, and includes potential improvements to the regional wastewater collection system to accommodate existing and planned growth in northern and central Orange County. The proposed improvements also will help to maintain, rehabilitate, and upgrade the existing facilities to ensure adequate collection system conditions for the future. The proposed Plan would implement 19 collection system improvement projects proposed to address existing and projected deficiencies in the regional trunk sewer system and repairs, replacements, and minor modifications to collection system facilities.

ES 1.2 Purpose of this Document

This Draft Program Environmental Impact Report (PEIR) addresses the potential environmental impacts that are anticipated to result from construction and operation of the proposed collection system improvement projects evaluated in the proposed Plan. This Draft PEIR has been prepared in accordance with the California Environmental Quality Act (CEQA). The Sanitation District is the Lead Agency for the CEQA process and has independently evaluated, directed, and supervised the preparation of this document.

ES 1.3 Objectives

CEQA requires that a PEIR include a statement of project objectives. The objectives will help the Sanitation District evaluate the proposed Plan and Plan alternatives and will help decision makers select a preferred alternative.

The objectives of the proposed Plan are as follows:

- Upgrade wastewater collection facilities to serve the needs of the Sanitation District service area through 2030
- Ensure compliance with State General Waste Discharge Requirements (GWDR) for wastewater collection agencies by providing adequate capacity within the regional wastewater conveyance system to convey wastewater flows and preventing sanitary sewer overflows
- Implement projects identified in the Capital Improvement Program (CIP) to ensure that wastewater facilities are adequately maintained and upgraded and that capital improvements are scheduled and completed in a timely and cost-effective manner

ES 1.3.1 Description of the Proposed Plan

The proposed Plan consists of 19 improvements to the regional collection system that would address existing and projected deficiencies in the collection system. Major improvements proposed to address existing and projected deficiencies in the regional trunk sewer system are listed in Table ES-1. See Figure 2-1 for locations of proposed improvements. In addition to these major improvements, the Sanitation District performs repairs, replacements, and minor modifications to collection system facilities on an ongoing basis. Most of the collection system improvements take place in street rights-of-way within existing easements. Many of the projects include rehabilitation of existing sewers. Appendix A includes figures depicting each improvement.

TABLE ES-1
Proposed Collection System Improvements

CIP No. ^a	Project Index ^b	Title	Location	Implementation Phase
01-101	SAN-01	Raitt and Bristol Street Sewer Extension	Santa Ana	2007-2010
01-17		Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2007-2011
02-49	SAR-02	Taft Branch Improvements	Orange	2012-2014
02-52	EUA-01	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010-2012
02-65	NHP-01,02	Newhope-Placentia and Cypress Trunk Replacement	Anaheim, Fullerton	2010-2015
02-71	EUB-01	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009-2011
03-55	KNT-01	Westside Relief Interceptor	La Palma, Cypress, Los Alamitos	2011-2013
03-58		Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010-2012
03-59	MLR-01	Miller-Holder Trunk Sewer Relief	Buena Park	2010-2012
03-60	KNT-02	Beach Trunk-Knott Interceptor Sewer Relief	Buena Park	2010-2012
05-47		Balboa Trunk Sewer Rehabilitation	Newport Beach	2007-2012
05-█		Newport Beach Force Main Upgrades	Newport Beach	2009-2012
05-61		Bayside Drive Improvement	Newport Beach	2008-2011
05-63	RPT-01	Dover Drive Trunk Sewer Relief	Costa Mesa, Newport Beach	2007-2011
06-17	BPT-01	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2007-2010
06-18	BKR-01	Fairview Road Trunk Sewer Relief	Costa Mesa	2007-2011
07-60	HATS-01	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2009-2011
07-62	SUN-01	Von Karman Trunk Sewer Relief	Irvine, Newport Beach	2011-2013
11-25	KNT-03 (30 -99 St. Plan)	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach, Seal Beach	2013-2015

^a Sanitation District Budget Fiscal Years 2006-07 and 2007-08

^b Sanitation District Strategic Plan Update, April 2006 (Job J-101)

ES 1.3.2 Project Alternatives

This Draft PEIR addresses two alternatives to the proposed Plan. Specifically, these include the (1) No Project Alternative and the (2) Trunk Capacity Optimization Alternative. These alternatives are summarized below.

No Project Alternative

The No Project Alternative for Sanitation District strategic planning efforts would be continued implementation of the existing program from the 1989 Master Plan and the 1999 Strategic Plan, which featured collection system improvements to accommodate planned growth in the Sanitation District service area. The CEQA Guidelines, Section 15126.6(e)(3)(A) and (B), indicate that the No Project Alternative in certain cases can be considered as the continuation of previously approved planning policies.

Trunk Capacity Optimization Alternative

The Trunk Capacity Optimization Alternative involves the installation and operation of control structures and equipment at key diversions. The ability to control flows at key points would allow the Sanitation District to vary flow diversions between trunks for dry- and wet-weather operations. Flow control features could allow the Sanitation District to optimize existing trunk capacity and minimize or defer installation of new sewers.

ES 1.4 Areas of Known Controversy

Section 15123 of the CEQA Guidelines requires an EIR to include areas of known controversy. Following a review of the comments received on the Notice of Preparation (NOP), the service area annexations proposed in the NOP were determined to be considered controversial. As stated in Section 1.0 of this EIR, the proposed Plan no longer includes service area annexations as originally proposed in the NOP issued on October 2, 2006. Thus, no areas of known controversy exist that are related to the proposed Plan.

ES 1.5 Summary of Plan Impacts and Mitigation

Table ES-2 provides a summary of potentially significant impacts by resource area, identifies the mitigation measures to be implemented to reduce or avoid those impacts, and shows the level of significance after mitigation. For each potentially significant impact, at least one mitigation measure has been proposed to reduce the significance of the environmental impact. Even with implementation of the identified mitigation measures, construction-related nitrogen oxides (NO_x) emissions, noise associated with construction, and construction-related lane and road closures would result in significant and unavoidable construction-related air quality, noise, and transportation and traffic impacts, including significant and unavoidable construction-related air quality, noise, and transportation and traffic cumulative impacts. All other identified potentially significant impacts resulting from construction and operation of the proposed collection system improvement projects evaluated in the proposed Plan can be mitigated to a less-than-significant level. Detailed information regarding these potential impacts is included in Chapter 3 of this Draft PEIR.

TABLE ES-2
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Air Quality		
Impact 3.2-1: Construction activities would generate NO _x emissions in exceedance of the daily significance threshold resulting in a short-term impact to air quality.	Mitigation Measure 3.2-1a: Contractors will maintain equipment engines in proper tune and operate construction equipment so as to minimize exhaust emissions.	Significant Unavoidable
	Mitigation Measure 3.2-1b: During construction, trucks and vehicles in loading or unloading queues will keep engines off, when not in use, to reduce vehicle emissions.	Significant Unavoidable
Impact 3.2-2: Construction activities would produce fugitive dust emissions resulting in a short-term impact to air quality.	Mitigation Measure 3.2-2: Contractors will reduce fugitive dust emissions through implementation of the following dust control measures: <ul style="list-style-type: none"> • Cover all trucks hauling soil, sand, or other loose materials • Apply water as necessary on all unpaved access roads, parking areas, and staging areas at construction sites • Sweep all paved access roads, parking areas, and staging areas at construction sites with water sweepers • Water or apply nontoxic soil stabilizers to exposed soil stockpiles or areas disturbed by construction activities which produce dust • Limit traffic speeds on unpaved roads to 15 mph 	Less Than Significant
Biological Resources		
Impact 3.3-1: Areas of natural habitat within the footprint of proposed activities could impact special-status biological resources.	Mitigation Measure 3.3-1: Evaluation of impacts to special-status plants, birds, mammals, and amphibians and reptiles will occur at the project level. Specifically, all areas of natural habitat within the footprint of proposed construction activities with potential to support special-status biological resources will be surveyed according to standard protocol. Where special-status biological resources are identified within the project footprint, appropriate avoidance, minimization, and mitigation measures will be implemented. Depending on the special-status biological resources present, measures could include the following: Where rare plants are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented: <ul style="list-style-type: none"> • Project design will be evaluated to determine if an exclusionary zone can be established around rare plant populations; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact. 	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
<p>Impact 3.3-1: Areas of natural habitat within the footprint of proposed activities could impact special-status biological resources. (cont.)</p>	<ul style="list-style-type: none"> • If rare plant populations cannot be avoided, appropriate salvage of plant propagules will be implemented, and suitable habitats for transplanting or re-establishing population will be identified and implemented. • Mitigation will include an analysis of suitability of alternative locations and identification of suitable propagation techniques. • Procurement of conservation easements will be implemented for alternative suitable habitats if the habitats are not already secured with conservation status. <p>Where special-status nesting birds are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:</p> <ul style="list-style-type: none"> • Project design will be evaluated to determine if a 500-foot minimum exclusionary zone can be established around active bird nests; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact. • If nesting birds or active nest sites cannot be avoided, construction will be timed to avoid the active nesting season (February to August), and construction activities will not commence in the vicinity of nests until young have fledged. <p>Where special-status mammals or bat roosts are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:</p> <ul style="list-style-type: none"> • Project design will be evaluated to determine if a 500-foot minimum exclusionary zone can be established around active bat roosts; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact. • Project design will be evaluated to determine if direct impacts to habitats supporting small mammals can be avoided with an exclusionary zone; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact. • Where avoidance is not feasible, trapping or hazing of special-status mammals to remove them from the project site will be implemented, and individuals will be relocated to suitable habitat nearby; temporary fencing will be installed to prohibit species from returning to the construction zone. • If construction adjacent to bat roosts cannot be avoided, construction will be timed to avoid the parturition period (February to August), and construction activities will not commence in the vicinity of maternity roosts until young are weaned. • If construction must occur during the parturition period, then active bat roosts will be excluded prior to onset of breeding. 	<p>Less Than Significant (cont.)</p>

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.3-1: Areas of natural habitat within the footprint of proposed activities could impact special-status biological resources. (cont.)	<p>Where special-status amphibians and reptiles are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:</p> <ul style="list-style-type: none"> • Project design will be evaluated to determine if direct impacts to habitats supporting amphibians or reptiles can be avoided with an exclusionary zone; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact. • Where avoidance is not feasible, trapping or hazing of special-status amphibians or reptiles to remove them from the project site will be implemented, and individuals will be relocated to suitable habitat nearby; temporary fencing will be installed to prohibit species from returning to the construction zone. 	Less Than Significant (cont.)
Impact 3.3-2: Runoff from construction activities could impact aquatic fisheries.	<p>Mitigation Measure 3.3-2:</p> <p>To avoid impacts to aquatic fisheries, best management practices will be implemented to avoid contaminant runoff from construction practices. This will include the following:</p> <ul style="list-style-type: none"> • Equipment will not be operated in areas of ponded or flowing water. Stationary equipment such as motors, pumps, generators, and welders will be located a minimum of 200 feet outside aquatic and wetland habitats; construction staging areas, stockpiling, and equipment storage will be located a minimum of 200 feet outside aquatic and wetland habitats. • Construction vehicles and equipment will be checked periodically to ensure that proper working conditions with no potential for fugitive emissions of oil and other hazardous products exists. Refueling or lubrication of vehicles and cleaning of equipment, or other activities that involve open use of fuels, lubricants, or solvents, will occur in upland locations at least 200 feet away from aquatic or wetland habitats. • Temporary sediment-retention structures, hay bales, or silt fencing will be placed downstream of construction areas; sediment-retention devices will prevent sediment-laden water from draining offsite; sediment-retention devices structures will be maintained and repaired after flood events. 	Less Than Significant
Impact 3.3-3: Project activities within jurisdictional areas, including wetlands, would result in impacts to biological resources.	<p>Mitigation Measure 3.3-3:</p> <p>Direct impacts to jurisdictional areas including wetlands generally will be avoided by identifying these communities at the project analysis level and designing project components to avoid these areas. However, if impacts to jurisdictional wetlands cannot be avoided, then the following mitigation will be implemented:</p> <ul style="list-style-type: none"> • Delineation of affected jurisdictional sites will be implemented and impacts analyzed; this information will support permit applications to the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. • A proposed mitigation plan to compensate for impacts to jurisdictional areas will be developed and approved by the USACE; it will be implemented to compensate for impacts. • To avoid indirect impacts to jurisdictional areas from contaminant runoff, Mitigation Measure 3.3-2 will be implemented. 	Less Than Significant

TABLE ES-2 (cont.)
 Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Cultural Resources		
Impact 3.4-1: Project activities could affect known, significant archaeological, paleontological, and historical resources	<p>Mitigation Measure 3.4-1:</p> <p>During preliminary design a Registered Professional Archaeologist (RPA) will complete a literature review using the archives of the South Central Coastal Information Center of the California Historical Resources Information System (CHRIS), located at California State University Fullerton, and other sources as needed to identify previous cultural resources studies and previously recorded archaeological sites within close proximity to the project alignment. The literature search will also include a search of the Sacred Lands Database maintained by the California Native American Heritage Commission (NAHC).</p> <p>Using the results of the literature review in part, the archaeologist will develop a cultural resources sensitivity map for the project alignment, followed by a determination of specific areas of the project that may require preconstruction survey, subsurface testing, or construction monitoring. Cultural resources identified as a result of the literature review, field survey, testing, or construction monitoring will be evaluated by a Registered Professional Archaeologist to determine whether they meet the criteria for designation as a historical resource (14 CCR § 4850, PRC § 21084.1, 14 CCR § 15064.5(3)) or a “unique archeological resource” as defined in PRC § 21083.2. If resources are present on state lands, Office of Historic Preservation (OHP) will be consulted (PRC § 21083.2).</p> <p>For sites within project alignment where human remains have been previously documented, the Sanitation District would enter into a written agreement between an archaeological consultant, to be retained by the Sanitation 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 will define “associated burial goods” with reference to PRC § 5097.94, 5097.98, and 5097.99 and Health and Safety Code § 7050.5.</p>	Less Than Significant
Impact 3.4-2: Construction excavation could expose, encounter, or accidentally discover cultural resources, including buried human remains.	<p>Mitigation Measure 3.4-2a:</p> <p>Subsurface construction has the potential for exposing significant subsurface cultural resources. Due to the likelihood of encountering cultural resources, the Sanitation District will implement the following prior to commencement of construction activities:</p> <ul style="list-style-type: none"> • Prior to construction, contractors, and Sanitation District staff will receive an archaeological orientation from a professional archaeologist regarding the types of resources that could be uncovered during construction activities and the identification of these resources. The orientation also will cover procedures to follow in the case of any archaeological discovery. 	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.4-2: Construction excavation could expose, encounter, or accidentally discover cultural resources, including buried human remains. (cont.)	<p>Mitigation Measure 3.4-2b:</p> <p>If cultural resources are encountered at any time during project excavation, construction personnel will avoid altering these materials and their context until a qualified archaeologist has evaluated the situation. Project personnel will not collect or retain cultural resources. Prehistoric resources include, but are not limited to, chert or obsidian flakes, projectile points, mortars and pestles, 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.</p>	Less Than Significant
	<p>Mitigation Measure 3.4-2c:</p> <p>In the event accidental discovery or recognition of any human remains, the county coroner will be notified immediately, and construction activities will be halted. If the remains are found to be Native American, the Native American Heritage Commission will be notified within 24 hours. Guidelines of the Native American Heritage Commission will be adhered to in the treatment and disposition of the remains.</p>	Less Than Significant
Geology and Soils		
Impact 3.5-1: Project facilities would be located in areas susceptible to seismicity and groundshaking.	<p>Mitigation Measure 3.5-1:</p> <p>The Sanitation District will design and construct new facilities in accordance with Sanitation District standards and/or applicable building codes.</p>	Less Than Significant
Impact 3.5-2: Project facilities could be placed in areas with the potential for liquefaction.	<p>Mitigation Measure 3.5-2:</p> <p>Soil surveys will be conducted to determine the liquefaction potential along the collection system improvement routes. Pipelines will be installed within consolidated, engineered backfill.</p>	Less Than Significant
Impact 3.5-3: Project facilities could be placed in soils susceptible to settlement.	<p>Mitigation Measure 3.5-3:</p> <p>Areas of peat bogs will be consolidated before construction or peat material will be removed prior to construction. Pipelines will be installed within consolidated, engineered backfill.</p>	Less Than Significant

TABLE ES-2 (cont.)
 Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Hazards and Hazardous Materials		
Impact 3.6-1: Transportation of hazardous materials associated with Project activities could result in a hazards and hazardous materials related impact.	Mitigation Measure 3.6-1: Transportation of hazardous materials will be in accordance with all federal, state, and local regulations.	Less Than Significant
Impact 3.6-2: Storage of hazardous materials associated with Project activities could result in a hazards and hazardous materials related impact.	Mitigation Measure 3.6-2: Prior to storage of hazardous materials, a Hazardous Materials Inventory and Business Emergency Plan will be filed with the Orange County Fire Authority.	Less Than Significant
Impact 3.6-3: Accidental spill of hazardous materials associated with Project activities could result in a hazards and hazardous materials related impact.	Mitigation Measure 3.6-3: In the event of an accidental spill, containment and cleanup will occur in conformance with the spill response and waste disposal procedures identified in the Material Safety Data Sheets (MSDS) and in the Business Emergency Plan.	Less Than Significant
Impact 3.6-4: Improper disposal of hazardous materials could result in a hazards and hazardous materials related impact.	Mitigation Measure 3.6-4: Disposal of hazardous waste generated as part of construction or operation activities will occur at a properly permitted facility in accordance with federal and state laws.	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.6-5: Improperly abandoned oil wells may exist within excavation alignments	<p>Mitigation Measure 3.6-5a:</p> <p>Prior to construction, the Sanitation District will identify existing and abandoned oil production wells within the project area using California Department of Conservation, 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.</p>	Less Than Significant
	<p>Mitigation Measure 3.6-5b:</p> <p>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.</p>	Less Than Significant
Impact 3.6-6: Construction activities could encounter areas of contamination, including contamination associated with leaking underground storage tanks.	<p>Mitigation Measure 3.6-6:</p> <p>During project design, a database screening would be completed for listing of all known contamination sites, including contamination associated with leaking underground storage tanks. Additionally, soils sampling would be completed for the presence of total recoverable petroleum hydrocarbons (TRPH), volatile organics, and metals. In the event of suspected contamination from adjacent land uses, soil sampling would be completed to verify hazardous substances. Under the Sanitation District's standard construction specifications, the Sanitation District and its contractors would comply with all applicable regulatory requirements for the assessment, testing, remediation, removal, and disposal of hazardous wastes/materials.</p>	Less Than Significant
Hydrology and Water Quality		
Impact 3.7-1: Construction activities could result in erosion and siltation related stormwater impacts to surface water quality.	<p>Mitigation Measure 3.7-1:</p> <p>Prior to the initiation of ground-disturbing activities for sewer improvements with surface disturbances of 1 acre or more, the Sanitation District (or its designee) will obtain approval from the State Water Resources Control Board (State Board) under the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (General Permit). This includes submitting a Notice of Intent (NOI) to the State Board and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). For sewer improvements with less than 1 acre of surface disturbances, the Sanitation District (or its designee) will develop and implement a Stormwater Pollution Control Plan (SWPCP) prior to initiating ground-disturbing activities. The SWPPP or SWPCP will identify potential sources of sediment and other pollutants that could affect the quality of the stormwater discharge, and will specify best management practices (BMPs) to prevent or minimize the introduction of sediment and pollutants into surface waters from a construction site. BMP methods of erosion and sediment control might include straw bales, silt fences, and other control techniques. Monitoring and maintenance requirements will be specified in the SWPPP or SWPCP.</p>	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.7-2: Project activities within jurisdictional areas, including wetlands, would result in impacts to biological resources. Construction activities could also result in impacts to jurisdictional areas associated with equipment refueling and vehicle use.	Mitigation Measure 3.7-2: Prior to initiating activities within Waters of the United States, including jurisdictional wetlands, the Sanitation District (or its designee) will obtain the approved 401 Water Quality Certification from the Regional Water Quality Control Board (Regional Board), the 1600 Streambed Alteration Agreement from California Department of Fish and Game (CDFG), and the 404 Permit from the USACE. Vehicle maintenance and fueling will be restricted from areas within 50 feet of the bank of a jurisdictional area. Following construction within a jurisdictional area, the affected area will be returned to preconstruction grade.	Less Than Significant
Impact 3.7-3: Construction dewatering discharges could result in impacts to surface water quality.	Mitigation Measure 3.7-3: Prior to the initiation of construction dewatering activities the Sanitation District (or its designee) will obtain authorization from the Santa Ana Regional Water Quality Control Board and will comply with the NPDES Permit No. CAG998001, General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality, for insignificant discharges to surface water bodies, including but not limited to discharge of dewatered groundwater.	Less Than Significant
Land Use and Planning		
Impact 3.8-1: Construction activities could impact adjacent property owners, including businesses and places of worship.	Mitigation Measure 3.8-1: The Sanitation District will provide notices of construction to adjacent property owners, including businesses and places of worship, prior to initiating construction activities. Notices of construction will include a contact and telephone number of Sanitation District staff that can be contacted regarding questions or concerns about construction activities.	Less Than Significant
Impact 3.8-2: Construction activities could affect 24-hour emergency access at adjacent fire stations, police stations, and hospitals.	Mitigation Measure 3.8-2: The Sanitation District will coordinate with officials of adjacent fire stations, police stations, and hospitals to ensure that 24-hour emergency access is available.	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.8-3: Construction activities could result in disruption of access to adjacent land uses including schools.	Mitigation Measure 3.8-3: To minimize disruption of access to driveways of adjacent land uses including schools during construction, the Sanitation District (or its contractor) will maintain steel trench plates to provide vehicle access across trenches.	Less Than Significant
Impact 3.8-4: Construction activities could result in disruption to adjacent businesses.	Mitigation Measure 3.8-4: To minimize disruption to adjacent businesses during construction, the Sanitation District will provide temporary signage indicating that businesses are open.	Less Than Significant
Noise		
Impact 3.9-1: Construction activities could result in short-term noise disruptions to surrounding areas.	Mitigation Measure 3.9-1: To minimize noise disruption during construction, construction activities will generally be scheduled to occur during times allowed by applicable codes, noise ordinances or permits. Additionally, the following mitigations could be implemented as required: <ul style="list-style-type: none"> • Noise reduction measures such as sound blankets or temporary sound walls could be used to reduce noise generation from stationary noise generating equipment during construction. • Stationary noise generating equipment such as generators could be placed within the jacking pits where possible to reduce noise during construction. • Pile driving activities or other particularly disruptive construction could be limited to specific times agreed to with agencies of jurisdiction or adjacent property owners prior to construction. • Where appropriate, noise monitoring at the closest sensitive receptors could be conducted and reports submitted to the city of jurisdiction. 	Significant Unavoidable
Impact 3.9-2: Construction activities could expose persons to, or generate, groundborne vibration.	Mitigation Measure 3.9-2: Project level review will be completed and will identify specific areas susceptible to groundborne vibration. For such identified areas, construction notification would occur and construction activities would be limited to times allowed by applicable codes, noise ordinances or permits.	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Public Services		
Impact 3.11-1: Traffic impacts associated with construction activities could impact police departments, fire departments, local service providers, and schools.	Mitigation Measure 3.11-1: The contractor will provide a copy of the Traffic Control Plan to the Sheriff's Department, local police departments, and fire departments prior to construction. The Sanitation District will provide 72-hour notice of construction to the local service providers of individual pipeline segments.	Less Than Significant
Impact 3.11-2: Construction activities could impact access to fire stations and emergency medical facilities.	Mitigation Measure 3.11-2: Access to fire stations and emergency medical facilities will be maintained on a 24-hour basis, and at least one access to medical facilities will be available at all times during construction. The Sanitation District will notify appropriate officials at the medical facility regarding construction schedule.	Less Than Significant
Impact 3.11-3: Open trenches associated with construction activities could result in a safety impact.	Mitigation Measure 3.11-3a: Construction areas will be secured or trenches will be backfilled promptly after pipeline installation. If installation is incomplete, steel trench plates will be used to cover open trenches as appropriate for the specific site.	Less Than Significant
	Mitigation Measure 3.11-3b: Construction contractors will ensure that adequate barriers are established to prevent pedestrians from entering the open trenches of an active construction area. Warnings will be posted sufficient distances from the work area to allow pedestrians to cross the street at controlled intersections.	Less Than Significant
	Mitigation Measure 3.11-c: To ensure aesthetic consistency and public safety, construction contractors will restore disturbed areas along the alignment as mutually agreed by the Sanitation District and local jurisdictions prior to construction.	Less Than Significant
Impact 3.11-4. During construction activities impacts associated with the vandalism of equipment at staging and storage areas could occur.	Mitigation Measure 3.11-4: Construction contractors will be responsible for providing appropriate security measures for all equipment staging and/or storage areas needed for sewer improvement projects.	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.11-5: Improper disposal of construction refuse would impact public services.	Mitigation Measure 3.11-5a: Construction contractors will dispose of construction refuse at approved disposal locations. Contractors will not be permitted to dispose of construction debris in residential or business containers.	Less Than Significant
	Mitigation Measure 3.11-5b: Construction contractors will be required to keep construction and staging areas orderly, free of trash and debris.	Less Than Significant
Impact 3.11-6: Project activities could result in impacts associated with disruptions to existing utilities.	Mitigation Measure 3.11-6a: A detailed study identifying utilities along the pipeline routes will be conducted during the design stages of sewer improvement projects. For segments with potential adverse impacts, the following mitigations will be implemented. <ul style="list-style-type: none"> • Utility excavation or encroachment permits will be required from the appropriate agencies. These permits include measures to minimize utility disruption. The Sanitation District and its contractors will comply with permit conditions, and such conditions will be included in construction contract specifications. • Utility locations will be verified through field surveys. • Detailed specifications will 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 will be notified of Sanitation District construction plans and schedule. Arrangements will be made with these entities regarding protection, relocation, or temporary disconnection of services. 	Less Than Significant
	Mitigation Measure 3.11-6b: To reduce potential impacts associated with utility conflicts, the following measures will be implemented in conjunction with 3.11-6a. <ul style="list-style-type: none"> • Disconnected cables and lines will be promptly reconnected. • The Sanitation District will observe Department of Health and Safety (DHS) standards, which require a 10-foot horizontal separation between parallel sewer and water mains and 1-foot vertical separation between perpendicular water and sewer line crossings. In the event that the separation requirements cannot be maintained, the Sanitation District will obtain DHS variance through provisions of water encasement, or other means deemed suitable by DHS, and by encasing water mains in protective sleeves where a new sewer force main crosses under or over an existing sewer main. 	Less Than Significant
	Mitigation Measure 3.11-6c: The construction contractor will comply with Sanitation District requirements and specifications to protect existing utility lines.	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.11-7: Projects could affect the compatibility of existing and future projects.	Mitigation Measure 3.11-7: The Sanitation District shall coordinate with the Orange County Resources and Development Management Department (RDMD) and other jurisdictions as required to ensure compatibility and joint-use feasibility with existing and future projects.	Less Than Significant
Transportation and Traffic		
Impact 3.12-1: Construction activities will occur within city streets and would impact traffic.	Mitigation Measure 3.12-1a: Traffic control plans will be prepared by a qualified professional engineer as required prior to the construction phase of each sewer line project.	Less Than Significant
	Mitigation Measure 3.12-1b: Traffic control plans will consider the ability of alternative routes to carry additional traffic and will 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, sidewalks, bikeways, and equestrian trails to the greatest extent feasible.	Less Than Significant
	Mitigation Measure 3.12-1c: Encroachment permits for all work within public rights-of-way will be obtained from each appropriate agency prior to commencement of any construction. Agencies could include California Department of Transportation (Caltrans), RDMD and the various city agencies where work will occur. The Sanitation District will comply with traffic control requirements, as identified by Caltrans and the affected local jurisdictions.	Less Than Significant
	Mitigation Measure 3.12-1d: Traffic control plans will comply with the Work Area Traffic Control Handbook and/or the Manual on Uniform Traffic Control Devices, as determined by each affected local agency, to minimize any traffic and pedestrian hazards that exist during project construction.	Less Than Significant
	Mitigation Measure 3.12-1e: Public roadways will be restored to their existing condition after project construction is completed.	Less Than Significant
	Mitigation Measure 3.12-1f: The Sanitation District 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.	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.12-1: Construction activities will occur within city streets and would impact traffic. (cont.)	<p>Mitigation Measure 3.12-1g: 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 will be maintained to allow delivery of emergency services.</p>	Less Than Significant
	<p>Mitigation Measure 3.12-1h: Orange County Transportation Authority will be contacted when construction affects roadways that are part of the OCTA bus transit network. Adequate procedures will be implemented to keep bus routes and station accessible to users.</p>	Less Than Significant
	<p>Mitigation Measure 3.12-1i: Construction traffic, mainly trucks, will be routed in a way to minimize impacts to sensitive neighborhoods. In addition, storage and staging of materials and equipment will be done after obtaining a Temporary Use Permit, when needed.</p>	Less Than Significant
	<p>Mitigation Measure 3.12-1j: An effort will be made to solicit input from residents in the neighborhoods of the proposed improvements. These inputs will be considered in the planning phase through construction to mitigate the resident's concerns.</p>	Less Than Significant
	<p>Mitigation Measure 3.12-1k: For sewer improvements that occur within railroad rights-of-way, the Sanitation District will follow the Southern California Regional Rail Authority (SCRRA) procedures for right-of-way encroachment – SCRRA Form No. 36. The procedures for temporary encroachment calls for: (1) the submittal of a written statement of 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 Sanitation District must comply with the rules and regulations of this agreement at all times when working on SCRRA property, including those outlines 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.”</p>	Less Than Significant

TABLE ES-2 (cont.)
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measure	Level of Significance After Mitigation
Impact 3.12-2: Construction of collection system improvement projects would include lane closures and limited road closures that would worsen LOS along local roadways.	Mitigation Measure 3.12-2a: Where lane closures are necessary for construction of sewer improvement projects, all construction equipment will be staged within the closed lanes or in staging areas outside of city streets.	Significant Unavoidable
	Mitigation Measure 3.12-2b: Where lane or road closures are necessary for construction of sewer improvement projects, adequate signage will be provided informing local residents and business owners of construction activities prior to commencement of construction activities.	Significant Unavoidable
	Mitigation Measure 3.12-2c: Where lane or road closures are necessary for construction of sewer improvement projects, cones and/or traffic guards will be used to clearly indicate the locations and directions of temporarily altered traffic lanes.	Significant Unavoidable
	Mitigation Measure 3.12-2d: The construction technique for implementation of the proposed sewer lines, such as tunneling, cut-and-cover with partial street closure, or cut-and-cover with full street closure, will 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.	Significant Unavoidable
	Mitigation Measure 3.12-2e: Public streets generally will be kept operational during construction, particularly in the morning and evening peak hours of traffic. Lane closures will be minimized during peak traffic hours.	Significant Unavoidable
	Mitigation Measure 3.12-2f: Where road closures are necessary for construction of sewer improvement projects, signage will be posted informing motorists of road closures and delineating suitable detours, both prior to and during the duration of construction activities. Prior to initiating a road closure, coordination with local jurisdictions, including Caltrans, will occur.	Significant Unavoidable

1.0 Introduction

The Orange County Sanitation District (the Sanitation District) is the Lead Agency for the preparation of this Program Environmental Impact Report (PEIR) pursuant to Section 15168 of the California Environmental Quality Act (CEQA) for the proposed Collection System Improvement Plan (Plan). The Plan describes potential improvements to the regional wastewater collection system to accommodate existing and planned growth in northern and central Orange County. The Plan no longer includes service area annexations as originally proposed in the Notice of Preparation (NOP) issued on October 2, 2006.

1.1 Background

The Sanitation District, formed in 1946 under the County Sanitation District Act of 1923, provides wastewater services to approximately 2.3 million people within a 470-square-mile area of northern and central Orange County. The Sanitation District operates and maintains a 410-mile-long regional wastewater conveyance system, 17 sewage pumping facilities, and two wastewater treatment plants. The Sanitation District also operates and maintains local sewers in the City of Tustin and in unincorporated areas north of Tustin. Figure 1-1 shows the Sanitation District service area and its collection and treatment facilities. The regional system conveys sewage from local sewer lines in 21 cities and 3 special districts to the two regional Sanitation District treatment plants. The two treatment plants receive wastewater from 11 major trunk sewers.

The Sanitation District treatment plants treat approximately 250 million gallons per day (mgd) of wastewater as specified in the National Pollutant Discharge Elimination System (NPDES) permit issued jointly by the Santa Ana Regional Water Quality Control Board (Regional Board) and the United States Environmental Protection Agency (USEPA). Approximately 7 to 10 mgd of treated wastewater are provided to the Orange County Water District (OCWD) for reclamation, and approximately 240 mgd of treated wastewater are discharged to the Pacific Ocean through an offshore pipeline, which extends approximately 5 miles offshore.

The Sanitation District and its wastewater facilities are subject to the California General Waste Discharge Requirements (GWDR) for Sanitary Sewer Systems Order No. 2006-0003-DWQ (Order), which was adopted by the State Water Resources Control Board (State Board) on May 2, 2006. The Order requires the Sanitation District to provide adequate capacity for conveyance of wastewater flows. The Order also requires the Sanitation District to maintain a System Evaluation and Capacity Assurance plan for its collection system.

To comply with this Order, the Sanitation District completed a capacity analysis of its trunk sewer system as part of its 2006 Strategic Plan Update (Job No. J-101). This analysis supersedes the collection system element of the Sanitation District 1999 Strategic Plan. The capacity analysis, based on recent growth projections for Orange County and simulations of flows in the Sanitation District collection system under dry and wet weather conditions, identified portions of the collection system with potential capacity deficiencies through

2030. The 2006 Strategic Plan Update is also pertinent to the Sanitation District Capital Improvement Program (CIP), which is updated annually to reflect new information on sewer conditions, wastewater flows, and Orange County demographics. The CIP is reviewed and revised to ensure that wastewater facilities are maintained and upgraded adequately, and that CIP projects are scheduled and completed in a timely and cost-effective manner. Major improvements that are proposed to address existing and projected deficiencies in the regional trunk sewer system, as well as repairs, replacements, and minor modifications to collection system facilities are described in Section 2.0 (Plan Description) of this PEIR. Each of the collection system improvements is shown in figures in Appendix A.

1.2 Environmental Document

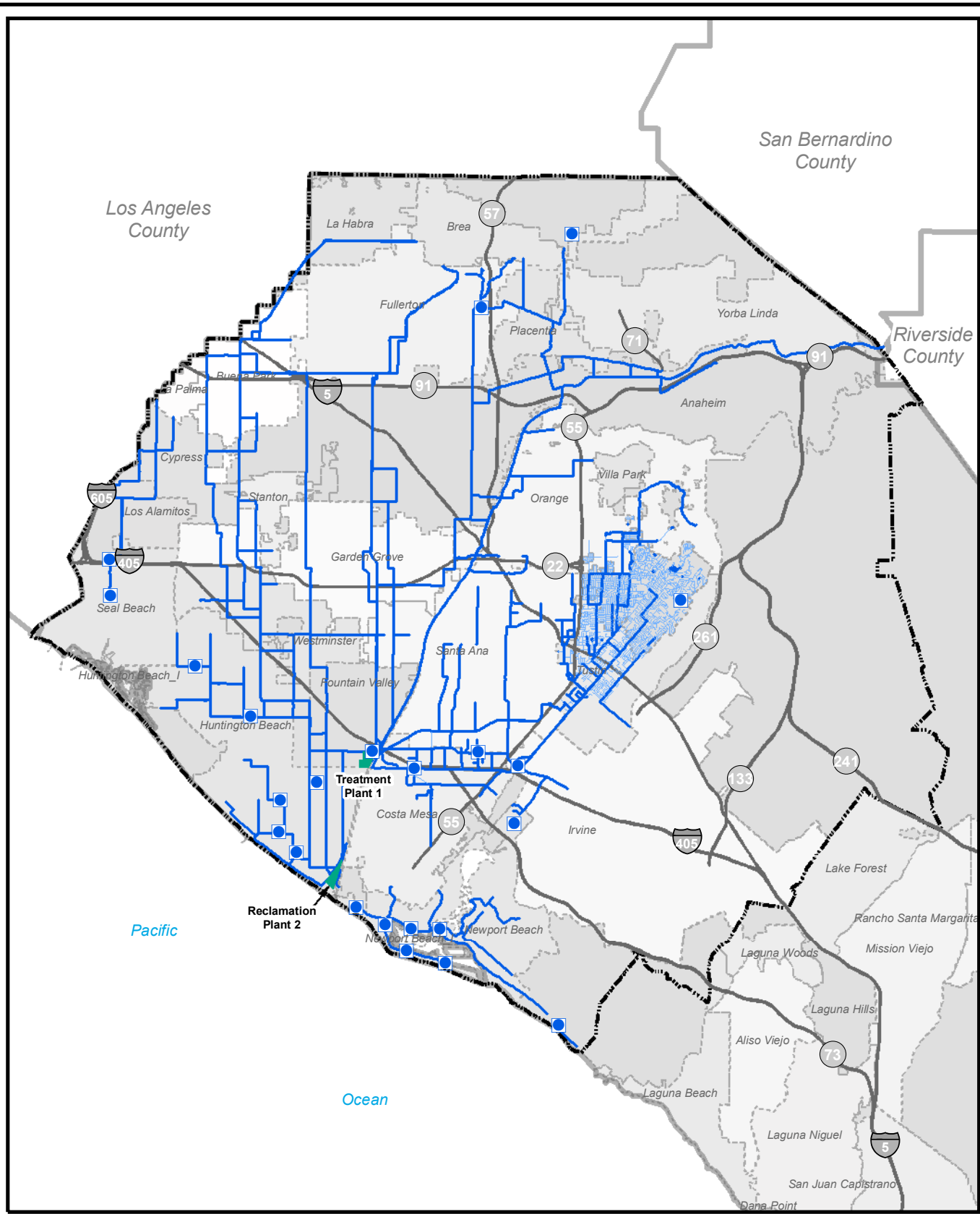
CEQA requires every proposed project in the state of California to be examined for potential effects on the environment. Pursuant to Section 15168 of the State of California CEQA Guidelines, a PEIR is an Environmental Impact Report (EIR), which could be prepared on a series of actions that can be characterized as one large project and are related geographically as logical parts in the chain of contemplated actions; in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or, as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways. Additionally, a PEIR allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. As the lead agency under CEQA, the Sanitation District has determined that the proposed Plan has the potential to have a significant effect on the environment. As such, this Draft PEIR has been prepared to provide objective information to public decision makers and to the general public regarding potential environmental effects of the proposed Plan. Environmental impacts are measured against the baseline physical conditions (Section 15125[a], CEQA Guidelines).

1.3 Plan Objectives

CEQA requires a PEIR to include a statement of project objectives. The objectives will help the Sanitation District evaluate the proposed Plan and its alternatives. Additionally, objectives will help decision makers select the preferred alternative.

The objectives of the proposed Plan are as follows.

- Upgrade wastewater collection facilities to serve the needs of the Sanitation District service area through 2030
- Ensure compliance with GWDR for wastewater collection agencies by providing adequate capacity within the regional wastewater conveyance system to convey wastewater flows and preventing sanitary sewer overflows
- Implement projects identified in the CIP to ensure that wastewater facilities are maintained and upgraded adequately and that capital improvements are scheduled and completed in a timely and cost-effective manner



\\galtgis2\ocsd\2007\Mapfiles\Feb07\Fig01_ExistFac_ap.mxd

LEGEND

OCSD Existing Facilities ^{OCSD}

- Pump Station
- OCSD Sewer
- OCSD-Maintained Sewer
- OCSD Treatment Plant

OCSD Service Area Boundary ^{OCSD}

- Base Map Layers ^{TBros}
- Major Transportation
 - City



Sources: OCSD - Orange County Sanitation District GIS 2006; TBros - Thomas Brothers 2002.

Figure 1-1
Existing Service Area
and Wastewater Facilities
Orange County Sanitation District

blank page

1.4 Environmental Review Process

The Sanitation District issued a CEQA NOP to the Governor's Office of Planning and Research (OPR) State Clearinghouse on October 2, 2006. In accordance with CEQA Guidelines, a 30-day comment period (ending November 6, 2006) on the NOP (included in this document as Appendix B1) was established. During the 30-day comment period, the Sanitation District held a public meeting to present information about the proposed plan to interested parties, to respond to informal questions, and to take formal comments to be addressed during preparation of the Draft PEIR. The public meeting was held at the Sanitation District offices, in the City of Fountain Valley, on October 17, 2006; five people attended the meeting. Appendix B2 includes a copy of the sign-in sheet from the public meeting. Appendix B3 contains copies of comment letters that were received during the comment period. All comments that the Sanitation District received during the public comment period have been considered during preparation of this Draft PEIR.

Following a review of the comments received on the NOP, the Plan no longer includes service area annexations as proposed in the NOP.

This Draft PEIR has been released for a 45-day review period to the public, including interested individuals, organizations, government representatives, and agencies. The Sanitation District provided notice of availability of the Draft PEIR with a Notice of Completion sent to the California OPR State Clearinghouse. Following the public review, the Sanitation District will prepare a Final PEIR that will incorporate and respond to comments received during public review of the Draft PEIR.

1.5 Intended Uses of this PEIR

This Draft PEIR will be used by various local, state, and federal agencies (including the Sanitation District) in their consideration of actions required for the proposed Plan. Also, construction and operation of the proposed Plan would require certain state and local permits. Table 1-1 identifies the agencies and the potential permits or approvals that might be required. Additional environmental review would be completed at a project level to meet permit requirements for individual construction projects.

1.6 Draft PEIR Content and Organization

This Draft PEIR is organized in seven chapters as follows:

Executive Summary – Includes a summary of the potential environmental impacts from implementation of the proposed Plan, including a complete list of mitigation measures proposed to mitigate the potential environmental impacts to a level that is less than significant.

Chapter 1 – Provides an overview of the PEIR.

Chapter 2 – Provides a description of the proposed and potential collection system improvements.

TABLE 1-1
Permits or Approvals that Might be Required

Agency	Permit or Approval	Activity Requiring Permit or Approval
Local		
Resources and Development Management Department	Road Encroachment Permit, Flood Control Facility Permit, Harbors, Beaches, and Parks Encroachment Permit	Work within Orange County roads, flood control facilities, harbors, beaches, and parks
Orange County Transportation Authority (OCTA)	Construction Notification	Construction activities within local roadways
State		
Regional Water Quality Control Board (RWQCB), Santa Ana Region	401 Certification	Work within waters of the United States, including jurisdictional wetlands
RWQCB, Santa Ana Region	De Minimus NPDES Permit	Construction dewatering discharge
State Water Resources Control Board (SWRCB), RWQCB, Santa Ana Region	NPDES General Construction Storm Water Permit and Storm Water Pollution Prevention Plan	Ground-disturbing activities 1-acre or more
California Department of Transportation (Caltrans)	Encroachment Permit	Work within Caltrans transportation facilities
California Public Utilities Commission (CPUC)	Minor Alteration to Existing Crossing (General Order 88A)	Work within existing public highway-rail crossings
California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)	Notice of Intent to Abandon Well - Oil and Gas (Form OG108)	Oil and gas well abandonment
State Parks	Right of Way/Easement Across State Parklands	Facility installation within State parks
Federal		
United States Army Corps of Engineers (USACE)	404 Permit	Work within Waters of the United States, including Jurisdictional Wetlands
USACE	Right-of-Entry Permit	Work within USACE-owned property, including Fullerton Dam

Chapter 3 – Describes individual resource areas potentially affected by the proposed Plan, including the regional environmental setting, potential impacts, and proposed mitigation measures. Resource areas addressed in this Draft PEIR include air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, and transportation/traffic.

Chapter 4 – Addresses the Project Alternatives, including the No Project Alternative.

Chapter 5 – Consists of other topics that CEQA requires to be addressed in the Draft PEIR, including an analysis of cumulative impacts that might occur as a result of implementation

of the proposed plan in conjunction with other area projects and a discussion of potential growth-inducing impacts and significant irreversible environmental effects.

Chapter 6 – Provides a list of preparers of this document.

Chapter 7 – Includes a list of references used in preparation of this Draft PEIR.

blank page

2.0 Plan Description

2.1 Proposed Plan

The proposed Plan consists of improvements to the regional collection system that would address existing and projected deficiencies in the collection system. The proposed major improvements that will address existing and projected deficiencies in the regional trunk sewer system are listed in Table 2-1 and are described below. See Figure 2-1 for locations of the proposed improvements. In addition to these major improvements, the Sanitation District performs repairs, replacements, and minor modifications to collection system facilities on an ongoing basis. Most of the collection system improvements take place in street rights-of-way within existing easements. Many of the projects include rehabilitation of existing sewers. Appendix A includes figures depicting each improvement.

Proposed improvements associated with capacity deficiencies would accommodate planned growth and would reduce surcharging (i.e., hydraulic overload) in sewers during wet weather. Typically, capacity improvements consist of replacement of the existing pipe with a larger-diameter pipe or installation of a new sewer parallel to the existing sewer. Based on ongoing flow monitoring results, condition assessment, preliminary design, and coordination with local agencies, the proposed improvements and implementation schedule listed in Table 2-1 could change. Additionally, new improvements, similar to those described, are likely to be identified in future updates to the CIP.

2.1.1 Project Descriptions

Raitt and Bristol Streets Sewer Extension (01-101)

This project would replace the existing sewer in Myrtle Street between Raitt and Bristol Streets in Santa Ana. The new pipe would relieve existing capacity deficiencies in the sewer systems of the Sanitation District and the City of Santa Ana. The scope of the project includes replacement of approximately 2,360 feet of 21-inch pipe with 24-inch pipe, replacement of a 21-inch siphon and installation of a new 8-inch pipe to connect house laterals. The City of Santa Ana owns the existing 21-inch sewer in Myrtle Street. The Sanitation District proposes to take ownership of the Myrtle Street trunk sewer as part of the project.

Santa Ana Trunk Sewer Rehabilitation (01-17)

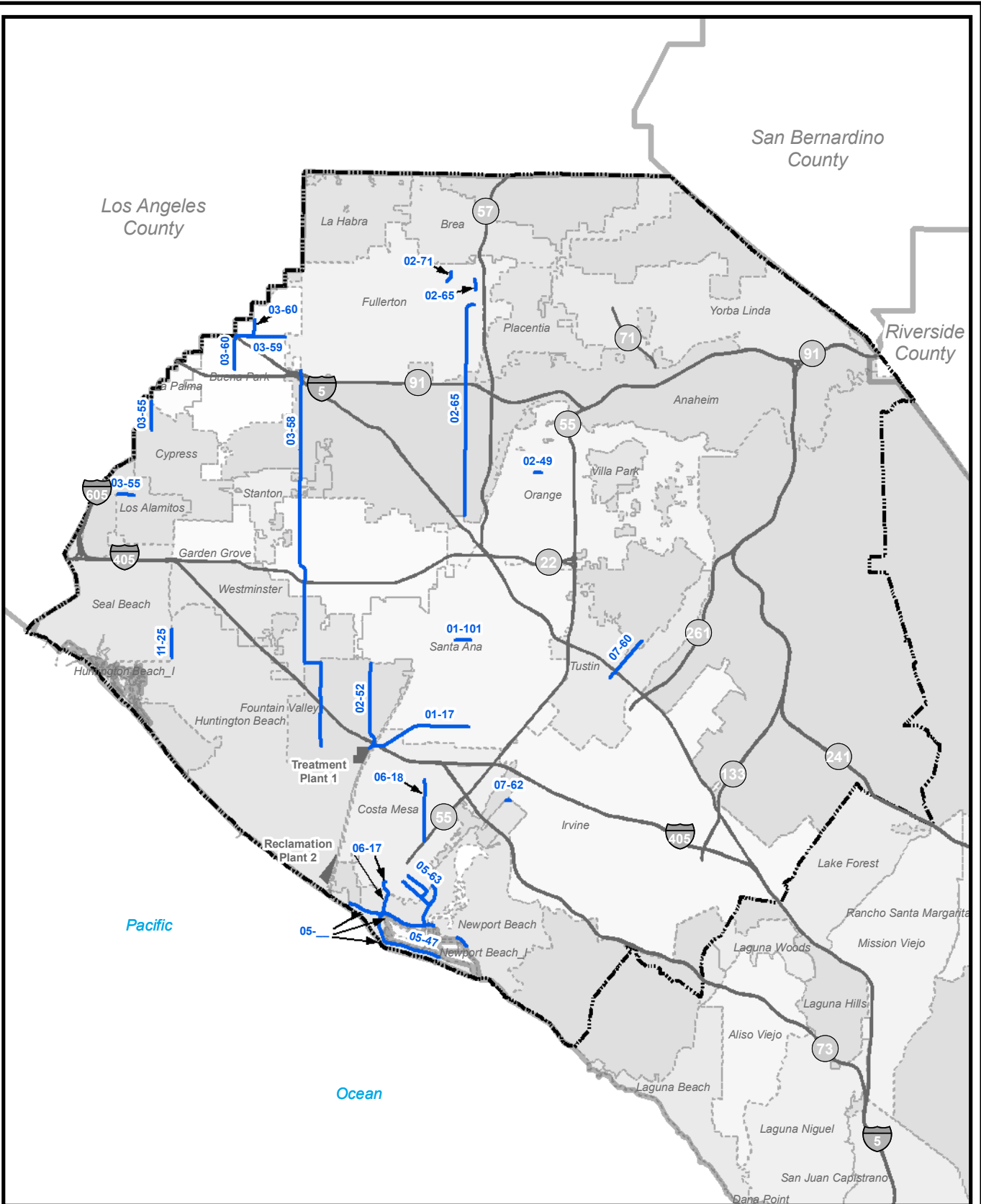
This project would rehabilitate a section of existing pipeline in the Santa Ana Trunk sewer from Bristol Street in Santa Ana to the Sanitation District Reclamation Plant No. 1 in Fountain Valley. The scope of the project includes rehabilitation of roughly 33 concrete manholes and approximately 17,000 feet of unlined 42-inch, 48-inch, and 66-inch-diameter concrete pipe. A liner would be installed in the pipe to protect the concrete from hydrogen sulfide corrosion. The manholes would be coated with a protective liner, or replaced. These improvements would minimize the risk of potential sewer failures.

TABLE 2-1
Proposed Collection System Improvements

CIP No.^a	Project Index^b	Title	Location	Implementation Phase
01-101	SAN-01	Raitt and Bristol Street Sewer Extension	Santa Ana	2007-2010
01-17		Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2007-2011
02-49	SAR-02	Taft Branch Improvements	Orange	2012-2014
02-52	EUA-01	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010-2012
02-65	NHP-01,02	Newhope-Placentia and Cypress Trunk Replacement	Anaheim, Fullerton	2010-2015
02-71	EUB-01	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009-2011
03-55	KNT-01	Westside Relief Interceptor	La Palma, Cypress, Los Alamitos	2011-2013
03-58		Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010-2012
03-59	MLR-01	Miller-Holder Trunk Sewer Relief	Buena Park	2010-2012
03-60	KNT-02	Beach Trunk-Knott Interceptor Sewer Relief	Buena Park	2010-2012
05-47		Balboa Trunk Sewer Rehabilitation	Newport Beach	2007-2012
05-█		Newport Beach Force Main Upgrades	Newport Beach	2009-2012
05-61		Bayside Drive Improvement	Newport Beach	2008-2011
05-63	RPT-01	Dover Drive Trunk Sewer Relief	Costa Mesa, Newport Beach	2007-2011
06-17	BPT-01	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2007-2010
06-18	BKR-01	Fairview Road Trunk Sewer Relief	Costa Mesa	2007-2011
07-60	HATS-01	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2009-2011
07-62	SUN-01	Von Karman Trunk Sewer Relief	Irvine, Newport Beach	2011-2013
11-25	KNT-03 (30 -99 St. Plan)	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach, Seal Beach	2013-2015

^a Orange County Sanitation District Budget Fiscal Years 2006-07 and 2007-08

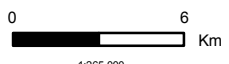
^b Orange County Sanitation District Strategic Plan Update, April 2006 (Job J-101)



\\galtgis2\ocsd\2007\Mapfiles\Feb07\Fig02_PrpsdImp_ap.mxd

- LEGEND**
- Proposed Improvements^{OCSD}
 - OCSD Existing Facilities^{OCSD}
 - OCSD Treatment Plant
 - OCSD Service Area Boundary^{OCSD}

- Base Map Layers**^{TBros}
- Major Transportation
 - City



Sources: OCSD - Orange County Sanitation District GIS 2006; TBros - Thomas Brothers 2002.

Figure 2-1
Proposed Improvements
Orange County Sanitation District

blank page

Taft Branch Improvements (02-49)

Proposed improvements would increase the size of a section of the Taft Branch sewer to provide additional capacity for planned developments such as the East Orange Development. The project would upsize approximately 1,200 feet of 15-inch-diameter pipe along East Taft Avenue between Shaffer Street and Glassell Street in the City of Orange.

Euclid Relief Improvements (02-52)

These proposed improvements would increase the capacity of the Euclid Trunk system between Edinger Avenue and Plant No. 1. The project would include installation of approximately 13,700 feet of large-diameter pipe in Euclid Street in the cities of Fountain Valley and Santa Ana. As proposed, the improvements would accommodate the projected increase in flow from planned developments, such as the Platinum Triangle in Anaheim.

Newhope-Placentia and Cypress Trunk Replacement (02-65)

This project is proposed to increase the capacity of the Newhope-Placentia and Cypress Trunk systems and of the Rolling Hills Subtrunk. Improvements would be constructed in the cities of Anaheim and Fullerton along State College Boulevard between East Orangewood Avenue and Yorba Linda Boulevard, along Yorba Linda Boulevard between Associated Road and State College Boulevard, and north of Bastanchury Road near Associated Road. The project would include installation of approximately 34,800 feet of 27- to 48-inch-diameter pipe and 3,500 feet of 24- to 27-inch pipe. Project alternatives and related improvements such as rehabilitation of the Yorba Linda Pump Station would be considered in a subsequent study.

Fullerton-Brea Interceptor Sewer Relief (02-71)

This project either would upsize approximately 2,200 feet of 12-inch-diameter sewer near Rolling Hills Drive in Fullerton, or would reconfigure local sewers to divert flows from the Old Fullerton-Brea Trunk to the adjacent Fullerton-Brea Interceptor.

Westside Relief Interceptor (03-55)

This project is proposed to increase the capacity of the Westside Relief Interceptor in La Palma, Cypress, and Los Alamitos. Improvements would include installation of 4,800 feet of 21-inch-diameter pipe in Denni Street between Moorgate Drive and Lincoln Avenue, and installation of 2,600 feet of 33-inch-diameter pipe in Katella Avenue between Bloomfield Street and Los Alamitos Boulevard. Improvements would be designed to accommodate projected growth in tributary areas and to minimize surcharging during wet weather.

Magnolia Trunk Rehabilitation (03-58)

The proposed rehabilitation includes the existing Magnolia Trunk sewer along Bushard and Magnolia Streets, between Ellis Avenue and Orangethorpe Avenue, in the cities of Fountain Valley, Westminster, Garden Grove, Stanton, and Anaheim. The scope of the project includes assessment and rehabilitation of approximately 12 miles of 39-inch and 78-inch-diameter lined concrete pipe. Improvements would include relining the interior of

concrete pipe damaged from hydrogen sulfide corrosion. Rehabilitation would extend the service life of the trunk.

Miller-Holder Trunk Sewer Relief (03-59)

This project proposes to increase the capacity of the Miller-Holder Trunk sewer in the City of Buena Park. Improvements would include installation of 9,800 feet of 24- to 36-inch-diameter pipe in Artesia Boulevard between Dale Street and Knott Avenue, and in Knott Avenue between Artesia Boulevard and 8th Street.

Beach Trunk-Knott Interceptor Sewer Relief (03-60)

Implementation of this proposed project would increase the capacity of the Beach Relief Trunk and the Knott Interceptor sewers in the City of Buena Park. Improvements would include installation of 11,100 feet of 42- to 48-inch diameter pipe in Kingman Avenue between Tulare Street and Artesia Boulevard, in Artesia Boulevard between Kingman Avenue and Knott Avenue, and in Knott Avenue between Artesia Boulevard and Orangethorpe Avenue.

Balboa Trunk Sewer Rehabilitation (05-47)

This proposed project would rehabilitate the existing Balboa Trunk sewer along Newport and Balboa Boulevards between the A Street Pump Station and the Lido Pump Station in the City of Newport Beach. The scope of the project includes assessment of approximately 12,600 feet of 15- and 24-inch pipe. A liner likely would be installed in the pipe to restore structural integrity. Deteriorated manholes would be coated with a protective liner or replaced. Construction of this project would extend the service life of the trunk.

Newport Beach Force Main Upgrades (05-█)

The Sanitation District is in the process of assessing the condition of pipe in the Newport Beach force main system, which extends from the Bay Bridge and A Street pump stations to Bitter Point pump station in Newport Beach along Pacific Coast Highway, Newport Boulevard, and Balboa Boulevard. Improvements could include upsizing and replacement of existing pipe depending on the findings of the assessment.

Bayside Drive Improvement (05-61)

This project would rehabilitate the existing Bayside Drive Trunk sewer along Bayside Drive between Jamboree Road and El Paseo Drive in the City of Newport Beach. The scope of the project includes approximately 3,500 feet of 36-inch pipe. A liner likely would be installed in the pipe to prevent corrosion and extend the service life of the trunk.

Dover Drive Trunk Sewer Relief (05-63)

Construction of this project would increase the capacity of the Dover Drive Trunk sewer in the City of Newport Beach to accommodate planned growth and wet weather flows. The project would include replacement of portions of the existing Dover Trunk sewer from Irvine Avenue to Pacific Coast Highway, as well as modifications to local sewers tributary to the Dover Trunk in Coast Mesa and Newport Beach. The existing trunk sewer extends along Dover Drive from Irvine Avenue to Pacific Coast Highway.

District 6 Trunk Sewer Relief (06-17)

This project would increase the capacity of the District 6 Trunk, which serves the cities of Costa Mesa and Newport Beach. The existing 3,700-foot sewer ranges from 12 to 18 inches in diameter and extends along Pomona Avenue in Costa Mesa and along Newport Boulevard to Pacific Coast Highway in Newport Beach.

Fairview Road Trunk Sewer Relief (06-18)

This project proposes to increase the capacity of the Fairview Trunk sewer in the City of Costa Mesa. The deficient 9,800-foot sewer ranges from 21 to 30 inches in diameter and extends along Fairview Avenue between Newport Boulevard and Baker Street. Alternatives for addressing deficiencies in existing capacity would be considered prior to design of proposed trunk improvements.

Browning Subtrunk Sewer Relief (07-60)

Implementation of this project would increase the capacity of the Browning Subtrunk sewer in the City of Tustin and in unincorporated Orange County. The existing 7,800-foot sewer ranges from 8 to 12 inches in diameter and extends along Browning Avenue between Rainbow Drive and Mitchell Avenue.

Von Karman Trunk Sewer Relief (07-62)

This proposed project would increase the capacity of the South Airport Diversion sewer in the cities of Irvine and Newport Beach. The deficient 700-foot section of 12-inch sewer extends along Campus Drive across MacArthur Boulevard. Alternatives for addressing deficiencies in existing capacity would be considered prior to design of proposed trunk improvements.

Edinger-Bolsa Chica Trunk Improvements (11-25)

These proposed improvements would increase the capacity of the Edinger-Bolsa Chica Trunk sewer in the City of Huntington Beach. The deficient 4,000-foot section of 12-inch-diameter sewer extends along Bolsa Chica Street between Bolsa Avenue and Robinwood Drive. Alternatives for projected capacity deficiencies would be considered prior to design of proposed trunk improvements.

2.1.2 Project Implementation

Collection system improvements require several years to complete. Generally, individual projects are investigated by trunk and by location before progressing through three phases: planning, design, and construction. During the planning phase, the overall need and timing of the trunk improvements are reassessed, and budget and schedule adjustments are made as necessary. During the design phase, site-specific information is collected, and project-level detail is developed. Property acquisition, easement agreements, soil investigations, assessment of sewer conditions, and analyses of alternatives occur during the design phase. Also, coordination with local and regulatory agencies takes place during the design phase as project information becomes available. Plans and studies would be developed during the design phase, as warranted for the specific project, and could include: odor control plans, biological survey of natural habitat areas, CHRIS literature review, soil testing, DOGGR District 1 well location map review, and traffic control plans. In some cases, property

owners and tenants are notified about planned improvements. Because site-specific information and technical data for the proposed improvements are limited at this time, the analysis in the PEIR is based on planning-level information, and various assumptions are outlined. Further environmental review and documentation of proposed improvements would occur during design of specific projects, as appropriate.

2.2 Construction Activities

Construction methods for collection system improvement projects generally include lining, manhole repair, open-trench excavation for new sewer installations, shoring, dewatering, potential pipe removal, manhole removal with associated demolition, and potential jack-and-bore methods for installation at sensitive crossings (e.g., busy intersections, railroad spurs, or flood control channels). Because specific details for the individual projects are unavailable at this time, assumptions about potential activities, locations, project schedules, duration of heavy construction, quantities, and equipment have been made for the purpose of impact analysis as listed in Tables 2-2, 2-3, 2-4, and 2-5.

2.2.1 Open-Trench Excavation

Replacement of pipelines ranging in diameter from 12 to 24 inches would require a trench 4 feet wide and 14 feet deep; pipelines ranging in diameter from 24 to 48 inches would require a trench 5 feet wide and 14 feet deep; pipelines ranging in diameter from 48 to 60 inches would require a trench 9 feet wide and 20 feet deep; pipelines ranging in diameter from 72 to 96 inches would require a trench 14 feet wide and 22 feet deep; and, replacement of 120-inch-diameter pipeline would require a trench 16 feet wide and 24 feet deep.

Trenches would be braced using a trench box or speed shoring. Typically, dewatering and well monitoring would be required. The active work area along the open trench would extend about 5 to 10 feet to one side of the trench and 20 to 30 feet to the other side, allowing for access by trucks and loaders.

The minimum construction right-of-way would be 25 feet; the maximum construction easement would be 50 feet wide. On narrower residential streets, road closures and parking restrictions might be imposed during construction periods to facilitate traffic flow around construction areas. Construction work in intersections might necessitate closures when the construction precludes safe traffic or work conditions. Major sewer connections could require several days of uninterruptible round-the-clock activity. Staging areas would be necessary along the construction routes. Construction equipment and materials would be held in parking lots, vacant lots, or segments of street lanes that are temporarily closed. Staging areas would be selected to minimize hauling distances and long-term disruption. Figure 2-2 shows a typical open-trench construction technique.

Removed pavement and excavated soil and pipes would be hauled offsite and would be disposed in accordance with applicable state and local regulations. Imported backfill would be delivered to stockpiles near the open trench. Once the new pipeline is in place, backfill would be placed in the trench, and the streets would be compacted and paved in accordance with state and local building codes. Table 2-2 lists construction method assumptions and the activity area for each of the proposed projects for collection system improvement.

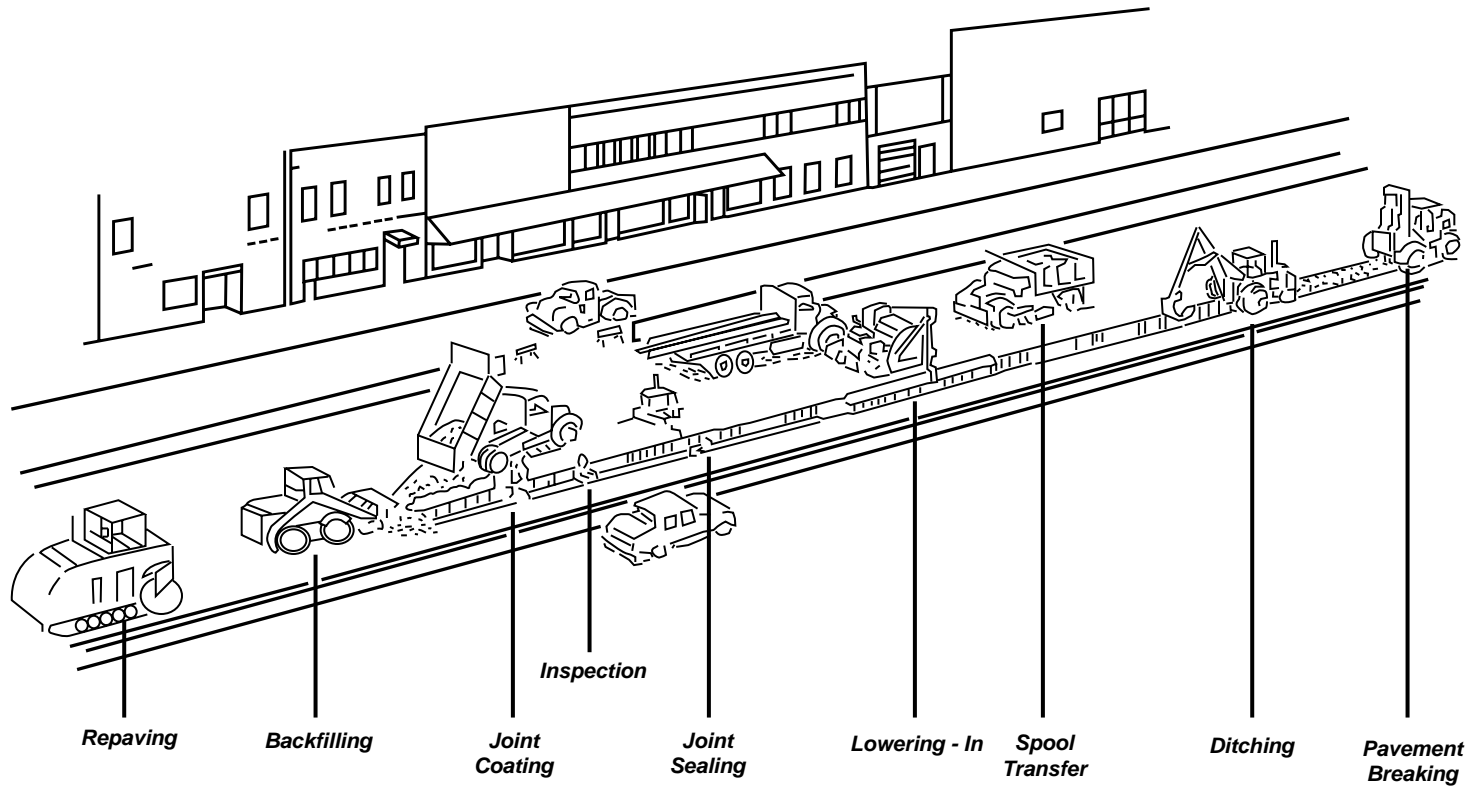


FIGURE 2-2
 Typical Open Trench Construction
 Orange County Sanitation District

blank page

TABLE 2-2
Construction Activity Area and Method Assumptions

CIP No.^a	Title	City	Street	Major Intersections	Method Assumptions
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	Myrtle Street	Raitt Street, Bristol Street	Trench, jack and bore
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana		Bristol Street	Sewer lining, manhole repair
02-49	Taft Branch Improvements	Orange	Taft Avenue	Glassell Street, Shaffer Street	Trench, jack and bore
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	Euclid Street	Edinger Avenue, Warner Avenue, Slater Avenue, Talbert Avenue	Trench, jack and bore, tunneling
02-65	Newhope-Placentia and Cypress Trunk Replacement	Anaheim, Fullerton	State College Boulevard, Yorba Linda Boulevard	Katella Avenue, Ball Road, Lincoln Avenue, La Palma Avenue, Orangethorpe Avenue, Chapman Avenue, Associated Road, Bastanchury Road	Trench, jack and bore
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton		Maple Avenue and Rolling Hills Drive	Trench, jack and bore
03-55	Westside Relief Interceptor	La Palma, Cypress, Los Alamitos	Denni Street, Katella Avenue	Crescent Avenue, Lincoln Avenue, Bloomfield Street, Los Alamitos Boulevard	Trench, jack and bore
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	Bushard Street, Magnolia Street	Edinger Avenue, Bolsa Avenue, Westminster Avenue, Garden Grove Boulevard, Chapman Avenue, Katella Avenue, Ball Road, Lincoln Avenue, La Palma Avenue, Orangethorpe Avenue	Sewer lining, manhole repair
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	Artesia Boulevard	Dale Street, Beach Boulevard, Knott Avenue	Trench, jack and bore
03-60	Beach Trunk-Knott Interceptor Sewer Relief	Buena Park	Kingman Avenue, Artesia Boulevard, Knott Avenue	Artesia Boulevard, Knott Avenue, Orangethorpe Avenue	Trench, jack and bore

TABLE 2-2 (cont.)
Construction Activity Area and Method Assumptions

CIP No.^a	Title	City	Street	Major Intersections	Method Assumptions
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	Balboa Boulevard, Newport Boulevard	Balboa Boulevard, Newport Boulevard	Sewer lining, manhole repair
05-█	Newport Beach Force Main Upgrades	Newport Beach	Pacific Coast Highway, Balboa Boulevard, Newport Boulevard	Pacific Coast Highway, Balboa Boulevard, Newport Boulevard	Trench, jack and bore
05-61	Bayside Drive Improvement	Newport Beach	Bayside Drive	Jamboree Road, El Paseo Drive	Sewer lining, manhole repair
05-63	Dover Drive Trunk Sewer Relief	Costa Mesa, Newport Beach	Dover Drive	Dover Drive, Pacific Coast Highway, Westcliff Drive	Trench, jack and bore
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	Pomona Avenue, Newport Boulevard	Newport Boulevard, Pacific Coast Highway	Trench, jack and bore
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	Fairview Road	Newport Boulevard, Baker Street	Trench, jack and bore
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	Browning Avenue	Irvine Boulevard	Trench, jack and bore
07-62	Von Karman Trunk Sewer Relief	Irvine, Newport Beach	Campus Drive	MacArthur Boulevard	Trench, jack and bore
11-25	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach, Seal Beach	Bolsa Chica Street	Bolsa Avenue, McFadden Avenue	Trench, jack and bore

^aSanitation District Budget Fiscal Years 2006-07 and 2007-08

TABLE 2-3
Implementation Assumptions by Project

CIP No. ^a	Projects	Pipe Diameter (inches)	Duration (months) ^b	Length of Pipeline (feet)	Volume of Excavation (y ³)	Disposal Volume (y ³)	Estimated Truck Trips (y ³) ^c
01-101	Raitt and Bristol Street Sewer Extension	24	6	2,360	6,119	1,530	102
01-17	Santa Ana Trunk Sewer Rehabilitation	NA	3	NA	NA	NA	NA
02-49	Taft Branch Improvements	21	3	1,200	2,489	622	42
02-52	Euclid Relief Improvements	60	18	13,700	91,330	22,833	1,522
02-65	Newhope-Placentia and Cypress Trunk Replacement	48	24	38,300	99,296	24,824	1,655
02-71	Fullerton-Brea Interceptor Sewer Relief	12	6	2,200	4,563	1,141	76
03-55	Westside Relief Interceptor	33	12	7,400	19,185	4,796	320
03-58	Magnolia Trunk Rehabilitation	NA	12	NA	NA	NA	NA
03-59	Miller-Holder Trunk Sewer Relief	36	12	9,800	25,407	6,352	424
03-60	Beach Trunk-Knott Interceptor Sewer Relief	48	12	11,100	28,778	7,195	480
05-47	Balboa Trunk Sewer Rehabilitation	NA	12	NA	NA	NA	NA
05-█	Newport Force Main Upgrades	NA	6	NA	NA	NA	NA
05-61	Bayside Drive Improvement	NA	6	NA	NA	NA	NA
05-63	Dover Drive Trunk Sewer Relief	24	12	7,300	18,925	4,731	315
06-17	District 6 Trunk Sewer Relief	18	9	3,700	7,674	1,919	384
06-18	Fairview Road Trunk Sewer Relief	30	12	9,800	25,407	6,352	424
07-60	Browning Subtrunk Sewer Relief	12	9	7,800	16,178	4,045	270
07-62	Von Karman Trunk Sewer Relief	12	3	700	1,452	363	24
11-25	Edinger-Bolsa Chica Trunk Improvements	12	6	4,000	8,296	2,074	138

Source: Orange County Sanitation District

^a Sanitation District Budget Fiscal Years 2006-07 and 2007-08

^b Duration represents period when heavy construction would occur.

^c Assumes removal of 25 percent of excavated materials at 15 cubic yards (y³) per truck.

NA Not Applicable

TABLE 2-4
Construction Equipment for Open Trench Excavation Projects

Activity	Equipment	Hours of Operation/Day	Workers (Total by Activity)
Excavation	Pavement Saw	8	10
	Jack Hammer	8	
	Air Compressor	8	
	Excavator	8	
	Front-end Loader	8	
	Dump Truck	8	
	Contractor Pickup Truck	4	
Sewer Installation	Concrete Truck	4	10
	Backhoe	8	
	Crane	8	
	Delivery Truck	4	
	Contractor Pickup Truck	4	
Paving	Backhoe	8	10
	Asphalt Truck	8	
	Compactor	8	
	Paving Machine	8	
	Roller	8	
	Contractor Pickup Truck	4	

Note: Pump Station rehabilitation projects would use a backhoe, crane, contractor pickup truck, and up to 10 workers.

TABLE 2-5
Preliminary Construction Schedule

CIP No.	Title	Location	Year												
			07	08	09	10	11	12	13	14	15	16			
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana		x											
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana		x											
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach		x											
05-61	Bayside Drive Improvement	Newport Beach		x											
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton				x									
05-63	Dover Drive Trunk Sewer Relief	Newport Beach				x									
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa				x									
05-█	Newport Beach Force Main Condition Assessment	Newport Beach				x									
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim					x	x							
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach					x								
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana					x								
03-59	Miller-Holder Trunk Sewer Relief	Buena Park					x								
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County					x								
03-55	Westside Relief Interceptor	Cypress, La Palma						x							
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Buena Park						x							
02-49	Taft Branch Improvements	Orange								x					
07-62	Von Karman Trunk Sewer Relief	Irvine, Newport Beach								x					
11-25	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach									x				
02-65	Newhope-Placentia and Cypress Trunk Replacement	Anaheim, Fullerton										x	x		

2.2.2 Trenchless Installation Methods

Installation and repair of pipelines can be accomplished using trenchless methods such as tunneling or horizontal directional drilling. Trenchless methods typically are used to go under a busy roadway or a stream, or to avoid a sensitive environmental area. Trenchless methods also might be considered when sewer lines are deep and open-trench excavation is risky. Trenchless methods can be used only in certain soil and ground conditions and can be more costly than open-trench methods. For proposed installations, the Sanitation District would consider trenchless methods during the design phase of a project, as appropriate, based on site-specific information and project requirements.

Tunneling requires a specialized tunnel-boring machine, as well as access and retrieval shafts that have shoring, such as sheet or concrete piles. Tunneling operations typically run continuously. The tunnel-boring machine drills the tunnel as it moves towards the retrieval shaft. Spoils are removed from behind the boring machine through the access shaft.

In some cases, microtunneling can be used to install large-diameter pipe. Microtunneling features a smaller boring machine that is controlled remotely from the surface. Pipe is installed immediately behind the boring machine. When using the microtunneling method, no workers generally are in the tunnel, although workers might need to enter to repair equipment. Microtunneling can be used below the water table in certain soil types.

Horizontal-directional drilling uses a drilling rig on the surface to install a drill pipe in a shallow underground arc. The drilling rig bores a pilot hole that is filled with fluid. Then a swiveling reamer is used to enlarge the hole to the size of the sewer pipe and the sewer pipe pulled through. Directional drilling often requires a large staging area to line up the pipe.

The jack-and-bore method involves the use of a horizontal boring machine or auger to drill a hole and a hydraulic jack to push a casing through the hole. As the boring proceeds, a steel-casing pipe is jacked into the hole; the pipeline then is installed in the casing. Figure 2-3 illustrates the jack-and-bore technique. The casing is jacked using a large hydraulic jack in a pit located at one end of the crossing. The jacking pit is approximately 50 feet deep by 20 feet wide—temporary pits typically will be excavated to a depth of 50 feet. In pits below the water table, the use of sheet-piling, special bulkheads, and dewatering pumps and wellfields would be required. Water from dewatering would be disposed of in accordance with applicable state and local requirements.

Pipe bursting or in-line expansion is a trenchless method by which the existing pipe is forced outward and opened by a bursting device. The bursting device, which has an expansion head that pushes the existing pipe radially outward until the pipe breaks, is pulled through the existing pipe by a cable rod and winch. As the bursting device breaks up the existing pipe, the new pipe is pulled behind the bursting device and replaces the existing pipe.

2.2.3 Sewer Lining and Manhole Rehabilitation

Sewer lining is a method of rehabilitation that uses the existing pipe as a host for a new liner and includes slip lining, cured-in-place pipe (CIPP), and modified cross-section liner.

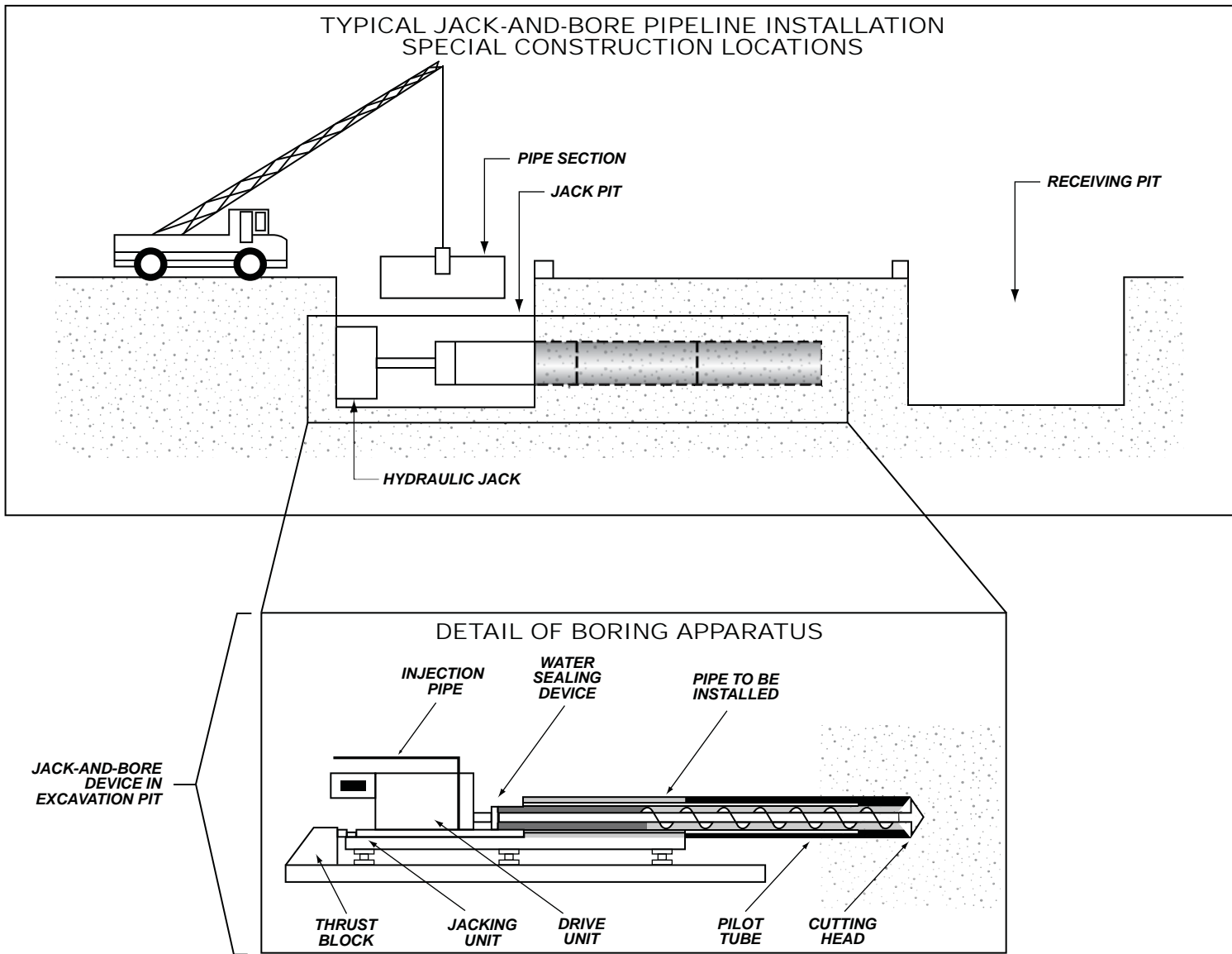


FIGURE 2-3
Jacking and Boring Technique
Orange County Sanitation District

blank page

Lining materials include felt or fabric tubes with thermosetting resins, polyvinyl chloride (PVC), and high-density polyethylene (HDPE). Installing a lining requires less disturbance and restoration than replacing the pipe. In some instances, sewer lining can be installed through existing manholes, with no excavation. In some situations, insertion pits must be dug to install the lining.

Manhole rehabilitation, typically included in collection system improvement projects, can involve replacement of the entire manhole, replacement of part of the manhole (e.g., frame and cover), lining, and sealing. Manhole rehabilitation can be conducted in a construction area approximately 15 feet wide and 30 feet long that extends around the manhole and can accommodate two utility trucks. Traffic would be detoured around the construction area and, although some disruption to traffic could occur during the construction activities, the need for road closures would be infrequent. On narrower residential streets, parking restrictions and/or closures might be imposed during the construction period to ensure public safety and to facilitate traffic flow around the construction area.

2.2.4 Pump Station Rehabilitation

Although this PEIR does not describe any specific proposal for pump station rehabilitation, the need for pump station rehabilitation could occur at any time. Potential pump station improvements likely would occur within existing pump buildings or vaults. The construction activities could involve delivery and replacement of large-volume pumping equipment. Additional environmental review of potential pump station improvements would occur, as appropriate, during design of specific improvements.

2.2.5 Construction Equipment

The estimated quantity and types of construction equipment, operating hours, and workers are listed in Table 2-4. These estimates are applicable to all projects that would require open trench excavation activities and are representative of the equipment, hours of operation, and workers that would be required, individually, by any one of these projects. The estimate assumes that the listed activities would occur sequentially.

2.2.6 Construction Schedule

For the purposes of this PEIR, the proposed improvements are assumed to be constructed over the next 10 years as shown in Table 2-5. This preliminary proposed schedule, based on projected capacity requirements in the 2006 Strategic Plan Update, provides a reasonable basis for impact analysis. Five to six projects are assumed to be under construction in the same year. Construction schedules are adjusted as project information becomes available to accommodate specific requirements.

2.3 Operation and Maintenance

Ongoing activities related to operation and maintenance of the collection system include routine maintenance, cleaning of sewer lines and manholes, visual inspections, closed-circuit television and camera inspection, flow-monitoring, as-needed repairs and chemical dosing for odor and corrosion control. Frequency of maintenance activities is based on site-specific information to minimize risk of blockages or equipment failure that could lead to a

sanitary sewer overflow. Smaller-diameter gravity sewers (6 to 12 inches in diameter) are more prone to blockages and are cleaned more frequently than larger-diameter trunk sewers. Additionally, inverted siphons and known trouble spots are cleaned more frequently than sewers that are functioning well. Gravity sewers are cleaned using combination trucks for hydraulic wash of the pipe and vacuum removal of debris. Isolation valves in the pressure sewers are exercised every 3 months to ensure proper function, and air/vacuum release valves are checked every 6 months. Operation and maintenance activities generally require confined-space entry and can be completed with minimal disruption to surrounding areas.

Corrective maintenance activities include repair or replacement of failed pumps, pipe segments and manholes, replacement of manhole covers, root cutting, and root foaming with herbicide. Additionally, chemicals, such as magnesium hydroxide (MgOH), hydrogen peroxide (H₂O₂), sodium hydroxide (NaOH), and ferrous chloride (FeCl₂) might be added directly to the trunk sewers, as needed, to control odor and corrosion.

3.0 Environmental Setting, Impacts, and Mitigation Measures

3.1 Basis for Determining Significance

Chapter 3 provides the setting for each environmental resource area, identifies applicable standards for the environmental resource areas, presents an analysis of potential impacts associated with the proposed Plan, and provides mitigation measures, where applicable, for potentially significant environmental impacts. The impact analyses provided in this chapter have been prepared in accordance with CEQA Guidelines.

Determining whether an impact is significant is a critical and often controversial aspect of the environmental review process. The determination of significance is critical because it requires that a project be altered or that mitigation measures be implemented to avoid impacts, or reduce impacts to less-than-significant levels to the extent feasible under CEQA. Determining significance sometimes can be controversial because, when no clear standards or thresholds exist, a decision regarding significance of an impact often must be based on professional judgment.

3.1.1 CEQA Guidance

The CEQA Guidelines (Section 15382) define the terminology “significant effect on the environment” as:

... a substantial or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

CEQA Guidelines further state that the determination of whether a project could have a significant effect on the environment requires careful judgment on the part of the public agency involved and that this judgment should be based, to the extent possible, on “scientific and factual data” (Section 15064[b]). CEQA also states that no predetermined definition of “significant effect” exists because the significance of an activity can vary with the setting. For example, an activity that might not have a significant effect in an urban area could be considered significant in a rural area (Section 15064 [b]).

3.1.2 Proposed Plan Approach

Standards of significance for the proposed Plan include the questions contained in CEQA Guidelines Appendix G, Environmental Checklist (CEQA Checklist). Additional significance criteria include approved standards, such as regulations or local ordinances, which are intended to provide additional evidence for the determination of impact significance.

3.2 Air Quality

This section describes the environmental setting, evaluates potential air quality impacts, and includes proposed mitigation measures for potential impacts.

3.2.1 Setting

The setting section discusses the general climatology and air quality of the basin in which the Sanitation District is located by focusing on air quality trends, local air quality contaminant levels in relation to state and federal standards, and the effects of existing air pollutants on health and the environment. The study area lies within the South Coast Air Basin (SCAB), a coastal plain surrounded by a rim of high mountains.

Climate

The climate of Southern California, specifically Orange County, primarily is influenced by topography and the position of the strength of the East Pacific High-Pressure Area. This Pressure Area influences patterns of wind and rain flows, as well as ocean currents. As a result, rainfall is low in the winter due to this high-pressure system. Proximity to the Pacific Ocean, combined with varying topography and winds, greatly influences temperatures in Orange County. Winter temperatures average about 52 degrees Fahrenheit (°F) while summer temperatures average 68°F along the coast and for several miles inland. Inland temperatures in the summer can reach 100°F. Orange County is particularly susceptible to fog due to proximity to the ocean and the high frequency of temperature inversions that prevent dispersal of fog.

Air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The Sanitation District service area is within the SCAB, which incorporates approximately 12,000 square miles and consists of four counties, including San Bernardino, Riverside, Los Angeles, and Orange. In May 1996, the boundaries of the SCAB were changed by the California Air Resources Board (CARB) to include the Beaumont-Banning area. The distinctive climate of the SCAB is determined by its terrain and geographic location. The SCAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and mountains along the rest of its perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific, resulting in a mild climate that is tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of hot weather, winter storms, or Santa Ana winds.

The vertical dispersion of air pollutants in the SCAB is restricted by the presence of persistent temperature inversions. High-pressure systems, such as the semipermanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together

with strong sunlight, can produce conditions for the formation of photochemical smog. The basin-wide occurrence of inversions at 3,500 feet above sea level or less averages 191 days per year (SCAQMD, 1993).

The atmospheric pollution potential of an area is largely dependent on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging over 15 miles per hour (mph), smog potential is reduced greatly.

Air Quality Regulations, Plans and Policies

Federal air quality policies are regulated through the federal Clean Air Act (CAA). Pursuant to this act, USEPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead (Pb). The federal CAA was amended in 1977 to require each state to maintain a state implementation plan (SIP) for achieving compliance with the NAAQS. In 1990, the act was amended again to strengthen regulation of stationary and motor vehicle emission sources. Conformity to the SIP is defined under the 1990 CAA amendments as conformity to the purpose of the plan in eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of these standards.

The federal CAA also requires USEPA to designate areas (counties or air basins) as attainment or nonattainment with respect to each criteria pollutant, depending on if the area achieves the NAAQS. An area that is designated nonattainment indicates that the area has not achieved the NAAQS and, therefore, is subject to planning requirements to attain the standard. Recently, USEPA promulgated a new 24-hour PM_{2.5} standard that requires states to recommend attainment status to USEPA by December 2007 and the effective date of the designation by April 2010. State implementation plans to meet the new PM_{2.5} standard are due to USEPA by April 2013.

The CARB oversees California air quality policies and is responsible for preparing and submitting the SIP to USEPA. The state established California Ambient Air Quality Standards (CAAQS) in 1969. These standards are generally more stringent and include more pollutants than the NAAQS. The California CAA was approved in 1988 and requires each local air district in the state to prepare an air quality plan to achieve compliance with CAAQS. Similar to USEPA, the CARB designates counties in California as attainment or nonattainment with respect to the CAAQS.

The South Coast Air Quality Management District (SCAQMD) is the local agency charged with preparing, adopting, and implementing mobile, stationary, and area air-emission control measures and standards. Under the California CAA, SCAQMD is required to develop an air quality attainment plan for nonattainment criteria pollutants within the air district. According to the SCAQMD, the SCAB is designated as a nonattainment area for O₃, CO, PM₁₀, and PM_{2.5} and as an attainment area for NO₂, SO₂, and Pb. On February 24, 2006, the CARB transmitted the Redesignation Request and Maintenance Plan for CO to USEPA for approval. This means that ambient air quality monitoring in the SCAB has demonstrated that the area achieves the NAAQS for CO, and SCAQMD is requesting that USEPA change the attainment status of the area from nonattainment to maintenance for CO.

Under the California CAA, SCAQMD is required to develop an air quality management plan (AQMP) for nonattainment criteria pollutants within the air district. SCAQMD has established an AQMP that proposes policies and measures to achieve federal and state standards for healthful air quality in the South Coast Air Basin. The 2003 AQMP was adopted by the SCAQMD Board of Directors on August 1, 2003. Currently, the Draft 2007 AQMP is under development and provides the strategies to meet the new, more stringent O₃ and PM_{2.5} standards than the standards that were in place during development of the 2003 AQMP. One major goal of the 2007 AQMP is to encourage reductions in emissions from mobile sources (such as locomotives), especially mobile sources under state and federal jurisdiction (SCAQMD, 2006).

Existing Air Quality

The SCAQMD maintains four air quality monitoring stations in Orange County. These monitoring stations include Anaheim, Costa Mesa, La Habra, and El Toro. With the exception of the El Toro station, the monitoring stations are located within the Sanitation District service area. A 4-year summary (2002 through 2005) of data collected at the three stations within the Sanitation District service area is shown in Table 3-1 and is compared with the corresponding CAAQS.

Criteria pollutants were established based on the effects of the pollutants on human health. A description of the adverse effects of criteria pollutants, as well as the primary sources of pollutant emissions in urban areas is provided below.

Ozone (O₃). The most pervasive air quality problem in the SCAB is high O₃ concentrations. Ozone is not emitted directly but is a secondary pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic compounds (ROC) and nitrogen oxides (NO_x). Significant O₃ production generally requires about 3 hours in a stable atmosphere with strong sunlight. Ozone is a regional air pollutant because it is transported and diffused by wind concurrently with the photochemical reaction process. Motor vehicles are the major source of O₃ precursors in the basin. During late spring, summer, and early fall, light winds, low mixing heights, and abundant sunshine combine to produce conditions favorable for maximum production of O₃. Ozone causes eye and respiratory irritation, reduces resistance to lung infection, and could aggravate pulmonary conditions in persons with lung disease. Ozone is also damaging to vegetation and untreated rubber. The state 1-hour ozone standard was exceeded approximately 15 days in 2002, 38 days in 2003, 23 days in 2004, and 4 days in 2005 at the four monitoring stations (see Table 3-1).

Carbon Monoxide (CO). Carbon monoxide is a nonreactive pollutant emitted primarily by motor vehicles. Ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic and are influenced by meteorological factors such as wind speed and atmospheric mixing. When strong surface inversions formed on winter nights are coupled with near-calm winds, CO from automobile exhaust becomes concentrated. The highest CO levels within the SCAB are almost always measured during the winter. Carbon monoxide interferes with the transfer of oxygen to the blood. Also, CO could cause dizziness and fatigue and can impair central nervous system functions. The 1-hour and 8-hour average CO standards have not been exceeded at any of the monitoring stations in Orange County in the last 4 years (see Table 3-1).

TABLE 3-1
Orange County Air Quality Summary, 2002 through 2005

Pollution (Standard)/ Location	2002			2003			2004			2005		
	Conc.	State Excd ^a	Fed Excd ^a	Conc.	State Excd ^a	Fed Excd ^a	Conc.	State Excd ^a	Fed Excd ^a	Conc.	State Excd ^a	Fed Excd ^a
Carbon Monoxide (20 ppm = state 1-hour average standard, 35 ppm = federal 1-hour average standard)												
North Orange County	10	n/a	n/a	8	n/a	n/a	7	n/a	n/a	7	n/a	n/a
Central Orange County	7	n/a	n/a	6	n/a	n/a	5	n/a	n/a	4	n/a	n/a
N. Coastal Orange County	5	n/a	n/a	7	n/a	n/a	5	n/a	n/a	5	n/a	n/a
Saddleback Valley	3	n/a	n/a	3	n/a	n/a	2	n/a	n/a	2	n/a	n/a
Carbon Monoxide (9.0 ppm = state 8-hour average standard, 9.0 ppm = federal 8-hour average standard)												
North Orange County	4.4	0	0	4.1	0	0	4.0	0	0	3.1	0	0
Central Orange County	5.4	0	0	3.9	0	0	4.1	0	0	3.3	0	0
N. Coastal Orange County	4.3	0	0	5.8	0	0	4.1	0	0	3.2	0	0
Saddleback Valley	3.6	0	0	1.0	0	0	1.6	0	0	1.6	0	0
Ozone (0.09 ppm = state 1-hour average standard)												
North Orange County	0.121	3	0	0.165	7	1	0.099	6	0	0.094	0	0
Central Orange County	0.103	3	0	0.135	11	2	0.120	14	0	0.095	1	0
N. Coastal Orange County	0.087	0	0	0.107	4	0	0.104	2	0	0.085	0	0
Saddleback Valley	0.136	9	2	0.153	16	4	0.116	1	0	0.125	3	1
Ozone (0.07 ppm = state 8-hour average standard, 0.08 ppm = federal 8-hour average standard)												
North Orange County	0.079	n/a	0	0.087	n/a	2	0.080	6	0	0.075	1	0
Central Orange County	0.079	n/a	0	0.087	n/a	1	0.097	35	6	0.077	4	0
N. Coastal Orange County	0.071	n/a	0	0.088	n/a	1	0.087	5	1	0.073	0	0
Saddleback Valley	0.095	n/a	2	0.105	n/a	8	0.089	20	2	0.085	6	1
Nitrogen Dioxide (0.25 ppm = state 1-hour average standard)												
North Orange County	0.12	0	n/a	0.16	n/a	n/a	0.12	n/a	n/a	0.09	n/a	n/a
Central Orange County	0.10	0	n/a	0.13	n/a	n/a	0.12	n/a	n/a	0.09	n/a	n/a
N. Coastal Orange County	0.11	0	n/a	0.11	n/a	n/a	0.10	n/a	n/a	0.09	n/a	n/a
Saddleback Valley	--	--	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a

TABLE 3-1 (cont.)
Orange County Air Quality Summary, 2002 through 2005

Pollution (Standard)/ Location	2002			2003			2004			2005		
	Conc.	State Excd ^a	Fed Excd ^a	Conc.	State Excd ^a	Fed Excd ^a	Conc.	State Excd ^a	Fed Excd ^a	Conc.	State Excd ^a	Fed Excd ^a
Sulfur Dioxide (0.25 ppm = state 1-hour average standard)												
North Orange County	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
Central Orange County	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
N. Coastal Orange County	0.03	n/a	n/a	0.02	n/a	n/a	0.03	n/a	n/a	0.01	n/a	n/a
Saddleback Valley	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
Sulfur Dioxide (0.04 ppm = state 24-hour average standard, 0.14 = federal 24-hour average standard)												
North Orange County	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
Central Orange County	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
N. Coastal Orange County	0.016	n/a	n/a	0.012	n/a	n/a	0.008	n/a	n/a	0.008	n/a	n/a
Saddleback Valley	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
Respirable Particulates PM₁₀ (50 µg/m³ = state 24-hour average standard, 150 µg/m³ = federal 24-hour average standard. 20 µg/m³ –state annual average)^c												
North Orange County	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
Central Orange County	69	5(8.2)	0	96	6(9.8)	0	74	7(11.5)	0	65	3(4.9)	0
N. Coastal Orange County	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a	--	n/a	n/a
Saddleback Valley	80	5(8.3)	0	64	2(3.5)	0	47	0	0	41	0	0
Fine Particulates PM_{2.5} (12 µg/m³ = state annual average standard, 15 µg/m³ = federal annual average standard, and 35 µg/m³ = federal 24-hour average standard)^c												
North Orange County	--	n/a	--	--	n/a	--	--	n/a	n/a	--	n/a	n/a
Central Orange County	68.6	n/a	1(0.3)	115.5	n/a	3(0.9)	58.9	n/a	0	54.7	n/a	0
N. Coastal Orange County	--	n/a	--	--	n/a	--	--	n/a	n/a	--	n/a	n/a
Saddleback Valley	58.5	n/a	0	50.6	n/a	0	49.4	n/a	0	35.4	n/a	0

^aNumber of days state/federal standard was exceeded.

^bppm – parts per million; µg/m³ – micrograms per cubic meter

^cOn September 21, 2006, USEPA promulgated a new 24-hour PM_{2.5} standard (effective December 17, 2006) and revoked the annual federal PM₁₀ standard. <http://www.epa.gov/air/criteria.html>

n/a – not applicable

Source: South Coast Air Quality Management District Air Quality Data Tables, 2002-2005.

Nitrogen Dioxide (NO₂). Two oxides of nitrogen are significant in air pollution: nitric oxide (NO) and NO₂. Nitric oxide, along with some NO₂, is emitted from motor vehicle engines, power plants, refineries, industrial boilers, ships, aircraft, and railroads. Nitrogen dioxide is formed primarily when NO reacts with atmospheric oxygen in the presence of ROC and sunlight; the other product of this reaction is O₃. Nitrogen dioxide is the "whiskey-brown" colored gas, more commonly known as smog, and is readily observed during periods of heavy air pollution. Concentrations of NO₂ are highest during the late fall and winter. Nitrogen dioxide increases damage from respiratory disease and irritation, and could reduce resistance to certain infections. The state standard for NO₂ has not been exceeded in the last 4 years in Orange County (see Table 3-1).

Sulfur Dioxide (SO₂). Sulfur dioxide is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is a major source, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors to SO₂ contamination of the SCAB. In humid atmospheres, sulfur oxides can react with water vapor to produce sulfuric acid, a component of acid rain. Sulfur oxides also can form sulfate particulates, which reduce visibility. Sulfur dioxide is a lung irritant, and, in combination with moisture and oxygen, SO₂ can damage vegetation and man-made materials. Sulfur dioxide levels are generally highest during the winter although no exceedances of ambient SO₂ standards have been recorded in Orange County in the last 4 years (see Table 3-1).

Respirable Particulate Matter (PM₁₀). PM₁₀ refers to particulates less than 10 microns in diameter, which can be inhaled and cause health effects. Particulates in the atmosphere result from many kinds of dust- and fume-producing industrial and agricultural operations, combustion, and atmospheric photochemical reactions. Demolition, construction, and vehicular traffic are major sources of particulates in urban areas. Natural sources of particulates include wind-blown dust and ocean spray. Very small particulates of certain substances can cause direct lung damage, or can contain absorbed gasses that could be injurious. Particulates also can damage materials and reduce visibility. PM₁₀ standards have been exceeded 28 times between 2002 and 2005 (see Table 3-1).

Fine Particulate Matter (PM_{2.5}). PM_{2.5} refers to fine particulates less than 2.5 microns in diameter, which can be inhaled deep into the lungs and cause adverse health effects. Very small particulates of certain substances can cause direct lung damage or can contain absorbed gasses that could be injurious. Fine particulates also can damage materials and reduce visibility. New PM_{2.5} standards recently have been established, and the new standards have been exceeded four times between 2002 and 2005 (see Table 3-1).

Existing Air Pollution Sources

Air quality in the Sanitation District service area is affected by emissions from a variety of sources. Those sources include, but are not limited to, industrial uses, agricultural uses, commercial uses, regional motor vehicle emissions, and local motor vehicle traffic on nearby highways and freeways. Roadways with traffic that affects air quality in the Sanitation District service area include Pacific Coast Highway, Interstate (I) 405, I-5, I-605, State Route (SR) 91, SR-57, SR-55, SR-22, and SR-73, as well as major arterial streets throughout Orange County.

Existing air pollutant emissions associated with the wastewater collection system are limited to the emissions of odorous gases including hydrogen sulfide (H₂S) gas. Causes for reported odors in the collection system include improperly sealed manholes, grease accumulation, deterioration of gas flaps, and construction activity. The Sanitation District investigates and tracks all odor complaints, performing cleaning and/or repairs as appropriate. As part of its operational activity, the Sanitation District injects sodium hydroxide, hydrogen peroxide, ferrous chloride, and magnesium hydroxide at various locations in the collection system to control odor. Additionally, the Sanitation District prepares specific odor control plans for CIP projects and implements control measures to minimize odors during construction activities.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. The SCAQMD defines sensitive receptors as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. The sensitive population that might be at these locations includes children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions that can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent because the majority of workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Receptors sensitive to air pollution in the Sanitation District service area include, but are not limited to, residential uses, schools, medical facilities, and nursing and convalescent homes.

3.2.2 Impacts

Thresholds of Significance

Air quality standards of significance for the proposed Plan were determined from adopted standards from the following sources:

- CEQA Checklist
- SCAQMD CEQA Air Quality Handbook (SCAQMD, 1993)
- SCAQMD CEQA Air Quality Handbook Updates available online www.aqmd.gov/ceqa/hdbk.htm

Based on guidance from the above sources, potential impacts to air quality would be considered significant if construction or operation activities would result in any of the following:

- Conflict with or obstruct implementation of the SCAQMD Air Quality Plan
- Violate any air quality standard or contribute substantially to an existing or projected violation of air quality
- Result in a cumulative considerable net increase of any criteria pollutant for which the proposed Plan region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial concentrations of pollutants
- Create objectionable odors affecting a substantial number of people

The SCAQMD CEQA Air Quality Handbook lists the following pollutant levels as significant for construction projects (SCAQMD, October 2006 update):

Pollutant	Daily Significance Threshold (lb/day)
ROG*	75
NO/NO ₂	100
CO	550
PM ₁₀	150
PM _{2.5}	55
SO/SO ₂	150

*ROG – reactive organic gas

Potential impacts to air quality from the proposed Plan would be significant if the listed levels of daily pollutant emissions were exceeded during construction.

The SCAQMD CEQA Air Quality Handbook lists the following pollutant levels as significant for operation of projects (SCAQMD, October 2006 update):

Pollutant	Daily Significance Threshold (lb/day)
ROG	55
NO/NO ₂	55
CO	550
PM ₁₀	150
PM _{2.5}	55
SO/SO ₂	150

Potential impacts to air quality from the proposed Plan would be significant if the listed levels of daily pollutant emissions were exceeded during operation.

An additional significance criterion identified in the CEQA Checklist for the proposed Plan was evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have no impact associated with this significance criterion because the proposed Plan would not conflict or obstruct implementation of an applicable air quality plan, including the AQMP prepared by SCAQMD.

Evaluation

The proposed Plan site is located within the SCAB, and the SCAQMD regulates stationary and mobile air emission sources within the SCAB. Potential air quality impacts associated with the proposed Plan could result from temporary construction and operational activities throughout the Sanitation District service area. The expected construction and operation emissions are detailed below.

Construction Impacts. Criteria pollutant emissions from each proposed collection system improvement construction project were calculated and compared to the significance criteria previously listed. Emission rates for construction equipment and on-road vehicles were used from the SCAQMD CEQA Web site. Emission rates for fugitive emissions were derived from the CEQA Air Quality Handbook (SCAQMD, 1993), URBEMIS (version 8.7), or the SCAQMD Web site.

Each collection system improvement construction project was separated into three phases: excavation, sewer installation, and paving. All phases were assumed not to overlap, and the maximum daily emissions from each phase of each project were compared to the SCAQMD CEQA significance criteria. Table 3-2 shows the maximum daily emissions, by pollutant and year, for collection system improvement construction projects.

As shown in Table 3-2 and in Appendix C, when compared with the construction emissions thresholds, emissions associated with construction of any one of the proposed collection system improvement projects would be below thresholds of significance for construction. However, as shown in Table 2-5 and Table 3-2, several collection system improvement projects are anticipated to be constructed concurrently within the Sanitation District service area. To evaluate potential air quality impacts associated with concurrent construction activities, maximum daily emissions for each collection system improvement project were totaled for each year. The results of these calculations identified that for the years 2008 through 2010, construction emissions associated with concurrent construction activities would exceed the SCAQMD threshold for NO_x, which would be considered a significant unavoidable air quality impact during construction. Mitigation Measures 3.2-1a and 3.2-1b have been identified to reduce construction-related NO_x emissions.

As shown in Table 3-2, PM₁₀ and PM_{2.5} emissions associated with construction would be below the level of significance for construction. Regardless, project contractors would be required to minimize fugitive dust emissions by complying with SCAQMD Rule 403, which requires all construction projects to reduce fugitive dust emissions through the implementation of dust control measures, such as watering construction areas to minimize dust and reducing speeds of motor vehicles used in dirt construction areas. Mitigation Measure 3.2-2 has been included to ensure that project construction activities reduce fugitive dust emissions in compliance with SCAQMD Rule 403.

All other pollutants were below the SCAQMD thresholds for construction emissions.

TABLE 3-2
Estimated Construction Emissions (lbs/day)

CIP No.	Project	Year	Maximum Daily Emissions (lbs/day)					
			NO _x	VOC*	SO _x	CO	PM ₁₀	PM _{2.5}
01-17	Santa Ana Trunk Sewer Rehabilitation	2008	23.74	3.29	0.02	12.70	5.49	2.11
01-101	Raitt and Bristol Street Sewer Extension	2008	39.93	7.08	0.04	21.62	15.35	5.08
06-17	District 6 Trunk Sewer Relief	2008	40.90	7.57	0.04	21.77	26.62	7.46
05-61	Bayside Drive Improvement	2008	23.74	3.29	0.02	12.70	5.49	2.11
Totalized Maximum Daily Emissions by Year		2008	128.31	21.23	0.12	68.79	52.95	16.76
02-71	Fullerton-Brea Interceptor Sewer Relief	2009	37.74	6.67	0.04	21.01	14.45	4.80
05-63	Dover Drive Trunk Sewer Relief	2009	38.07	8.51	0.04	21.05	18.64	5.69
06-18	Fairview Road Trunk Sewer Relief	2009	38.39	9.41	0.04	21.10	22.78	6.56
Totalized Maximum Daily Emissions by Year		2009	114.20	24.59	0.12	63.16	55.87	17.05
05-█	Newport Beach Force Main Condition Assessment	2010	21.02	2.89	0.02	11.60	5.34	1.98
03-58	Magnolia Trunk Rehabilitation	2010	35.01	5.54	0.04	20.35	6.13	3.04
05-47	Balboa Trunk Sewer Rehabilitation	2010	21.02	2.89	0.02	11.60	5.34	1.98
02-52	Euclid Relief Improvements	2010	37.33	10.49	0.04	20.74	43.36	10.81
03-59	Miller-Holder Trunk Sewer Relief	2010	36.04	9.08	0.04	20.52	22.65	6.44
Totalized Maximum Daily Emissions by Year		2010	150.42	30.89	0.16	84.81	82.82	24.25
07-60	Browning Subtrunk Sewer Relief	2011	33.51	8.04	0.04	20.47	18.43	5.46
03-55	Westside Relief Interceptor	2011	33.51	7.90	0.04	20.47	18.38	5.45
05-█	Newport Beach Force Main Condition Assessment	2011	21.02	2.89	0.02	11.60	5.34	1.98
Totalized Maximum Daily Emissions by Year		2011	88.04	18.83	0.10	52.54	42.15	12.89
03-60	Beach Trunk/Knott Interceptor Sewer Relief	2012	31.48	8.93	0.04	20.47	22.41	6.18
02-49	Taft Branch Improvements	2012	31.10	5.35	0.04	20.50	14.04	4.41
Totalized Maximum Daily Emissions by Year		2012	62.58	14.28	0.08	40.97	36.45	10.59
07-62	Von Karman Trunk Sewer Relief	2013	28.88	4.88	0.04	20.42	9.78	3.39
11-25	Edinger/Bolsa Chica Trunk Improvements	2014	29.11	4.81	0.04	20.38	17.82	4.96
11-25	Edinger/Bolsa Chica Trunk Improvements	2015	29.11	4.81	0.04	20.38	17.82	4.96
02-65	Newhope Placentia and Cypress Trunk Replacement	2015	31.65	16.15	0.04	20.45	34.31	8.32
Totalized Maximum Daily Emissions by Year		2015	60.76	20.96	0.08	40.83	52.13	13.28
02-65	Newhope Placentia and Cypress Trunk Replacement	2015	31.65	16.15	0.04	20.45	34.31	8.32

*VOC – volatile organic compound

Operational Impacts. The primary source of operational emissions would be from maintenance of the new sewer lines. The maintenance of the proposed Sanitation District improvements would occur on an as-needed basis to minimize risk of blockages or equipment failure. Emissions associated with the operational activities would be consistent ongoing Sanitation District operational activities and would thus not result in new operational emissions. Therefore, operational emissions associated with the operation of the plan are not anticipated to result in long-term operational impacts that conflict with SCAQMD-established air quality standards, and would be less than significant.

Cumulative Impacts. New emissions associated with the proposed projects would be limited to temporary construction activities and potential vehicle emissions from required maintenance. As stated above, for the years 2008 through 2010, construction emissions associated with concurrent construction activities would exceed the SCAQMD threshold for NO_x. Potential cumulative impacts related to construction of collection system improvements are evaluated in Section 5.1 (Cumulative Impacts). The proposed collection system improvement projects would not be expected to result in the exceedance of SCAQMD-established air quality standards during operation. Therefore, the cumulative operational impact of the proposed projects would be expected to be less than significant.

Sensitive Receptors. Sensitive receptors in the Sanitation District service area include, but are not limited to, residential uses, schools, medical facilities, and nursing and convalescent homes. As described above, the temporary increase in emissions of criteria air pollutants during construction would not be expected to exceed SCAQMD-established air quality thresholds for any one of the proposed collection system improvement projects. Thus, because sensitive receptors are site specific, the proposed sewer improvement projects would not result in a significant impact. Emissions associated with operational activities would be minimal and are not anticipated to result in long-term operational impacts that conflict with SCAQMD-established air quality standards. Therefore, the proposed sewer improvement projects would not have a significant impact to sensitive receptors during construction or operation.

Objectionable Odors. The proposed projects would be expected to create some objectionable odors as a result of modification of the existing sewer lines. Currently, the Sanitation District investigates and tracks all odor complaints, performing cleaning and/or repairs as appropriate, and would continue this practice. As part of its operational activity, the Sanitation District injects sodium hydroxide, hydrogen peroxide, ferrous chloride, and magnesium hydroxide at various locations in the collection system to control odor. Construction contractors would follow a site-specific odor control plan to minimize odors during construction. Odor control could include monitoring, ventilating, chemical application, material containment limiting atmospheric exposure, and activity staging to minimize odor impacts. Therefore, the proposed Plan would be expected to have a less-than-significant impact associated with the creation of objectionable odors affecting a substantial number of people.

Impact 3.2-1: Construction activities would generate NO_x emissions in exceedance of the daily significance threshold resulting in a short-term impact to air quality.

Impact 3.2-2: Construction activities would produce fugitive dust emissions resulting in a short-term impact to air quality.

3.2.3 Mitigation Measures

The following mitigation measures have been identified to reduce construction-related NO_x and fugitive dust emissions.

Measure 3.2-1a: Contractors will maintain equipment engines in proper tune and operate construction equipment so as to minimize exhaust emissions.

Measure 3.2-1b: During construction, trucks and vehicles in loading or unloading queues will keep engines off when not in use, reducing vehicle emissions.

Measure 3.2-2: Contractors will reduce fugitive dust emissions through the implementation of the following dust control measures:

- Cover all trucks hauling soil, sand, or other loose materials
- Apply water as necessary on all unpaved access roads, parking areas and staging areas at construction sites
- Sweep all paved access roads, parking areas, and staging areas at construction sites with water sweepers
- Water or apply nontoxic soil stabilizers to exposed soil stockpiles or areas disturbed by construction activities which produce dust
- Limit traffic speeds on unpaved roads to 15 mph

3.2.4 Significance After Mitigation

Even with implementation of the mitigation measures provided, construction-related NO_x emissions would be above thresholds of significance, resulting in a significant unavoidable construction-related air quality impact.

Air quality impacts from operation of the collection system improvement projects are expected to be less than significant.

3.3 Biological Resources

This section describes the environmental setting, evaluates impacts to potential biological resources, and includes proposed mitigation measures for potential impacts.

3.3.1 Setting

The Sanitation District service area comprises predominantly densely urbanized residential, commercial, and industrial developments. Wildlife within urbanized, developed areas is limited to landscaped parks and golf courses, residential neighborhoods, transportation corridors, and flood control channels. Within the Sanitation District service area, only a few remaining areas are covered with natural vegetation. These areas are found along the upper Santa Ana River, Santiago Creek, and in the foothill areas in and around Chino Hills State Park.

Naturalized areas are present in other locations that also could support native plant and animal species. In the immediate vicinity of proposed project elements, naturalized habitat is present in the Naval Weapons Station Seal Beach along Bolsa Chica Street (near project component 11-25), and in the area behind Fullerton Dam near Associated Road (near project component 02-65).

In addition, natural vegetation and important wetlands are present in coastal fresh and salt marshes. Tidal estuarine communities are present in Newport Bay and Harbor (near project components CIP Projects 05-63, 05-█, 05-41, and 05-61), and within the tidally influenced drainage channel along Bolsa Chica Street in Huntington Beach (near project component 11-25). Figure 3-1 shows generalized areas of wildlife habitat within Orange County.

Habitat

Within Orange County, numerous natural vegetation communities exist and are summarized as follows:

- Non-native Grassland: Characterized by varied topography and climate. Primary vegetation are non-native annual grass species such as brome (*Bromus* spp.), wild oats (*Avena* spp.), and barley (*Hordeum vulgare*)
- Coastal Sage Scrub: Could include up to 30 percent oak coverage with scrub understory in a mixed environment or be limited solely to low-growing brush dominated by California sagebrush (*Artemisia californica*), black and white sage (*Salvia* spp.), prickly pear cactus (*Opuntia* sp.), and various grasses
- Chaparral: Could be dominated by a mixture of less than 30 percent oak tree coverage with scrub understory and characterized by chamise (*Adenostoma fasciculatum*), scrub oak (*Quercus dumosa*), Ceanothus (*Ceanothus* spp.), and manzanita (*Arctostaphylos* spp.)
- Southern Oak Woodland/Forest: Contains coast live oak (*Quercus agrifolia*) with scrub and/or grass understory
- Riparian Woodland/Forest: Characterized by a dense, narrow vegetation band along a stream course; dominated by coast live oak, western sycamore (*Platanus racemosa*), and willow (*Salix* spp.)
- Coastal Marsh: Consists of coastal estuarine areas that could support subtidal habitat, intertidal mudflats, and salt marsh dominated by pickleweed (*Salicornia* spp.) and saltgrass (*Distichlis spicata*); additional brackish areas could support alkali bulrush (*Scirpus maritimus*), cattail (*Typha latifolia*), saltgrass, bulrush (*Scirpus* sp.), and brass buttons (*Cotula coronopifolia*)

Ecologically important communities within or adjacent to the Sanitation District service area are the coastal salt marshes of Bolsa Chica Ecological Reserve, San Joaquin Marsh, and Upper Newport Bay Ecological Reserve. The Bolsa Chica Ecological Reserve is of particular sensitivity, representing the largest relatively undisturbed coastal wetland remaining along the Orange County coastline. The U.S. Fish and Wildlife Service (USFWS) has identified a small portion of Huntington Beach just west of the Pacific Coast Highway near the mouth of the Santa Ana River to be a nesting area for the federally and state-listed endangered species, California least tern (*Sterna antillarum brownii*).

blank page

Additional sensitive habitats include the upstream areas of the Santa Ana River, Santiago Creek, and the open space areas of Orange County north of Yorba Linda. These areas remain in a relatively natural state and provide important habitat for a variety of plants and animals. Local, regional, and state parks also exist within the Sanitation District service area including Clark Regional Park in the City of Buena Park and Craig Regional Park in the City of Fullerton. Other parklands include local nature preserves, city parks, and golf courses located throughout the service area.

Habitat Protection

The California Department of Fish and Game (CDFG) protects rare, threatened, or endangered species by managing habitat as ecological reserves or wildlife areas. The USFWS maintains the National Wildlife Refuge system. Additional tracts of open space supporting valuable wildlife resources are administered by other federal and state agencies, including the U.S. Forest Service, U.S. Park Service, Bureau of Land Management, USACE, and California Department of Parks and Recreation.

The Federal Endangered Species Act and the State Endangered Species Act were created to prevent plant and animal species from becoming rare, endangered, or threatened with extinction. Under Section 10 of the Federal Endangered Species Act, the taking of listed species on private lands can be permitted by preparing a Habitat Conservation Plan that identifies the anticipated impacts of specific projects and by implementing appropriate conservation measures. Proposed mitigation measures must be clearly identified before the USFWS can approve a Habitat Conservation Plan. The Central-Coastal Natural Community Conservation Plan includes areas that are in the eastern and southern part of the Sanitation District service area.

Special-Status Species

Special-status species are defined to include those (1) listed or proposed for listing by state or federal agencies as rare, threatened, or endangered; (2) federal Species of Concern or state Species of Special Concern; (3) species listed by the California Native Plant Society with a designation of Category 2 (indicating species that are rare or endangered in California but more common elsewhere) or Category 1B (indicating species that are rare or endangered in California and elsewhere); or (4) species identified by biologists with regional knowledge as being of conservation concern or local interest. Appendix D provides a list of special-status plant and wildlife species potentially occurring in the proposed Plan area and includes information on status, likelihood for occurrence, and habitat requirements.

3.3.2 Impacts

Potential direct and indirect impacts to biological resources were evaluated to determine the temporary and permanent effects of construction, operation, and maintenance of the proposed Plan.

Thresholds of Significance

Analysis of potential impacts of the proposed Plan was based on evaluation of the effects to existing biological resources that would result from construction and operation of the proposed Plan. Significance criteria for evaluating potential impacts of the proposed Plan to

biological resources were developed from the CEQA Checklist. Potential impacts to biological resources would be considered significant if construction or operation of the proposed Plan would result in any of the following:

- Substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species by local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Substantial adverse effect on any riparian habitat or other sensitive natural community identified by local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, areas such as marsh, vernal pools, and coastal) through direct removal, filling, hydrological interruption, or other means.

Other significance criteria identified in the CEQA Checklist for the proposed Plan were evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have no impact associated with these other significance criteria for the following reasons:

- The proposed Plan would not interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- The proposed Plan would not conflict with any local policies or ordinances protecting biological resources.
- The proposed Plan would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Evaluation

As stated in Section 3.3.1 Setting, the Sanitation District service area comprises predominantly densely urbanized, residential, commercial, and industrial developments. Wildlife within urbanized, developed areas is limited to landscaped parks and golf courses, residential neighborhoods, transportation corridors, and flood control channels. In general, potential impacts to biological resources would be largely limited to areas of naturalized habitat and tidal estuarine communities within the service area. These include naturalized habitat present in the Naval Weapons Station Seal Beach along Bolsa Chica Street (near project component 11-25) and in the area behind Fullerton Dam near Associated Road (near project component 02-65), and the tidal estuarine communities present in Newport Bay and Harbor (near project components CIP Projects 05-63, 05-█, 05-41, and 05-61), and within the tidally-influenced drainage channel along Bolsa Chica Street in Huntington Beach (near project component 11-25).

Potential Impacts on Special-Status Species. In most cases, specific impacts to special-status species can be determined only once precise construction limits, staging areas, and scheduling of proposed activities are determined. Therefore, impacts to special-status species would be reassessed at the project level, and, if needed, appropriate mitigation would be identified at that time. The determination to conduct additional CEQA

environmental review also would occur at that time. Focused surveys, where required, also would be conducted at the project level.

Special-Status Plants. Within vacant fields, naturalized grasslands, or natural coastal habitats (for example, coastal marshes), special-status plants could occur, such as southern tarplant (*Centromadia parryi* ssp. *australis*), Lyon's pentachaeta (*Pentachaeta lyonii*), or Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*). While the majority of improvements are proposed within roadways or other developed areas, some construction or staging might occur in vacant fields or other areas adjacent to developed areas that could support special-status plant species. The loss of individuals or populations of these species from construction activities, if they are determined present, would represent a significant adverse impact, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status plants to a level that is less than significant.

Special-Status Birds

Burrowing Owl. Burrowing owl (*Athene cunicularia*) is a permanent resident in grasslands, deserts, or other open habitats, where it can use underground burrows for nesting. Generally, the species requires open areas of 5 acres or more. Potential habitat could occur in some areas proposed for construction, such as at Fullerton Dam or at the Naval Weapons Station Seal Beach along Bolsa Chica Street. Where staging or construction results in land clearing within these open areas, the potential to affect individuals or populations of burrowing owl exists. The loss of individuals, populations, or active nesting colonies of this species, if determined present, would represent a significant adverse impact, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status birds to a level that is less than significant.

Tree-Nesting Raptors. Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), or other special-status birds of prey might nest in urban or undeveloped areas in trees large enough to support nest structures. Nests are especially likely in areas adjacent to open space, such as near Fullerton Dam, Upper Newport Bay Ecological Reserve, or the Naval Weapons Station Seal Beach. Construction noise and activity, where adjacent to active nests, could cause disturbance or disruption of nesting, or nest abandonment. The loss of individuals of these species or active nests, if determined present, from construction disturbance would represent a significant adverse impact, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status birds to a level that is less than significant.

Ground-Nesting Raptors. Some birds of prey might nest on ground surfaces in large, open areas, or within coastal or freshwater wetland areas. This includes northern harrier (*Circus cyaneus*) and short-eared owl (*Asio flammeus*). Habitat for these species could be limited to the Naval Weapons Station Seal Beach along Bolsa Chica Street and areas near Upper Newport Bay Ecological Reserve. Land clearing and construction noise and activity, where adjacent to active nests, could cause disturbance or disruption of nesting, or nest abandonment. The loss of individuals of these species or active nests, if determined present, from construction disturbance would represent a significant adverse impact, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special status-birds to a level that is less than significant.

Colonial-Nesting Waterbirds. California least tern (*Sterna antillarum browni*), black skimmer (*Rynchops niger*), and other colonial-nesting birds might nest on open sandy areas, gravel islands, or spits near the coast. No known nest sites or suitable habitat is in the immediate vicinity of proposed project elements, so no impacts are anticipated. Nesting colonies of least tern and other birds have been reported at Bolsa Chica Ecological Reserve, Upper Newport Bay Ecological Reserve, and other locations along the Southern California coast. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status birds to a level that is less than significant.

Grassland Birds. California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), or other special-status birds might nest in grassland or open shrublands throughout the proposed project area. Generally large, open areas are required for these species, and they are most likely in the vicinity of Naval Weapons Station Seal Beach, Fullerton Reservoir, or Upper Newport Bay Ecological Reserve. Land clearing and construction noise and activity, where adjacent to active nests, could cause disturbance or disruption of nesting, or nest abandonment. The loss of individuals of these species or active nests, if determined present, from construction disturbance would represent a significant adverse impact, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status birds to a level that is less than significant.

Riparian-Nesting Birds. Yellow warbler (*Dendroica petechia brewsteri*) or least Bell's vireo (*Vireo bellii pusillus*) might nest in dense, extensive streamside vegetation consisting of cottonwood (*Populus fremontii*) or willow (*Salix* spp.) canopy composition. Within the vicinity of the proposed Plan components, this habitat is not known to exist. However, the presence of this habitat and the species it supports would be assessed at the project level once specific project staging areas are known. Where intact riparian habitat is identified at the project level, impacts to riparian species would be avoided by limited construction to areas outside the riparian canopy, and avoiding activities that could disturb riparian birds during the breeding season (February to August). Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status birds to a level that is less than significant.

Breeding Wetland Birds. Wetland birds might be present or nesting in wetland habitat adjacent or nearby proposed Plan components, including the California black rail (*Laterallus jamaicensis coturniculus*) in brackish and fresh marshes, Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) in salt marshes, or American bittern (*Botaurus lentiginosus*) in marshes. Suitable habitat could be present in the tidal channel adjacent to Naval Weapons Station Seal Beach along Bolsa Chica Street, or in areas surrounding the Upper Newport Bay Ecological Reserve. Construction activities adjacent to active nesting habitat for these species could result in disturbance or disruption of breeding activities, if populations of the species are present. This would represent a significant, adverse impact, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status birds to a level that is less than significant.

Foraging Birds. Special-status birds might forage in wetland or upland areas adjacent to proposed construction activities. This could include osprey (*Pandion haliaetus*), brown pelican (*Pelecanus occidentalis californicus*), and western grebe (*Aechmophorus occidentalis*) in wetland areas like Newport Bay and Harbor or the wetland channel along Bolsa Chica Street. This also could include golden eagle (*Aquila chrysaetos*) or merlin (*Falco columbarius*)

in open grasslands such as at the Naval Weapons Station Seal Beach. Construction activities might provide some additional level of disturbance to these foraging birds and temporarily make the areas adjacent to construction unsuitable for these species. Generally, these impacts are anticipated to be minor and temporary, and birds are anticipated to move on their own to forage elsewhere. As such, the impact would be less than significant.

Special-Status Mammals

Small Mammals. Pacific pocket mouse (*Perognathus longimembris pacificus*) could occur in alluvial soils in open areas near the coast. Potential habitat exists on Naval Weapons Station Seal Beach or on other open habitats adjacent to proposed Plan components. If this species is present, land clearing, substantial vibration from underground construction, or surface fractures from underground directional drilling could result in disturbance or mortality to individuals, if present. This would represent a significant adverse effect, requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status mammals to a level that is less than significant. California salt marsh shrew (*Sorex ornatus salicornicus*) might be present in salt marsh habitats; however, no salt marsh areas are near the proposed construction, and impacts to the species are not anticipated.

Roosting Bats. Crevice-roosting bats could occur in bridge structures or other open structures in the general vicinity of proposed Plan components. This could include Yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis*), or other special-status bat species. Construction in the vicinity of active roosts could result in roost disturbance or abandonment, which is considered a significant, adverse impact. If bat roosts are present, mitigation would be required to reduce impacts to a level that is less than significant. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special-status mammals to a level that is less than significant.

Special-Status Amphibians and Reptiles. Southwestern pond turtle (*Clemmys marmorata pallida*) could be present in freshwater streams and rivers within the proposed Plan area. In areas adjacent to proposed Plan components, habitat to support this species is lacking. As such, no impacts are anticipated. Some terrestrial reptiles, such as silvery legless lizard (*Anniella pulchra pulchra*) or coast patch-nosed snake (*Salvadora hexalepis virgulata*), could be present on open, vacant habitats at the Naval Weapons Station Seal Beach. Land clearing or construction could result in direct mortality of these species, representing a significant, adverse impact requiring mitigation. Mitigation Measure 3.3-1 has been identified to reduce potential impacts to special amphibians and reptiles to a level that is less than significant.

Special-Status and Marine Fisheries

Freshwater Fishes. No habitats with potential to support freshwater fishes are present within the proposed Plan area. As such, no impacts to arroyo chub (*Gila orcutti*), Santa Ana sucker (*Catostomus santaanae*), or other special-status freshwater fish are anticipated.

Marine and Estuarine Species. Potential nursery sites for marine fisheries are present in estuarine areas in Newport Bay and Harbor, and potentially in the tidal stream adjacent to Bolsa Chica Street alongside the Naval Weapons Station Seal Beach. The presence of eelgrass (*Zostera marina*) beds is unidentified in areas adjacent to proposed Plan components, but potential habitat exists. Construction is not anticipated to directly affect marine or estuarine waters; however, potential for indirect effects through construction debris or sediment runoff, fuel leaks, or other potential contamination exists. Introducing contaminants into

estuarine or marine waters could affect marine fisheries, and would represent a significant, adverse effect, requiring mitigation. Avoidance and minimization measures would include construction best management practices to limit the risk to aquatic habitats. Mitigation Measure 3.3-2 has been identified to reduce potential impacts to special-status and marine fisheries to a level that is less than significant.

Special-Status Invertebrates. Habitats that could support wandering skipper (*Panoquina errans*) include salt marsh or pickleweed (*Salicornia* spp.) along brackish channels. Other sensitive invertebrates in the proposed Plan area could include California brackish water snail (*Tryonia imitator*). Sensitive invertebrates in the Plan area generally are limited to wetland or marsh habitats, or coastal dune habitats. Measures to avoid these habitats, including realignment or jack and bore, would be taken during design and construction, and no impacts to these species are anticipated.

Potential Impacts on Sensitive Natural Communities

Riparian Communities. Riparian habitat consists of cottonwood and willow woodland forests adjacent to watercourses. Riparian habitat is limited within the vicinity of the proposed Plan components, including locations at Fullerton Reservoir and Upper Newport Bay Ecological Reserve. Generally, these habitats are not anticipated to be affected by the proposed Plan components. However, the presence and extent of this habitat would be assessed at the project level once specific project staging areas are known. Where intact riparian habitat is identified at the project level, impacts to the habitat would be avoided by limiting construction to areas outside the riparian canopy and by avoiding activities that could disturb riparian species.

Salt Marsh Communities. Only limited salt marsh habitat exists within the vicinity of the proposed Plan components, including locations at Upper Newport Bay Ecological Reserve, Bolsa Chica Ecological Preserve, and potentially on Naval Weapons Station Seal Beach. Generally, these habitats are not anticipated to be affected by the proposed Plan components. However, the presence and extent of this habitat would be assessed at the project level once specific project staging areas are known. Where intact salt marsh habitat is identified at the project level, impacts to the habitat would be avoided by limiting construction to areas outside the habitat, and avoiding activities that may disturb salt marsh species.

Aquatic Estuarine Communities. Aquatic estuarine communities are present at Newport Bay and Harbor, and potentially in the tidal stream adjacent to Bolsa Chica Street alongside the Naval Weapons Station Seal Beach. The presence of eelgrass (*Zostera marina*) beds is unidentified in areas adjacent to proposed Plan components, but potential habitat exists. Construction is not anticipated to directly affect marine or estuarine waters. However, potential for indirect effects through construction debris or sediment runoff, fuel leaks, or other potential contamination do exist. Introducing contaminants into estuarine or marine waters could affect this habitat and would represent a significant, adverse effect, requiring mitigation. Avoidance and minimization measures would include construction best management practices to limit the risk to aquatic habitats.

Potential Impacts on Jurisdictional Areas Including Wetlands. Jurisdictional Waters of the U.S., including wetlands, are present within the proposed Plan area. This includes the navigable Newport Bay and Harbor and adjacent salt marsh wetlands, the tidal channel along Bolsa

Chica Street, the stream drainages within Fullerton Reservoir, and other storm drain channels throughout the region. Any discharge of construction material or debris, flow of contaminants, placement of temporary structures, or any other filling of these jurisdictional areas would represent a significant, adverse impact, requiring mitigation. Impacts to jurisdictional wetlands and waters would be assessed at the project level once specific project design is available. Permits under Section 404 of the federal Clean Water Act would be needed at that time, which would require detailed analysis of impacts and a proposal for mitigating impacts. Mitigation Measure 3.3-3 has been identified to reduce potential impacts to jurisdictional areas, including wetlands, to a level that is less than significant.

Impact 3.3-1: Areas of natural habitat within the footprint of proposed activities could impact special-status biological resources.

Impact 3.3-2: Runoff from construction activities could impact aquatic fisheries.

Impact 3.3-3: Project activities within jurisdictional areas, including wetlands, would result in impacts to biological resources.

3.3.3 Mitigation Measures

Mitigation Measure 3.3-1: Evaluation of impacts to special-status plants, birds, mammals, and amphibians and reptiles will occur at the project level. Specifically, all areas of natural habitat within the footprint of proposed construction activities with potential to support special-status biological resources will be surveyed according to standard protocol. Where special-status biological resources are identified within the project footprint, appropriate avoidance, minimization, and mitigation measures will be implemented. Depending on the special-status biological resources present, measures could include the following.

Where rare plants are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:

- Project design will be evaluated to determine if an exclusionary zone can be established around rare plant populations; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact.
- If rare plant populations cannot be avoided, then appropriate salvage of plant propagules will be implemented, and suitable habitats for transplanting or re-establishing population will be identified and implemented.
- Mitigation will include an analysis of the suitability of alternative locations and identification of suitable propagation techniques.
- Procurement of conservation easements will be implemented for alternative suitable habitats if the habitats are not secured already with conservation status.

Where special-status nesting birds are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:

- Project design will be evaluated to determine if a 500-foot minimum exclusionary zone can be established around active bird nests; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact.

- If nesting birds or active nest sites cannot be avoided, construction will be timed to avoid the active nesting season (February to August), and construction activities will not commence in the vicinity of nests until young have fledged.

Where special-status mammals or bat roosts are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:

- Project design will be evaluated to determine if a 500-foot minimum exclusionary zone can be established around active bat roosts; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact.
- Project design will be evaluated to determine if direct impacts to habitats supporting small mammals can be avoided with an exclusionary zone; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact.
- Where avoidance is not feasible, trapping or hazing of special-status mammals to remove them from the project site will be implemented, and individuals will be relocated to suitable habitat nearby; temporary fencing will be installed to prohibit species from returning to the construction zone.
- If construction adjacent to bat roosts cannot be avoided, construction will be timed to avoid the parturition period (February to August), and construction activities will not commence in the vicinity of maternity roosts until young are weaned.
- If construction must occur during the parturition period, active bat roosts will be excluded prior to onset of breeding.

Where special-status amphibians and reptiles are identified within the project footprint, the following avoidance, minimization, and mitigation measures will be implemented:

- Project design will be evaluated to determine if direct impacts to habitats supporting amphibians or reptiles can be avoided with an exclusionary zone; where feasible, this will be implemented, and construction activities will be relocated or modified to avoid impact.
- Where avoidance is not feasible, trapping or hazing of special-status amphibians or reptiles to remove them from the project site will be implemented, and individuals will be relocated to suitable habitat nearby; temporary fencing will be installed to prohibit species from returning to the construction zone.

Mitigation Measure 3.3-2: To avoid impacts to aquatic fisheries, best management practices will be implemented to avoid contaminant runoff from construction practices. This will include the following:

- Equipment will not be operated in areas of ponded or flowing water. Stationary equipment such as motors, pumps, generators, and welders will be located a minimum of 200 feet outside wetland or aquatic habitats; construction staging areas, stockpiling, and equipment storage will be located a minimum of 200 feet outside aquatic and wetland habitats.

- Construction vehicles and equipment will be checked periodically to ensure that proper working conditions with no potential for fugitive emissions of oil and other hazardous products exist. Refueling or lubrication of vehicles and cleaning of equipment, or other activities that involve open use of fuels, lubricants, or solvents, will occur in upland locations at least 200 feet away from aquatic or wetland habitats.
- Temporary sediment-retention structures, hay bales, or silt fencing will be placed downstream of construction areas; sediment-retention devices will prevent sediment-laden water from draining offsite; sediment-retention structures will be maintained and repaired after flood events.

Mitigation Measure 3.3-3: Direct impacts to jurisdictional areas including wetlands generally will be avoided by identifying these communities at the project analysis level and designing project components to avoid these areas. However, if impacts to jurisdictional wetlands cannot be avoided, then the following mitigation will be implemented:

- Delineation of affected jurisdictional sites will be implemented and impacts analyzed; this information will support permit applications to the USACE under Section 404 of the Clean Water Act.
- A proposed mitigation plan to compensate for impacts to jurisdictional areas will be developed and approved by the USACE; the mitigation plan will be implemented to compensate for impacts.
- To avoid indirect impacts to jurisdictional areas from contaminant runoff, Mitigation Measure 3.3-2 will be implemented.

3.3.4 Significance After Mitigation

All impacts to biological resources, as identified at the project level, are anticipated to be reduced to a level that is less than significant after mitigation is implemented.

3.4 Cultural Resources

3.4.1 Setting

Existing Setting

The earliest evidence of prehistoric use of the area north of San Diego, including the Sanitation District service area, is represented by the Millingstone cultural pattern. Such aboriginal populations in Southern California were culturally conservative and were basically hunter-gatherers throughout the prehistoric period (Wallace, 1955; Warren, 1968). During this occupation, a littoral (coastal) adaptation can be seen. Small native populations subsisted on plant foods, including seeds, tubers, and berries. Inhabitants also collected shellfish along the coast and bays, and hunted small and large game. They made extensive use of grinding stones. Projectile points were few in number, wide, thick, and heavy. They were presumably used as spearpoints based on their weights (Fenenga, 1953). Ceremonial stones known as cogstones, enigmatic ground discs, serve as one of the time markers for this early occupation.

In the ensuing cultural period, the Intermediate Horizon (Campbell) populations expanded their resource base. Hunting and fishing assumed greater importance in the economy, and the mortar and pestle tools, used in processing acorns and other fleshy plant foods, were added to the existing food processing equipment. Projectile points remained relatively large and heavy. In the final prehistoric period, during the time of the Late Horizon Cultures, evidence exists of a marked expansion of local economies. An increase in cultural elaboration, as well as a proliferation of nonutilitarian items in the cultural inventory of local populations occurred.

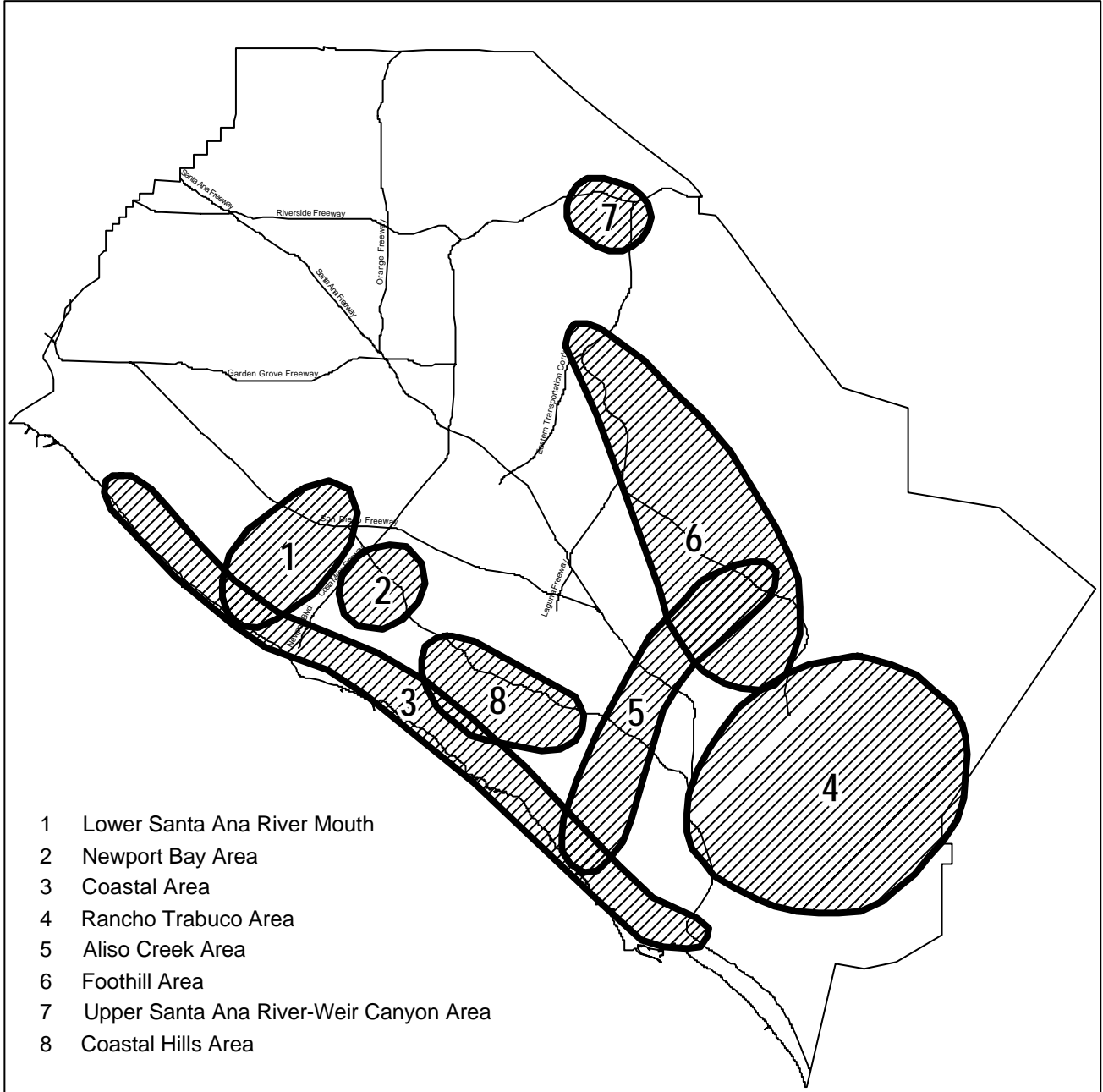
Within the Sanitation District service area, several general areas of archaeological and paleontological sensitivity exist. Areas of archaeological sensitivity include the Lower Santa Ana River Mouth, Newport Bay Area, Coastal Area, Coastal Hills Area, and Upper Santa Ana River-Weir Canyon Area (see Figure 3-2). Areas of paleontological sensitivity include Newport Bay District, San Joaquin Hills District, Northern Santa Ana Mountains, Yorba Linda-Eastern Puente Hills, and Coyote Hill (see Figure 3-3). Historical areas generally include pre-1940 population centers and county- and state- identified historic sites (see Figure 3-4) (County of Orange, 2005).

Regulatory Setting

Federal. The National Historic Preservation Act of 1966 (as amended) established the Advisory Council on Historic Preservation and the National Register of Historic Places. Section 106 of the Act requires that projects located on federal land or constructed with federal funds, and those that require federal permits, must endeavor to locate all cultural resources within the Area of Potential Effect of the proposed project. Cultural resources then must be evaluated for their eligibility for inclusion in the National Register. Sites judged significant must be avoided or be subject to programs that mitigate adverse effects.

State. CEQA establishes two separate mechanisms for evaluating potential adverse effects on archaeological resources. These include the California Register of Historic Resources and “unique” archaeological resources. CEQA emphasizes avoidance of cultural resources as the preferred means of preservation. If avoidance of a significant cultural resource is impossible, an excavation program, or some other form of mitigation, must be developed to mitigate adverse impacts. If a cultural resource is not significant, it need not be considered further in the planning process.

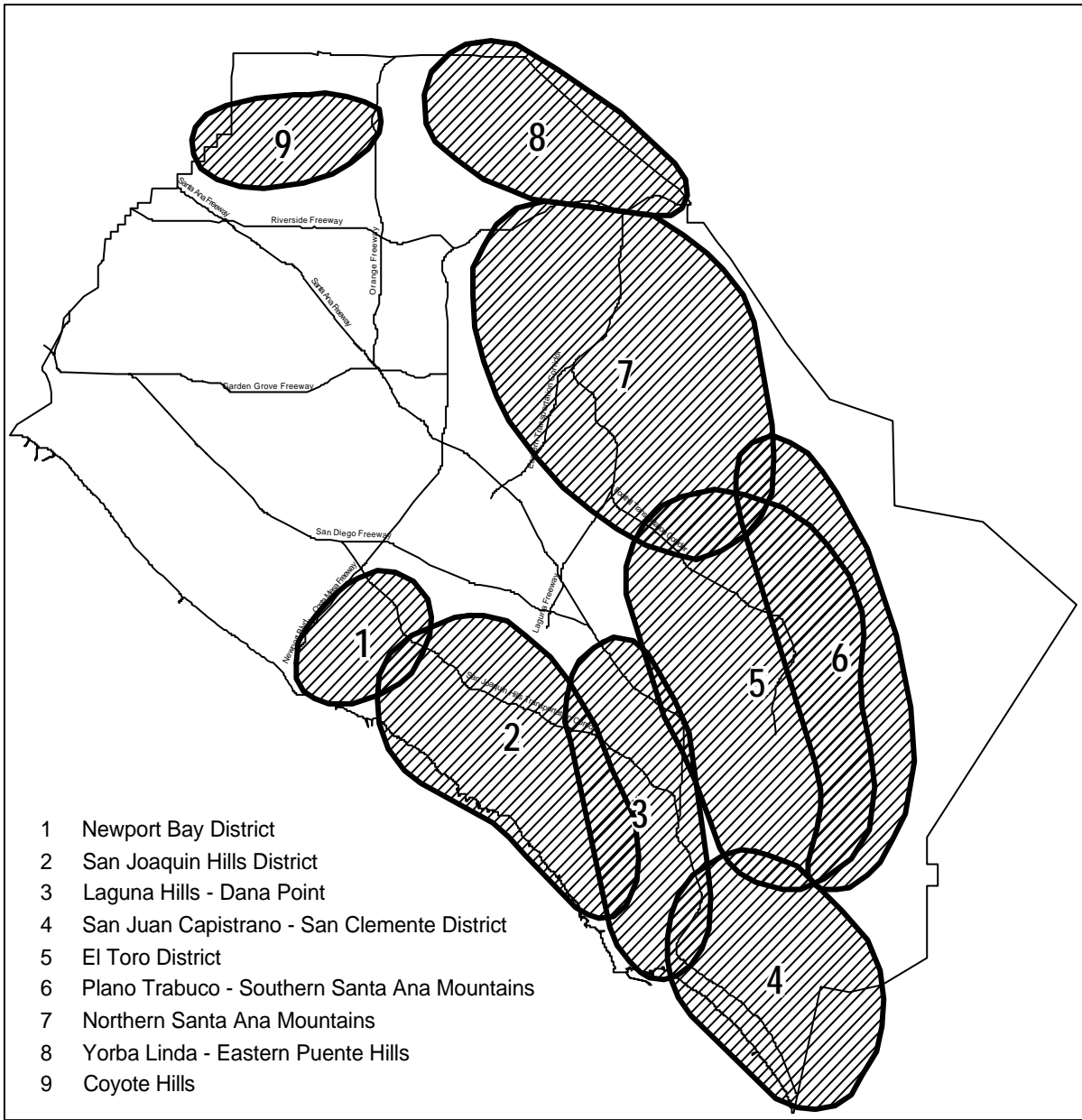
California Register of Historic Places. The California Register of Historic Resources is the authoritative guide and listing of properties to be protected from substantial adverse change. This list includes properties listed or formally determined eligible for the National Register of Historical Places (NRHP), State Historical Landmarks, and eligible Points of Historical Interest. For a resource to be eligible for listing in the California Register, it must satisfy each of the following three criteria: (1) a property must be significant at the local, state, or national level; (2) the resource retains historic integrity; and (3) the property is 50 years old or older (some exceptions apply).



Source: Orange County Resources and Development Management Department

FIGURE 3-2
 Prehistoric Archaeology
 General Areas of Sensitivity
 Orange County Sanitation District

blank page



Source: Orange County Resources and Development Management Department

FIGURE 3-3
 Paleontology
 General Areas of Sensitivity
 Orange County Sanitation District

blank page

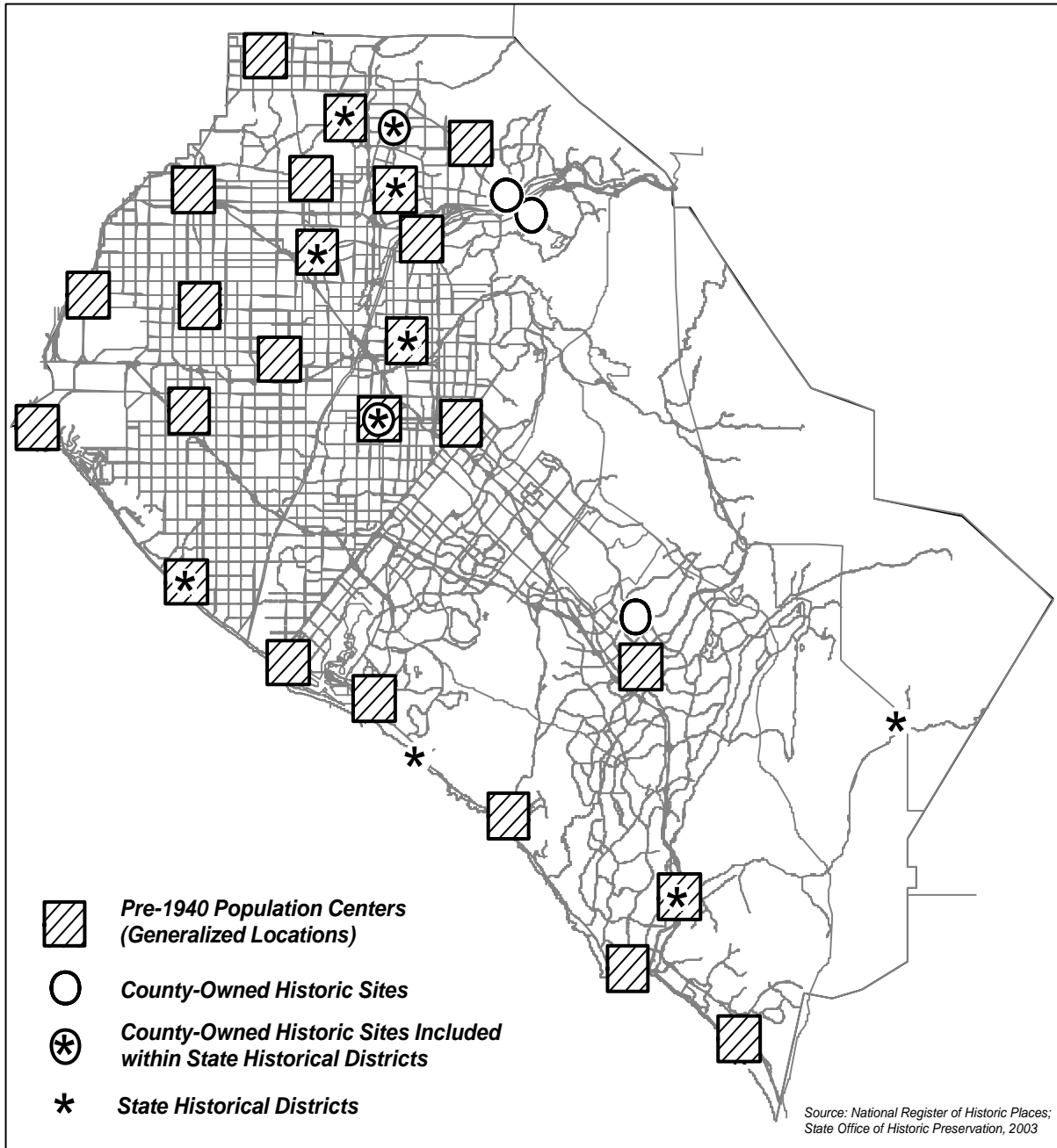


FIGURE 3-4
 Orange County Historical Areas
 Orange County Sanitation District

blank page

Native American Resources in California. The State of California Health and Safety Code and the Public Resources Code apply to Native American sacred places on public lands and the discovery of skeletal remains on state and private land. The Health and Safety Code requires the coroner to contact the Native American Heritage Commission within 24 hours by telephone if it is recognized that human remains are prehistoric. The Public Resources Code prohibits interference with the free expression or exercise of Native American religion; establishes a Native American Heritage Commission; requires the Commission to prepare an inventory of sacred places located on public land; and grants the Commission power to conduct investigations and recommend mitigation for agency actions that could cause damage to Native American sacred places on public property. Also, obtaining or possessing Native American remains or associated grave goods is a felony.

Local. The Cultural and Historic Resources section (Chapter IV, Resources Element) of the Orange County General Plan identifies the importance of cultural resources management in Orange County. Applicable goals, objectives and policies of the General Plan to the Sanitation District service area, with regard to cultural resources management, are identified as follows.

Goal 2: To encourage through a resource management effort the preservation of the cultural and historic heritage of the county.

Objectives

- Promote the preservation and use of buildings, sites, structures, objects, and districts of importance in Orange County through the administration of planning, environmental, and resource management programs.
- Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values.
- Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value.
- Provide assistance to county agencies in evaluating the cultural environmental impact of proposed projects and reviewing EIRs.
- Provide incentives to encourage greater private sector participation in historic preservation.

Policies

The following policies addressing archaeological, paleontological, and historical resources shall be implemented at appropriate stage(s) of planning, coordinated with the processing of a project application, as follows:

- Identification of resources shall be completed at the earliest stage of project planning and review (for example, general plan amendment or zone change).
- Evaluation of resources shall be completed at intermediate stages of project planning and review (for example, at site plan review or subdivision map approval), or at an earlier stage of project review.

- Final preservation actions shall be completed at final stages of project planning and review (for example, grading or demolition), or at an earlier stage of project review.

Archaeological Resource Policies

- Identify archaeological resources through literature and records research and surface surveys.
- Evaluate archaeological resources through subsurface testing to determine significance and extent.
- Observe and collect archaeological resources during the grading of a project.
- Preserve archaeological resources by:
 - Maintaining them in an undisturbed condition
 - Excavating and salvaging materials and information in a scientific manner

Paleontological Resource Policies

- Identify paleontological resources through literature and records research and surface surveys.
- Monitor and salvage paleontological resources during the grading of a project.
- Preserve paleontological resources by maintaining them in an undisturbed condition.

Historic Resource Policies

- Identify historic resources through literature and records research and/or onsite surveys.
- Evaluate historic resources through comparative analysis or through subsurface or materials testing.
- Preserve significant historic resources by one or a combination of the following alternatives, as agreed upon by Orange County and the project sponsor:
 - Adaptive reuse of historic resource
 - Maintaining the historic resource in an undisturbed condition
 - Moving the historic resource and arranging for its treatment
 - Salvage and conservation of significant elements of the historic resources
 - Documentation (i.e., research narrative, graphics, and photography) of the historic resource prior to destruction

3.4.2 Impacts

Potential direct and indirect impacts to cultural resources were evaluated to determine the temporary and permanent effects of the proposed Plan construction, operation, and maintenance.

Thresholds of Significance

Analysis of potential impacts of the proposed Plan was based on evaluation of the effects to existing cultural resources that would result from construction and operation of the proposed Plan. Significance criteria for evaluating potential impacts of the proposed Plan to cultural resources were developed from the CEQA Checklist. Potential impacts to cultural

resources would be considered significant if construction or operation of the proposed Plan would do the following:

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
- Destroy, either directly or indirectly, a unique paleontological resource or site or unique geologic feature
- Disturb any human remains, including those interred outside formal cemeteries

An additional significance criterion identified in the CEQA Checklist for the proposed Plan was evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have no impact associated with this other significance criterion because the proposed Plan would occur within existing collection system rights-of-way and would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Evaluation

Cultural resources are defined as buildings, structures, objects, sites, and districts of significance in history, archaeology, architectural history, and culture. Over 1,000 registered archaeological sites are in Orange County (County of Orange, 2005). Impacts to cultural resources can be direct or indirect and generally occur in three categories: (1) direct disturbance of buried resources; (2) direct impact or alteration of structures; and, (3) indirect impacts to structures, such as by ground vibration and corrosive air contaminants, or by the introduction of elements that detract from the historic integrity of the surroundings.

Archaeological Evaluation. As stated in the Existing Setting section above, eight general areas of sensitivity for prehistoric archaeology exist throughout Orange County, of which four areas are located within the Sanitation District service area (see Figure 3-2). Collection system improvements within these areas of sensitivity potentially could affect archaeological resources. Additionally, some of the proposed collection system improvement would occur in areas that have creeks, rivers (freshwater sources), or embayments (shellfish and fish sources) that attracted prehistoric populations. Remnants of these prehistoric and historic developments are recorded along coastal areas and areas adjacent to rivers and creeks. Site-specific review of individual project alignments would be completed during project design and potential impacts to archaeological resources would be mitigated to less than significant. Mitigation Measure 3.4-1 has been identified to ensure that site-specific review considers potential impacts to archaeological resources and that potential impacts to archaeological resources are mitigated to less than significant.

While earthmoving construction activities (i.e., grading, excavation, trenching, and boring) in undisturbed soil have a greater potential for encountering unknown archaeological resources, ground-disturbing activities within urbanized areas potentially could encounter unknown archaeological resources if the existing uses were developed prior to federal, state, and local requirements to perform documentation of the cultural resources. Mitigation Measures 3.4-2a and 3.4-2b have been identified to reduce potential impacts to archaeological resources to a level that is less than significant.

Paleontological Evaluation. As stated in the Existing Setting section above, nine general areas of sensitivity for paleontology exist throughout Orange County, of which five areas are located within the Sanitation District service area (see Figure 3-3). Collection system improvements within these areas of sensitivity potentially could affect paleontological resources. Construction excavations and soil removal of any kind, regardless of depth, have the potential to affect paleontological resources. Mitigation Measure 3.4-1 has been identified to reduce potential impacts to paleontological resources to a level that is less than significant.

Evaluation of Human Remains. Humans have occupied Southern California for over 10,000 years, and their archaeological human remains have been discovered in Orange County. These remains are sometimes isolated and not associated with archaeological sites, which makes predicting where they would occur a difficult matter. Interments are often unmarked and can consist of cremation remains or informal and formal burials. Human remains are protected under the National Environmental Protection Act (NEPA), CEQA, and Native American Graves Protection and Repatriation Act (NAGPRA) of 1990. Earthmoving construction activities potentially could uncover buried human remains. Mitigation Measure 3.4-2c has been identified to reduce potential impacts to buried human remains to a level that is less than significant.

Impact 3.4-1: Project activities could affect known, significant archaeological, paleontological, and historical resources.

Impact 3.4-2: Construction excavation could accidentally discover cultural resources, including buried human remains.

3.4.3 Mitigation Measures

The following mitigation measures are intended to offset project impacts on cultural resources.

Mitigation Measure 3.4-1: During preliminary design a Registered Professional Archaeologist (RPA) will complete a literature review using the archives of the South Central Coastal Information Center of the California Historical Resources Information System (CHRIS), located at California State University Fullerton, and other sources as needed to identify previous cultural resources studies and previously recorded archaeological sites within close proximity to the project alignment. The literature search will also include a search of the Sacred Lands Database maintained by the California Native American Heritage Commission (NAHC).

Using the results of the literature review in part, the archaeologist will develop a cultural resources sensitivity map for the project alignment, followed by a determination of specific areas of the project that may require preconstruction survey, subsurface testing, or construction monitoring. Cultural resources identified as a result of the literature review, field survey, testing, or construction monitoring will be evaluated by a RPA to determine whether they meet the criteria for designation as a historical resource (14 CCR § 4850, PRC § 21084.1, 14 CCR § 15064.5(3)) or a “unique archeological resource” as defined in PRC § 21083.2. If resources are present on state lands, Office of Historic Preservation (OHP) will be consulted (PRC § 21083.2).

For sites within project alignment where human remains have been previously documented, the Sanitation District would enter into a written agreement between an archaeological consultant, to be retained by the Sanitation 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 will define “associated burial goods” with reference to PRC § 5097.94, 5097.98, and 5097.99 and Health and Safety Code § 7050.5.

Mitigation Measure 3.4-2a: Subsurface construction has the potential for exposing significant subsurface cultural resources. Due to the likelihood of encountering cultural resources, the Sanitation District will implement the following training prior to commencement of construction activities:

- Prior to construction, contractors and Sanitation District staff will receive an archaeological orientation from a professional archaeologist regarding the types of resources that could be uncovered during construction activities and the identification of these resources. The orientation also will cover procedures to follow in the case of any archaeological discovery.

Mitigation Measure 3.4-2b: If cultural resources are encountered at any time during project excavation, construction personnel will avoid altering these resources and their context until a qualified archaeologist has evaluated the situation. Project personnel will not collect or retain cultural resources. Prehistoric resources include, but are not limited to, chert or obsidian flakes, projectile points, mortars and pestles, 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, and ceramics) often found in old wells and privies.

Mitigation Measure 3.4-2c: In the event of accidental discovery or recognition of any human remains, the county coroner will be notified immediately, and construction activities will be halted. If the remains are found to be Native American, the Native American Heritage Commission will be notified within 24 hours. Guidelines of the Native American Heritage Commission will be adhered to in the treatment and disposition of the remains.

3.4.4 Significance After Mitigation

Implementation of the mitigation measures provided above will assure that potential cultural resources impacts will be less than significant.

3.5 Geology and Soils

3.5.1 Setting

This section characterizes the geologic resources of the Sanitation District service area and discusses topography, geology and soils, and seismology.

Topography, Geology and Soils, and Seismology

The Sanitation District service area lies predominantly in an alluvial plain, which is generally less than 300 feet in elevation, in the west and central section of the plain. Several

low-lying mesas interrupt the plain along the northern coast. The plain is enclosed partially by the Santiago Foothills and the Santa Ana Mountains, which rise to 5,600 feet on the east, the Puente and Chino Hills in the north, and the San Joaquin Hills to the south (County of Orange, 2005).

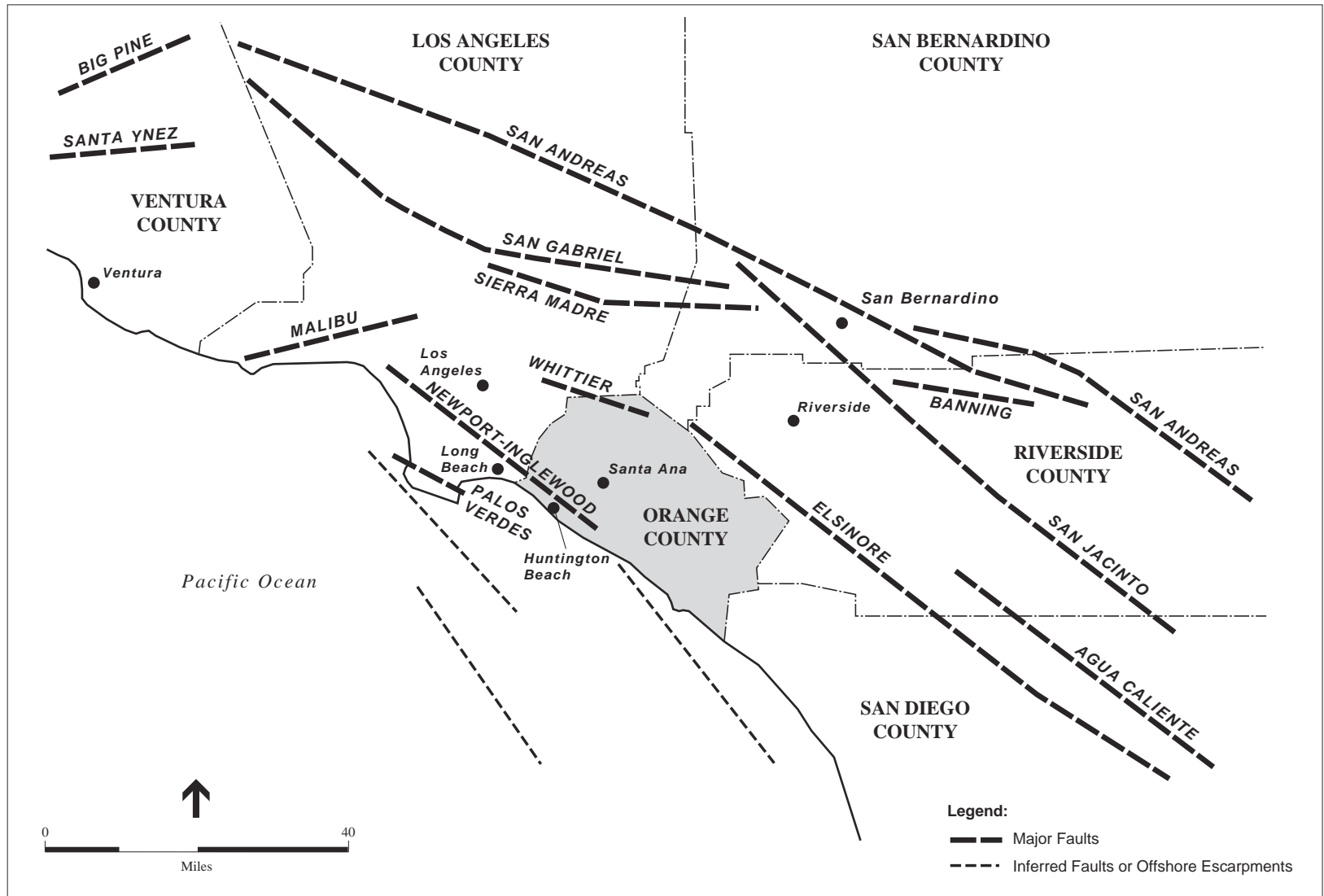
The geology and soils of the Coastal Plain range from Pleistocene to Holocene aged alluvium deposits. The Pleistocene marine terrace deposits have an overlying cover of older alluvium dense silty sands. The Holocene deposits include alluvial soft sand, silt, silty sand, and clay (Department of Conservation, 2001).

Southern California is considered to be one of the most seismically active regions of the world. Over the years, faults in the area have produced numerous moderate- to large-magnitude earthquakes (i.e., greater than 6 on the Richter scale). The major fault structures closest to the Sanitation District service area are the Whittier-Elsinore Fault and Newport-Inglewood Fault. Although the San Andreas Fault is located approximately 27 miles east of the Sanitation District service area, the fault is capable of producing moderate- to large-magnitude earthquakes (County of Orange, 2005). The greatest concentration of local seismic events within the Sanitation District service area has resulted from activity on the Newport-Inglewood Fault and Whittier-Elsinore Fault (see Figure 3-5).

Whittier-Elsinore Fault. The northwest-trending Whittier-Elsinore Fault Zone extends approximately 185 miles from the Los Angeles Basin in Southern California southeasterly across the international border into Mexico as the Laguna Salada Fault (OCWD and the Sanitation District, 1998). This fault zone includes the Whittier Fault, Glen Ivy Fault, Wildomar Fault, Julian Fault, Coyote Mountain Fault, and Laguna Salada Fault extending into Mexico. The maximum credible earthquake (MCE) from the fault is believed to be 7.0 magnitude.

Newport-Inglewood Fault. The Newport-Inglewood Fault Zone in the Los Angeles Basin consists of a series of short, discontinuous, northwest-trending, right-lateral faults, relatively shallow anticlines and subsidiary normal and reverse faults extending approximately 36 miles from the Santa Monica Mountains to offshore Newport Beach. A segment of the fault zone also extends from Newport Beach to about 6 miles southeast of San Onofre. Few specific geological studies for the Newport-Inglewood Fault Zone have been conducted, but historical record has shown that potentially damaging earthquakes have occurred. During the last 65 years, numerous earthquake shocks have occurred along the fault zone ranging from 3.0 to 5.0 on the Richter scale. The most damaging was the March 1933 Long Beach quake, with a magnitude of 6.3. The fault is believed capable of generating an MCE of 7.5 magnitude. Despite the lack of recent surface displacements of known faults along the zone and the absence of extensive damage in recent years, the fault zone is considered a significant potential hazard to the highly developed coastal area (County of Orange, 2005).

San Andreas Fault. The San Andreas Fault Zone is approximately 800 miles long and separates the Pacific Plate from the American Plate. The San Andreas Fault forms a continuous narrow break in the earth's crust, extending from northern California southward to the Cajon Pass near San Bernardino. Several branching faults continue southeastward from the Cajon Pass, with the San Andreas Fault being considered the northeasternmost branch (USGS, 1997).



Source: Orange County Resources and Development Management Department

FIGURE 3-5
 Regional Fault Zones
 Orange County Sanitation District

blank page

Groundshaking. Earthquakes in Orange County potentially could produce strong groundshaking in the Sanitation District service area. Groundshaking is related partly to the size of an earthquake, the distance from the epicenter, and the response of the geologic materials at the site. As a rule, the greater the magnitude of the earthquake and the closer the fault rupture is to the site, the greater would be the intensity of groundshaking.

Deep unconsolidated materials amplify earthquake waves. As discussed, the Newport-Inglewood Fault and Whittier-Elsinore Fault Zones are known active faults within the project site.

Liquefaction. Liquefaction is the rapid transformation of saturated, loose, fine-grained sediment (such as silt and sand) to a fluidlike state because of earthquake groundshaking. As groundshaking induces a rapid rise in excess pore pressure and the soil loses its bearing strength, it may spread laterally, undergo settlement, and form fissures and sand boils (upwellings of sand at the surface). The Sanitation District service area is characterized by sandy surface soils, underlying peat bog, and high water table, all of which are susceptible to liquefaction (Sanitation District, 1999). The Orange County General Plan shows that the liquefaction potential is higher in the western portion of the Sanitation District service area (County of Orange, 2005).

Settlement. Strong ground motions that occur during earthquakes are capable of inducing forms of adjustments. Settlement is the gradual downward movement of an engineered structure due to compaction of unconsolidated material below the foundation. Settlement accelerated by earthquakes could result in vertical or horizontal separations of structures or portions of one structure, cracked foundations. In severe situations, settlement can cause building collapse and bending or breaking of underground utility lines.

3.5.2 Impacts

Thresholds of Significance

Significance criteria for evaluating potential impacts of the proposed Plan to geology and soils were developed from the CEQA Checklist. The proposed Plan would have a significant impact on geology and soils if it would do the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: (1) rupture or a known earthquake fault, as delineated in 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; (2) strong seismic groundshaking; and, (3) seismic-related ground failure, including liquefaction
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse

Other significance criteria identified in the CEQA Checklist for the proposed Plan were evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have a less-than-significant impact or no impact associated with these other significance criteria for the following reasons: (1) the proposed Plan would not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or

death due to landslides; (2) the proposed Plan would not result in substantial soil erosion or loss of topsoil; (3) the proposed Plan would not be located on expansive soils; and, (4) no septic tanks or alternative wastewater disposal systems would serve the proposed Plan.

Evaluation

Proposed improvements to the regional wastewater collection system are located in a region of seismic activity and would be subject to seismic hazards. Alquist-Priolo maps exist for Brea, Seal Beach, and Huntington Beach. Although the proposed improvements do not appear to occur along fault traces, potential impacts to pipelines include rupture from groundshaking or liquefaction during earthquakes. These impacts can be mitigated to a level that is less than significant if pipeline design and construction are in accordance with current engineering practices, including California Building Code, the Sanitation District specification and requirements, and all applicable seismic engineering guidelines. Damage to pipelines is unlikely to result from liquefaction and settlement, since the pipelines would be installed within consolidated, engineered backfill. Pipeline replacement and rehabilitation is likely to improve the seismic reliability of the existing pipelines. In areas with peat bogs, pipelines could be damaged by collapse of peat mat or by fires generated by methane gas beneath structures (County of Orange, 2005). This impact can be mitigated to a level that is less than significant by initially consolidating the area before construction or by removing the peat material prior to construction. Mitigation Measures 3.5-1, 3.5-2, and 3.5-3 have been identified to reduce potential impacts related to seismic and groundshaking, liquefaction, and settlement, to a level that is less than significant.

Impact 3.5-1: Project facilities would be located in areas susceptible to seismicity and groundshaking.

Impact 3.5-2: Project facilities could be placed in areas with the potential for liquefaction.

Impact 3.5-3: Project facilities could be placed in soils susceptible to settlement.

3.5.3 Mitigation Measures

Mitigation Measure 3.5-1: The Sanitation District will design and construct new facilities in accordance with the Sanitation District standards and/or applicable building codes.

Mitigation Measure 3.5-2: Soil surveys will be conducted to determine the liquefaction potential along the routes for the improvements to the collection system. Pipelines will be installed within consolidated, engineered backfill.

Mitigation Measure 3.5-3: Areas of peat bogs will be consolidated before construction or peat material will be removed prior to construction. Pipelines will be installed within consolidated, engineered backfill.

3.5.4 Significance After Mitigation

Implementation of the mitigation measures provided will assure that potential seismic impacts will be less than significant.

3.6 Hazards and Hazardous Materials

3.6.1 Setting

Hazardous substances include chemicals regulated by the United States Department of Transportation (USDOT) “hazardous materials” regulations and the USEPA “hazardous waste” regulations, including emergency response. Hazardous materials are substances that, by their nature and reactivity, have the capacity of causing harm or a health hazard during normal exposure or an accidental release or mishap, and are characterized as being toxic, corrosive, flammable, reactive, an irritant, or strong sensitizer. Hazardous wastes require special handling and disposal because of potential to damage public health and the environment. The Sanitation District uses the following chemicals in the collection system for odor and corrosion control.

- Hydrogen peroxide, an oxidizing agent, is corrosive. Safety glasses and rubber gloves are worn when handling the material.
- Sodium hydroxide can cause severe burns to skin and clothing and can severely corrode equipment when in contact with it. Contact with the chemical constitutes a worker safety hazard; however, sodium hydroxide does not vaporize readily or pose a threat to sensitive receptors.
- Ferrous chloride is added to the wastewater at various locations throughout the collection system. Ferrous chloride is corrosive. Safety glasses and rubber gloves are worn when handling the material.
- Magnesium hydroxide is a milky liquid, general purpose, food additive. Safety glasses and rubber gloves are worn when handling the material.

Applicable Regulations

Federal and State. In California, Title 22 and Title 23 of the California Code of Regulations (CCR) address hazardous materials and wastes. Title 22 defines, categorizes, and lists hazardous materials and wastes. Title 23 addresses public health and safety issues related to hazardous materials and wastes, and specifies disposal options. The California Department of Toxic Substances Control (DTSC) is a department of the California Environmental Protection Agency and is responsible for protecting Californians from exposure to hazardous waste.

The USDOT regulates hazardous materials transportation. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials emergencies are the California Highway Patrol and local fire departments.

Worker safety is regulated through the federal Occupational Health and Safety Administration (OSHA), as well as the state version, Cal-OSHA. In Code of Federal Regulations (CFR) Title 29 (CFR 29), federal OSHA establishes 40 hours of training for operators who are exposed to hazardous materials. The training includes personal safety, storage and handling procedures for hazardous materials, and emergency response procedures.

The Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code, Section 25500 et. seq.) govern hazardous materials handling, reporting requirements, and local agency surveillance programs. The Law requires businesses that store hazardous materials onsite to prepare and submit an inventory to local health and fire departments.

Local. The proposed Plan components would take place within the Sanitation District service area, which includes 23 cities and parts of unincorporated Orange County. The proposed Plan would be subject to the local plans and policies of the various cities and the county. The General Plan for each jurisdiction contains goals, policies, and implementation measures that are designed to protect public health and safety from a variety of hazards.

3.6.2 Impacts

Thresholds of Significance

Significance criteria for evaluating potential impacts of the proposed Plan to hazards and hazardous materials were developed from the CEQA Checklist. The proposed Plan would have a significant impact related to hazards and hazardous materials if the impact would do any the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- 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
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

Other significance criteria identified in the CEQA Checklist for the proposed Plan were evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have a less-than-significant impact or no impact associated with these other significance criteria for the following reasons: (1) the proposed Plan would have no impacts associated with hazards to the public or environment that could result from being located on a site that is on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5; (2) the proposed Plan would have no safety hazard impacts on people associated with activities within an airport land use plan; (3) The proposed Plan would have no safety hazard impacts on people associated with activities within the vicinity of a private airstrip; and (4) the proposed Plan is not anticipated to have an adverse impact related to the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires.

Evaluation

Operation of the collection system improvements includes transportation and use of hazardous materials for odor and corrosion control. Specifically, these hazardous materials

include hydrogen peroxide, magnesium hydroxide, ferrous chloride, and sodium hydroxide. See Appendix E for the Material Safety Data Sheet (MSDS) for these chemical solutions. The use and storage of hazardous materials is regulated by local fire departments, Certified Uniform Program Agencies (CUPAs), and OSHA. Proposed projects would follow procedures to ensure proper handling and storage of hazardous materials to reduce the potential for spills. Procedures would include, filing a Hazardous Materials Inventory and Business Emergency Plan with the Orange County Fire Authority for storage, equipping chemical delivery trucks with equipment to adequately contain and clean up any spill, and include safety equipment and procedures for operation and maintenance workers. In the event of a spill, containment and cleanup would occur in conformance with the spill response and waste disposal procedures identified in the MSDS and in the Business Emergency Plan. Disposal of hazardous waste generated as part of construction or operation activities would occur at a properly permitted facility in accordance with federal and state laws.

New excavation for proposed sewer improvement projects could encounter areas of contamination, including contamination associated with leaking underground storage tanks. During project design, a database screening would be completed for listing of all known contamination sites, including leaking underground storage tanks. Additionally, soils sampling would be completed for the presence of total recoverable petroleum hydrocarbons (TRPH), volatile organics, and metals. In the event of suspected contamination from adjacent land uses, soil sampling would be completed to verify hazardous substances. Under the Sanitation District's standard construction specifications, the Sanitation District and its contractors would comply with all applicable regulatory requirements for the assessment, testing, remediation, removal, and disposal of hazardous wastes/materials. New excavation for proposed sewer improvement projects could encounter abandoned or operating oil wells. Because the alignments would be within improved road rights-of-way or parks, no oil wells would be expected within the construction area.

Potentially significant hazards and hazardous materials impacts associated with implementation of the proposed Plan would be mitigated to a level less than significant. Mitigation Measures 3.6-1, 3.6-2, 3.6-3, 3.6-4, 3.6-5, and 3.6-6 have been identified to reduce potential impacts related to existing contamination, transportation, storage, accidental spill, and disposal of hazardous waste to a level that is less than significant.

Impact 3.6-1: Transportation of hazardous materials associated with Project activities could result in a hazard or hazardous materials-related impact.

Impact 3.6-2: Storage of hazardous materials associated with Project activities could result in a hazard or hazardous materials-related impact.

Impact 3.6-3: Accidental spill of hazardous materials associated with Project activities could result in a hazard or hazardous materials-related impact.

Impact 3.6-4: Improper disposal of hazardous materials could result in a hazard or hazardous materials-related impact.

Impact 3.6-5: Improperly abandoned oil wells may exist within the excavation alignments.

Impact 3.6-6: Construction activities could encounter areas of contamination, including contamination associated with leaking underground storage tanks.

3.6.3 Mitigation Measures

The following mitigation measures are intended to offset project impacts on hazards and hazardous materials.

Mitigation Measure 3.6-1: Transportation of hazardous materials will be in accordance with all federal, state, and local regulations.

Mitigation Measure 3.6-2: Prior to storage of hazardous materials, a Hazardous Materials Inventory and Business Emergency Plan will be filed with the Orange County Fire Authority.

Mitigation Measure 3.6-3: In the event of an accidental spill, containment and cleanup will occur in conformance with the spill response and waste disposal procedures identified in the MSDS and in the Business Emergency Plan.

Mitigation Measure 3.6-4: Disposal of hazardous waste generated as part of construction or operation activities will occur at a properly permitted facility in accordance with federal and state laws.

Mitigation Measure 3.6-5a: Prior to construction, the Sanitation District will identify existing and abandoned oil production wells within the project area using 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 abandoned to current DOGGR specifications, including adequate gas venting systems.

Mitigation Measure 3.6-5b: 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.

Mitigation Measure 3.6-6: During project design, a database screening would be completed for listing of all known contamination sites, including contamination associated with leaking underground storage tanks. Additionally, soils sampling would be completed for the presence of TRPH, volatile organics, and metals. In the event of suspected contamination from adjacent land uses, soil sampling would be completed to verify hazardous substances. Under the Sanitation District's standard construction specifications, the Sanitation District and its contractors would comply with all applicable regulatory requirements for the assessment, testing, remediation, removal, and disposal of hazardous wastes/materials.

3.6.4 Significance After Mitigation

Implementation of the mitigation measures provided will assure that potential impacts associated with hazards and hazardous materials will be less than significant.

3.7 Hydrology and Water Quality

3.7.1 Setting

The Sanitation District service area falls within eight Orange County sub-watersheds. Major surface flows in the area include the Santa Ana River, Coyote Creek, Carbon Creek, and San Diego Creek. The Santa Ana River watershed is the largest in Orange County, collecting surface runoff from 153 square miles within the county. The Santa Ana River originates in the San Bernardino Mountains and passes through three counties and Central Orange County prior to joining the Pacific Ocean in Huntington Beach. Santiago Creek is the largest tributary to the Santa Ana River. Smaller tributary creeks and channels in the western part of the service area discharge to Los Angeles County via a series of flood control channels that empty into Coyote Creek and the San Gabriel River. Many of the natural watercourses in Orange County have been altered for purposes of flood control or water supply. Before urbanization, the area was drained by ephemeral streams and agricultural drainage ditches that were dry most of the year and carried measurable flow primarily during short duration flash floods and longer duration general winter storms.

Orange County is vulnerable to chronic flooding during the peak rainfall periods. Urban development has increased impervious surfaces and created increased peak flood flows thus increasing the risk of flooding. Existing flood control facilities operated by the USACE and the Orange County Flood Control District provide flood protection. Major channelized flood control features within the Sanitation District service area are located along the Santa Ana River, San Diego Creek, Brea Creek, Fullerton Creek, Carbon Creek, Peters Canyon Channel, Bolsa Chica Channel, Los Alamitos Channel, East Garden Grove-Wintersburg Channel, Talbert Channel, Huntington Beach Channel, and Greenville-Banning Channel. The Santa Ana River watershed has five flood control dams: Prado, Seven Oaks, San Antonio, Carbon Canyon and Villa Park. Brea and Fullerton Dams, located in the northern part of the Sanitation District service area, provide flood protection in surrounding areas of Orange County. (USACE Water Control Manuals, www.spl.usace.army.mil/resreg/htdocs).

Extensive groundwater basins underlie much of the Sanitation District service area. The large groundwater basin that underlies the northern half of the County is managed by OCWD and is recharged with water from the Santa Ana River and, to a lesser extent, with imported and reclaimed waters.

Applicable Regulations

USEPA is the federal agency responsible for water quality management and administration of the federal Clean Water Act (CWA). USEPA has delegated most of the administration of CWA in California to the State Board. The State Board was established through the California Porter-Cologne Water Quality Act of 1969 and is the primary state agency responsible for water quality management issues in California. Much of the responsibilities for implementation of the policies of the State Board are delegated regionally to the States nine Regional Boards. The Sanitation District service area is located in the Santa Ana Regional Board.

Section 402 of the CWA established the NPDES program to regulate discharges into “navigable waters” of the United States. USEPA authorized the State Board to issue NPDES

permits in the State of California in 1974. The NPDES permit establishes discharge pollutant limits and operational conditions for industrial facilities and wastewater treatment plants. NPDES permits for nonpoint sources are also required for municipalities and unincorporated communities of populations greater than 100,000 to control urban stormwater runoff. These municipal permits require the preparation of Storm Water Management Plans (SWMPs) that reflect the environmental concerns of the local community.

Orange County stormwater management requirements are presented in its Drainage Area Management Plan (DAMP). Additionally, individual stormwater NPDES permits are required for specific industrial activities and for construction sites greater than 1 acre. Statewide general NPDES permits for stormwater have been developed to expedite discharge applications. The permits include the statewide industrial permit and the statewide construction permit. In 1999, the State General Construction Activity Stormwater Permit (SWRCB Order No. 99-08-DWQ, General Permit) was reissued. Construction activities disturbing 1 acre or more of land are required to comply with this permit, including development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). To ensure that all its construction sites satisfy the intent of the NPDES, the Sanitation District requires that a Stormwater Pollution Control Plan (SWPCP) be developed for any of its construction sites not covered by the State General Construction Activity Stormwater Permit.

NPDES Permit No. CAG998001 General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality gives the Santa Ana RWQCB authority to regulate insignificant discharges to surface water bodies, including, but not limited to, discharge of dewatered groundwater.

Section 401 of the CWA gives the State Board jurisdiction for regulating discharges of fill and dredged material to Waters of the United States, including wetlands, through the Water Quality Certification Program. The applicable Regional Board administers the Water Quality Certification Program and the NPDES program. For the proposed Plan, the Santa Ana Regional Board is the administering authority.

Section 404 of the CWA gives the USACE jurisdiction for regulating discharges of fill and dredged material to Waters of the United States, including wetlands, through the 404 Permit Process.

Section 1600 of the California Fish and Game Code gives the CDFG jurisdiction for regulating activities occurring within the bed and banks of a river, stream, or lake, through the approval process of the Lake or Streambed Alteration Agreement.

3.7.2 Impacts

Thresholds of Significance

Impacts related to hydrology and water quality would be considered significant if the proposed Project would:

- Violate any water quality standards or waste discharge requirements
- Degrade water quality substantially otherwise

Other significance criteria identified in the CEQA Checklist for the proposed Plan were evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have a less-than-significant impact or no impact associated with these other significance criteria for the following reasons: (1) the proposed Plan would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that a net deficit in aquifer volume or a lowering of the local groundwater table level would occur; (2) the proposed Plan would not 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 that would result in substantial erosion or siltation on- or offsite; (3) the proposed Plan would not 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 that would result in flooding on- or offsite; (4) the proposed Plan would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; (5) the proposed Plan would not 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; (6) the proposed Plan would not place within a 100-year flood hazard area structures that would impede or redirect flood flows; (7) the proposed Plan would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of a failure of a levee or dam; and, (8) the proposed Plan likely would not have impacts related to inundation by a seiche, tsunami, or mudflow.

Evaluation

The proposed sewer improvement projects are located throughout the Sanitation District service area. Projects generally are located in rights-of-way within existing easements for streets, and several projects are located in the vicinity of and, in some instances, traverse across surface waters, including the Santa Ana River, Brea Creek, Fullerton Creek, and Coyote Creek. Construction activities that involve soil disturbance, such as excavation, stockpiling, and grading, could result in increased stormwater erosion and sedimentation to surface waters. Additionally, use of heavy construction equipment could result in the addition of petroleum hydrocarbons, oils, and grease to stormwater flowing across areas of construction. Mitigation Measure 3.7-1 has been identified to reduce potential construction-related impacts to surface waters caused by stormwater to a level that is less than significant.

While opportunities to avoid Waters of the United States by using tunneling or jack-and-bore methods would be considered, construction of some projects could require excavation and fill activities within Waters of the United States, including jurisdictional wetlands. For excavation and fill activities to occur within a designated Water of the United States or jurisdictional wetland, USACE would require a Section 404 Permit, and the Regional Board would require a 401 Water Quality Certification. Additionally, alterations to the bed and banks of surface waters would necessitate a Streambed Alteration Agreement from CDFG. Also, for activities within a facility of the Orange County Flood Control District (OCFCD), a Flood Encroachment Permit would be required. Construction activities occurring within Waters of the United States, including jurisdictional wetlands, would cause temporary

impacts to these areas that could affect water quality. Mitigation Measure 3.7-2 has been identified to reduce potential impacts to surface water to a level that is less than significant.

If possible, activities that require construction within surface waters, including flood control channels, would be scheduled to occur during the dry season. If surface water were present during construction within such areas, flows would be diverted temporarily within the project site and around areas where activities are occurring. In general, temporary diversions would include temporary placement of a sandbag-bermed cofferdam upstream of activities and a pipe flume to bypass the activities. Surface water flows would be released downstream of activities within the project site. These temporary structures would not substantially impede or redirect flows and would not result in a significant adverse impact to water quality, or result in violations of water quality standards or waste discharge requirements. Additionally, if shallow groundwater were encountered during excavation activities, the excavation would be dewatered with disposal into the sanitary sewer, which would not result in an impact to water quality. In the event the dewatered flow cannot be discharged in to the sanitary sewer, the Sanitation District will file for coverage under the General De Mimimus permit to direct the flow into the municipal separate storm sewer system. Mitigation Measure 3.7-3 has been identified to reduce potential impacts to surface water associated with dewatering discharge to a level that is less than significant.

The upper alignment of Project 02-65 occurs adjacent to Fullerton Dam, which is owned and operated by the USACE for flood control. Proposed activities include replacement of the existing trunk sewer line, and would not result in a new impact that could affect the flood control function of Fullerton Dam. Prior to initiating construction of activities that occur within the Fullerton Dam property that USACE owns, coordination with USACE staff and a Right-of-Entry Permit would be acquired, if needed.

Projects generally are located in rights-of-way within existing easements for streets and are for purposes of sewer system collection and conveyance. Construction activities would be limited to the installation of sewer improvements and would have no impact to the underlying groundwater quality. Additionally, operation of the proposed sewer improvements would have no impact to the quality of surface water or groundwater.

Impact 3.7-1: Construction activities could result in erosion and siltation related stormwater impacts to surface water quality.

Impact 3.7-2: Project activities within jurisdictional areas, including wetlands, would result in impacts to biological resources. Construction activities could also result in impacts to jurisdictional areas associated with equipment refueling and vehicle use.

Impact 3.7-3: Construction dewatering discharges could result in impacts to surface water quality.

3.7.3 Mitigation Measures

The mitigation measures outlined in this section have been identified to mitigate potentially significant impacts to the quality of surface water, which could occur during construction. Following implementation of these mitigation measures, potentially significant adverse impacts will be reduced to levels that are less than significant.

Mitigation Measure 3.7-1: Prior to the initiation of ground-disturbing activities for sewer improvements with surface disturbances of 1 acre or more, the Sanitation District (or its designee) will obtain approval from the State Board under the NPDES General Permit for Discharges of Storm Water Associated with Construction Activity (General Permit). This includes submitting a Notice of Intent (NOI) to the State Board and developing and implementing an SWPPP. For sewer improvements with less than 1 acre of surface disturbances, the Sanitation District (or its designee) will develop and implement a SWPCP prior to initiating ground-disturbing activities. The SWPPP or SWPCP will identify potential sources of sediment and other pollutants that could affect the quality of the stormwater discharge, and will specify best management practices (BMPs) to prevent or minimize the introduction of sediment and pollutants into surface waters from a construction site. BMP methods of erosion and sediment control could include straw bales, silt fences, and other control techniques. Monitoring and maintenance requirements will be specified in the SWPPP or SWPCP.

Mitigation Measure 3.7-2: Prior to initiating activities within Waters of the United States, including jurisdictional wetlands, the Sanitation District (or its designee) will obtain approved 401 Water Quality Certification from the Regional Board, 1600 Streambed Alteration Agreement from CDFG, and 404 Permit from USACE. Vehicle maintenance and fueling will be restricted from areas within 50 feet of the bank of a jurisdictional area. Following construction within a jurisdictional area, the affected area will be returned to preconstruction grade.

Mitigation Measure 3.7-3: Prior to the initiation of construction dewatering activities the Sanitation District (or its designee) will obtain authorization from the Santa Ana RWQCB and will comply with the NPDES Permit No. CAG998001, General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality, for insignificant discharges to surface water bodies, including but not limited to discharge of dewatered groundwater.

3.7.4 Significance After Mitigation

With implementation of the above mitigation measures, potentially significant adverse impacts to surface water quality resulting from construction activities will be reduced to levels that are less than significant.

3.8 Land Use and Planning

3.8.1 Setting

The Sanitation District service area contains a 410-mile-long regional wastewater conveyance system and 17 pumping facilities that convey sewage from local sewer lines in 21 cities and 3 special districts to the two regional Sanitation District treatment plants. Nineteen collection system improvement projects are proposed to take place in 18 of these cities, with 1 taking place in an unincorporated area of Orange County.

The Sanitation District service area is primarily urbanized. Only a few unincorporated areas on the urban fringe and natural coastal and hilly areas remain relatively undeveloped. Land use types within the service area generally consist of Residential, Transportation/Utility,

Commercial, Industrial, Institutional, Recreational, and Vacant (Southern California Association of Governments [SCAG], 2000). The existing sewers and proposed collection system improvements generally follow city street easements and occur within existing rights-of-way. These city street easements, and rights-of-way, pass sensitive land uses common to metropolitan areas including schools and hospitals. Appendix A includes maps that show the detailed locations of proposed improvement projects and surrounding land use types, including sensitive receptors. This section summarizes the land uses of the service area to serve as a baseline for assessing the environmental impacts of providing proposed improvements to the collection system.

Existing Land Uses

Residential. Residential land use occurs throughout the Sanitation District service area, which includes approximately 2.5 million people (Center for Demographic Research, 2004). The highest density residential areas occur in the central and lower reaches of the service area. Land located in the upper and eastern parts of the service area are less densely populated because of natural limitations of hilly areas that constrain dense residential development. Additionally, several coastal estuaries, including Bolsa Chica and Upper Newport Bay, are reserve areas and are prohibited from development.

Transportation. Transportation land use is composed of freeways, toll roads, roads, streets, parking lots, and truck and bus terminals. Several major freeways and toll roads traverse the Sanitation District service area. These include, Interstate (I)-5, I-405, State Route (SR)-22, SR-91, SR-57, SR-55, SR-90, SR-39, SR-73, SR-133, SR-241, and SR-261.

Utility. Utility land uses comprise electrical power and gas production and storage facilities; communication and transmission facilities; and improved waterways, water storage and wastewater treatment facilities, and water and wastewater conveyance pipelines. The Sanitation District service area includes a broad network of power transmission line and water and wastewater infrastructure corridors.

Commercial and Industrial. Commercial land uses comprise office buildings, shopping and retail centers, strip mall developments, and storage areas. Industrial land uses comprise chemical and cement processing, manufacturing operations, maintenance yards, warehousing, and solid waste and waste disposal facilities.

Institutional. Institutional land uses are composed of colleges and universities, trade schools and professional training facilities, special care and convalescent hospitals, hospitals and medical facilities, public and private schools, nursery and day care centers, churches and religious facilities, government offices and municipal services, and correctional facilities.

Recreational. Recreational land uses include developed and undeveloped regional and local parks and recreational areas, and golf courses. Undeveloped land identified as Vacant land use can offer recreational opportunities not captured as a Recreational land use.

Vacant. Vacant land uses consist of open and/or undeveloped land. Several major Vacant areas are in the Sanitation District service area. Specifically, these areas include Chino Hills, Coyote Hills, Bolsa Chica, and Upper Newport Bay.

Regulatory Environment

The regulatory setting describes relevant federal, regional, and local agencies that have jurisdiction over land use.

Federal Regulations

Coastal Zone Management Act. The Coastal Zone Management Act of 1972 (CZMA) specifies a broad federal program of land use management based on control by each coastal state. These state coastal management programs focus on land uses within the coastal zone and sensitive resources that co-exist with the different land uses. Typically states use permit programs established through approved coastal management programs to restrict certain uses within the coastal zone. The CZMA also requires all applicants for federal permits and federal agency project sponsors to obtain proof of certification from the coastal state that the proposed action is consistent with the state-approved coastal program (Wetlands, Streams, and Other Waters, 2004). The California Coastal Commission administers the federal CZMA in California.

Regional Programs

Regional Housing Needs Assessments. The Regional Housing Needs Assessments (RHNA) is a state-mandated estimate of housing needs that cities are required to use in housing elements. The State of California Department of Housing and Community Development (HCD) determines the statewide housing need. In cooperation with HCD, local governments and councils of government are charged with making a determination of existing and projected housing needs of their city or region, as a share of the statewide housing need.

The Southern California Association of Governments (SCAG) is responsible for preparation of the RHNA, pursuant to California Government Code Section 65584(a). RHNA is the major planning effort of SCAG regarding the issue of housing. RHNA results in an assignment of the number of new housing units to be produced in each jurisdiction during the planning period. The SCAG RHNA provides a tool for coordinating local housing development strategies.

Local Programs

General Plans. The primary tools for the management of land use within the Sanitation District service area are the General Plans of the various cities where the collection system improvements are proposed. The Orange County General Plan is applicable to activities within unincorporated areas of Orange County. A General Plan identifies city or county policies regarding long-term development for the city or county. The General Plan is a legal document required of each local agency by the State of California Government Code Section 65301. The representing City Council or Board of Supervisors adopts individual General Plans. In California, the General Plan has seven mandatory elements (Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety) and might include any number of optional elements (such as Air Quality, Economic Development, Hazardous Waste, and Parks and Recreation).

Zoning. The county or city zoning code is the set of detailed requirements that implement the policies of the General Plan at the level of individual parcels. The zoning code presents

standards of different uses and identifies which uses are allowed in the various zoning districts of the jurisdiction. Since 1971, state law has required the city or county zoning code to be consistent with the General Plan of the jurisdiction.

The proposed collection system improvements would occur within developed city streets throughout the Sanitation District service area. Therefore, the proposed collection system improvements would be subject to the local plans and policies of the cities and unincorporated areas of Orange County where the improvements would be constructed. The General Plans for each jurisdiction contain goals, policies and implementation measures, which, together with land use designations and zoning codes, are designed to guide land use and resource planning and development.

3.8.2 Impacts

Thresholds of Significance

Impacts related to land use and planning would be considered significant if the proposed Plan would:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Other significance criteria identified in the CEQA Checklist for the proposed Plan were evaluated in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have a less-than-significant impact or no impact associated with these other significance criteria for the following reasons: (1) the proposed Plan would not physically divide a community; and (2) the proposed Plan would not conflict with any applicable habitat conservation plan or natural community conservation plan.

Evaluation

Construction of sewer improvements generally would involve lining, manhole repair, open-trench excavation for new sewer installation, shoring, dewatering, potential pipe removal, manhole removal and associated demolition, and potential jack-and-bore methods for installation at sensitive crossings (for example, busy intersections, railroad spurs, or flood control channels). The use of heavy equipment for construction of sewer improvements potentially could result in temporary community disruptions, including the generation of noise, dust, construction traffic, and the disruption of streets and access to adjacent land uses. Therefore, construction of proposed sewer improvements could conflict with an adopted land use plan, policy, or regulation that is designed to avoid or mitigate adverse environmental impacts. However, construction-related impacts could be mitigated to a level of less than significant. Potential air quality, noise, and traffic impacts are discussed in each respective section. Additional consideration of potential construction-related impacts to sensitive receptors, such as hospitals, schools, and places of worship, are evaluated as part of this land use and planning section. A description of the land uses and sensitive receptors for each sewer improvement project are described below and are shown in Appendix A.

Operations and maintenance activities would be minimal and generally would include routine maintenance and monitoring activities. These activities would not conflict with applicable land use plans, policies, or regulations. Similar to the existing collection system, under the proposed Plan, the continued operation of the collection system would conform to applicable zoning and land use plans and policies. Operation of sewer improvements associated with the proposed Plan would have no impact to land use and planning.

Land Uses and Sensitive Receptors for Each Sewer Improvement Project

Appendix A includes maps that show the detailed locations of proposed improvement projects and the types of surrounding land use, including sensitive receptors. In addition to the sensitive receptors shown in Appendix A, a search on the internet for places of worship located adjacent to proposed improvements was completed. Following are evaluations of land uses and sensitive receptors for each sewer improvement project. Table 3-3 includes a summary of sensitive receptors identified for each sewer improvement project.

Raitt and Bristol Street Sewer Extension (01-101). This project would replace the existing sewer in Myrtle Street, between Raitt and Bristol Streets in Santa Ana. Land uses along the route include recreational, residential, and institutional. Identified sensitive receptors include two places of worship.

Santa Ana Trunk Sewer Rehabilitation (01-17). This project would rehabilitate the existing Santa Ana Trunk sewer from Sanitation District Reclamation Plant No. 1 in Fountain Valley to Bristol Street in Santa Ana. Land uses along the route include agricultural, commercial, industrial, residential, transportation, and utilities. Identified sensitive receptors include a place of worship and two schools.

Taft Branch Improvements (02-49). This project would increase the size of a section of the Taft Branch sewer to provide additional capacity for planned developments such as the East Orange Development. The project would occur along East Taft Avenue between Shaffer Street and Glassell Street in the City of Orange. Land uses along the route include commercial, institutional, and residential. Identified sensitive receptors include a place of worship and a school.

Euclid Relief Improvements (02-52). This project would increase the capacity of the Euclid Trunk system between Plant No. 1 and Edinger Avenue. The project could include occur in Euclid Street in the cities of Fountain Valley and Santa Ana. Land uses along the route include agricultural, commercial, industrial, institutional, transportation, utilities, and vacant. Identified sensitive receptors include a hospital, park, two places of worship, and a school.

Newhope-Placentia and Cypress Trunk Replacement (02-65). This project would increase the capacity of the Newhope-Placentia and Cypress Trunk systems and the Rolling Hills Subtrunk. Improvements would be constructed in the Cities of Anaheim and Fullerton, along State College Boulevard between East Orangewood Avenue and Yorba Linda Boulevard; along Yorba Linda Boulevard between Associated Road and State College Boulevard; and North of Bastanchury Road near Associated Road. Land uses along the route include commercial, industrial, institutional, recreational, residential, and transportation/utilities. Identified sensitive receptors include a library, four places of worship, a school, and three universities.

Fullerton-Brea Interceptor Sewer Relief (02-71). This project would occur near Rolling Hills Drive in Fullerton or reconfigure local sewers to divert flows from the Old Fullerton-Brea Trunk to the adjacent Fullerton-Brea Interceptor. Land uses along the route include recreational and residential. Identified sensitive receptors include a park and golf course.

Westside Relief Interceptor (03-55). This project would occur in Denni Street between Moorgate Drive and Lincoln Avenue, and in Katella Avenue between Bloomfield Street and Los Alamitos Boulevard. Land uses along the route include commercial and institutional. Identified sensitive receptors include a cemetery, hospital, and park.

Magnolia Trunk Rehabilitation (03-58). This project would rehabilitate the existing Magnolia Trunk sewer along Bushard and Magnolia Streets, between Ellis Avenue and Orangethorpe Avenue, in the cities of Fountain Valley, Westminster, Garden Grove, Stanton, and Anaheim. Land uses along the route include commercial, industrial, institutional, recreational, residential, transportation, and utilities. Identified sensitive receptors include a cemetery, 5 parks, 13 places of worship, and 9 schools.

Miller-Holder Trunk Sewer Relief (03-59). This project would increase the capacity of the Miller-Holder Trunk sewer in the City of Buena Park. Improvements would occur in Artesia Boulevard between Dale Street and Knott Avenue, and in Knott Avenue between Artesia Boulevard and 8th Street. Land uses along the route include commercial, industrial, institutional, residential, transportation, utilities, and vacant. Identified sensitive receptors include a place of worship.

Beach Trunk-Knott Interceptor Sewer Relief (03-60). This project would occur in Kingman Avenue between Tulare Street and Artesia Boulevard, in Artesia Boulevard between Kingman Avenue and Knott Avenue, and in Knott Avenue between Artesia Boulevard and Orangethorpe Avenue. Land uses along the route include commercial, industrial, institutional, residential, transportation, and utilities. Identified sensitive receptors include a park, place of worship, two schools, and a university.

Balboa Trunk Sewer Rehabilitation (05-47). This project would occur along Newport and Balboa Boulevards between the "A" Street pump station and the Lido pump station in the City of Newport Beach. Land uses along the route include commercial, institutional, recreational, residential, transportation, and utilities. Identified sensitive receptors include City hall, a library, park, three places of worship, and a school.

Newport Beach Force Main Upgrades (05-█). The Sanitation District is in the process of assessing the condition of pipe in the Newport Beach force main system. The force main system extends from Bay Bridge and A Street pump stations to Bitter Point pump station in Newport Beach, along Pacific Coast Highway and Newport and Balboa Boulevards.

Bayside Drive Improvement (05-61). This project would occur along Bayside Drive between Jamboree Road and El Paseo Drive in the City of Newport Beach. Land uses along the route include commercial, industrial, residential, transportation, and utilities. Identified sensitive receptors include a hospital, park, three places of worship, a post office, and a school.

TABLE 3-3
Identification of Sensitive Receptors

CIP No. ^a	Title	City	Street	Major Intersections	Surrounding Land Use Types	Sensitive Receptors and Locations
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	Myrtle Street	Raitt Street, Bristol Street	REC, RES, INS	Place of Worship (429 S. Bristol St., 1600 W. Myrtle St.), Residences along Myrtle St. between Raitt and Bristol
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	Alton Avenue	Bristol Street, Fairview Road	AG, COM, IND, RES, TRN	Place of Worship (3232 W. MacArthur Blvd.), School (3321 S. Fairview St., 2454 W. Alton Ave.), Residences along Alton Ave. between Fairview and Bristol
02-49	Taft Branch Improvements	Orange	Taft Avenue	Glassell Street, Shaffer Street	COM, INS, RES	Place of Worship (534 E. Taft Ave., 300 E. Taft Ave.), School (300 E Taft St.), Residences along Taft Ave. between Glassell and Shaffer
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	Euclid Street	Edinger Avenue, Warner Avenue, Slater Avenue, Talbert Avenue	AG, COM, IND, INS, TRN, VAC	Hospital (17100 Euclid St.), Park (Mile Square Park), Place of Worship (17575 Euclid St., 10900 Warner Ave.), School (17575 Euclid St.), Residences along Euclid St. between Edinger and Talbert
02-65	Newhope-Placentia and Cypress Trunk Replacement	Anaheim, Fullerton	State College Boulevard, Yorba Linda Boulevard	Katella Avenue, Ball Road, Lincoln Avenue, La Palma Avenue, Orangethorpe Avenue, Chapman Avenue, Associated Road, Bastanchury Road	COM, IND, INS, REC, RES, TRN	Library (800 N. State College Blvd.), Place of Worship (2311 E. Chapman Ave., 515 N. State College Blvd., 311 N. State College Blvd., 121 N. State College Blvd.), School (909 N. State College Blvd.), University (1298 N. State College Blvd., 1111 N. State College Blvd., 1717 S. State College Blvd.), Residences along State College Blvd. between Fender and Bastanchury, Residences along Yorba Linda Blvd. between State College and Associated, Residences north of Associated and Bastanchury Roads intersection.
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	Maple Avenue		REC, RES	Park (Rolling Hills Park, Coyote Hills Golf Course)
03-55	Westside Relief Interceptor	La Palma, Cypress, Los Alamitos	Denni Street, Katella Avenue	Crescent Avenue, Lincoln Avenue, Bloomfield Street, Los Alamitos Boulevard	COM, INS	Cemetery (4417 Lincoln Ave.), Hospital (3751 Katella Ave.), Park (Laurel Park), Residence along Denni St. between Moorgate and Crescent,
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim, Fullerton	Bushard Street, Magnolia Street	Edinger Avenue, Bolsa Avenue, Westminster Avenue, Garden Grove Boulevard, Chapman Avenue, Katella Avenue, Ball Road, Lincoln Avenue, La Palma Avenue, Orangethorpe Avenue	COM, IND, INS, REC, RES, TRN	Cemetery (12241 Magnolia St.), Park (Peter Marshal Park, Dad Miller Golf Course, Magnolia Park, Hare School Park, Westminster Park), Place of Worship (227 N Magnolia Ave., 720 S. Magnolia Ave., 2930 W. Ball Rd., 8972 Chapman Ave., 12211, 12301, 14381, 14550, 14614, 15750 Magnolia St., 17500, 18082, 18225 Bushard St.), School (227 N. Magnolia Ave., 2613 Orange Ave., 720, 1239 S. Magnolia Ave., 12081, 12721, 12922 Magnolia St., 16200, 17816 Bushard St.), Residences along Bushard and Magnolia St.
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	Artesia Boulevard, Knott Avenue	Dale Street, Beach Boulevard, Knott Avenue	COM, IND, INS, RES, TRN, VAC	Place of Worship (8382 Artesia Blvd.)
03-60	Beach Trunk-Knott Interceptor Sewer Relief	Buena Park	Kingman Avenue, Artesia Boulevard, Knott Avenue	Artesia Boulevard, Knott Avenue, Orangethorpe Avenue	COM, IND, INS, RES, TRN	Park (George Bellis Park), Place of Worship (6959 Knott Ave.), School (6885, 6931 Orangethorpe Ave.), University (7100 Knott Ave.)
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	Balboa Boulevard, Newport Boulevard	Balboa Boulevard, Newport Boulevard	COM, INS, REC, RES, TRN	City Halls (3300 Newport Blvd.), Library (100 E. Balboa Blvd.), Park (Peninsula Park), Place of Worship (425 30 th St., 1400, 1441 W. Balboa Blvd.), School (1327 W. Balboa Blvd.)
05-█	Newport Beach Force Main Upgrades	Newport Beach	Pacific Coast Hwy, Balboa Boulevard, Newport Boulevard	Pacific Coast Hwy, Balboa Boulevard, Newport Boulevard	COM, IND, RES, TRN	Hospital (1 Hoag Dr.), Park (Castaways Park), Place of Worship (10206 Cielo Dr., 2901 W. Coast Hwy. #150, 1600 W. Coast Hwy.), Post Office (191 Riverside Ave.), School (2000 Cliff Dr.)
05-61	Bayside Drive Improvement	Newport Beach	Bayside Drive	Jamboree Road, El Paseo Drive	COM, IND, REC, RES, VAC	None
05-63	Dover Drive Trunk Sewer Relief	Costa Mesa, Newport Beach	Dover Drive	Dover Drive, Pacific Coast Highway, Westcliff Drive	COM, INS, REC, RES	Library (2005 Dover Dr.), Parks (Castaways Park, Bob Henry Park, Mariners Park), Places of Worship (798, 801 Dover Dr.)
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	Pomona Avenue, Newport Boulevard	Newport Boulevard, Pacific Coast Hwy	COM, INS, RES, TRN	Hospital (1 Hoag Dr.)
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	Fairview Road	Newport Boulevard, Baker Street	COM, INS, REC, RES, TRN	Place of Worship (2850, 2525 Fairview Rd.), Post Office (2230 Fairview Rd.), School (2650 Fairview Rd.), University (2701 Fairview Rd.)
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	Browning Avenue	Irvine Boulevard	INS, REC, RES, TRN	Place of Worship (2111 Bryan Ave.), School (22712, 13601 Browning Ave.)
07-62	Von Karman Trunk Sewer Relief	Irvine, Newport Beach	Von Karman Avenue	MacArthur Boulevard	COM, RES, TRN	None
11-25	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach, Seal Beach	Bolsa Chica Street	Bolsa Avenue, McFadden Avenue	COM, IND, RES, TRN	Places of Worship (5102 Argosy Ave.)

^aSanitation District Budget Fiscal Years 2006-07 and 2007-08

^bSanitation District Strategic Plan Update, April 2006 (Job J-101)

blank page

Dover Drive Trunk Sewer Relief (05-63). This project would occur along Dover Drive from Irvine Avenue to Pacific Coast Highway and along Westcliff Drive and 17th Street between Dover Drive and Orange Avenue. Land uses along the route include commercial, institutional, recreational, and residential. Identified sensitive receptors include a library, three parks, and two places of worship.

District 6 Trunk Sewer Relief (06-17). This project would occur along Pomona Avenue in Costa Mesa and along Newport Boulevard to Pacific Coast Highway in Newport Beach. Land uses along the route include commercial, institutional, residential, transportation, and utilities. Identified sensitive receptors include a hospital, two places of worship, a post office, a school, and a university.

Fairview Road Trunk Sewer Relief (06-18). This project would occur along Fairview Avenue between Newport Boulevard and Baker Street in the City of Costa Mesa. Land uses along the route include commercial, institutional, recreational, residential, transportation, and utilities. Identified sensitive receptors include two places of worship, a post office, a school, and a university.

Browning Subtrunk Sewer Relief (07-60). This project would occur along Browning Avenue between Rainbow Drive and Mitchell Avenue. Land uses along the route include institutional, recreational, residential, transportation, and utilities. Identified sensitive receptors include a place of worship and a school.

Von Karman Trunk Sewer Relief (07-62). This project would occur along Campus Drive west of Martin Avenue and across MacArthur Boulevard in the Cities of Irvine and Newport Beach. Land uses along the route include commercial, residential, and transportation/utilities (John Wayne Airport). No sensitive receptors were identified along this route.

Edinger-Bolsa Chica Trunk Improvements (11-25). This project would occur along Bolsa Chica Street between Bolsa Avenue and Robinwood Drive in the City of Huntington Beach. Land uses along the route include commercial, industrial, residential, transportation, and utilities. Identified sensitive receptors include a place of worship.

Mitigation Measures 3.8-1, 3.8-2, 3.8-3, and 3.8-4 have been identified to mitigate potentially significant impacts to land use during construction of proposed sewer improvements to a level that is less than significant.

Impact 3.8-1: Construction activities could impact adjacent property owners, including businesses and places of worship.

Impact 3.8-2: Construction activities could affect 24-hour emergency access at adjacent fire stations, police stations, and hospitals.

Impact 3.8-3: Construction activities could result in disruption of access to adjacent land uses, including schools.

Impact 3.8-4: Construction activities could affect 24-hour emergency access at adjacent businesses.

3.8.3 Mitigation Measures

These mitigation measures will ensure that proposed sewer improvements will not conflict with applicable land use plans, policies, or regulations. Following implementation of these mitigation measures, potentially significant adverse land use impacts will be reduced to levels that are less than significant.

Mitigation Measure 3.8-1: The Sanitation District will provide notices of construction to adjacent property owners, including businesses and places of worship, prior to initiating construction activities. Notices of construction will include a contact and telephone number of the Sanitation District staff that can be contacted regarding questions or concerns about construction activities.

Mitigation Measure 3.8-2: The Sanitation District will coordinate with officials of adjacent fire stations, police stations, and hospitals to ensure that 24-hour emergency access is available.

Mitigation Measure 3.8-3: To minimize disruption of access to driveways of adjacent land uses, including schools, during construction, the Sanitation District (or its contractor) will maintain steel trench plates to provide vehicle access across trenches.

Mitigation Measure 3.8-4: To minimize disruption to adjacent businesses during construction, the Sanitation District will provide temporary signage indicating that businesses are open.

3.8.4 Significance After Mitigation

With implementation of the above mitigation measures, potentially significant adverse impacts to land use and planning resulting from construction of sewer improvements will be reduced to levels that are less than significant.

3.9 Noise

3.9.1 Setting

Noise typically is measured in A-weighted decibels (dBA). A decibel (dB) is a unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called a “sound level”) measured in dB. A dBA is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.

Noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Typical noise descriptors include the energy-equivalent noise level (Leq) and the day-night average noise level (Ldn). Leq, the energy-equivalent noise level (or “average” noise level), is the equivalent steady-state continuous noise level that, in a stated period of time, contains the same acoustic energy as the time-varying sound level that actually occurs during the same period. Ldn, the day-night average noise level, is a weighted 24-hour noise level. With the Ldn descriptor, noise levels between 10:00 p.m. and 7:00 a.m. are adjusted upward by 10 dBA to take into account the greater annoyance of nighttime noise compared to daytime noise. The Ldn commonly is used in establishing noise exposure guidelines for specific land uses. Generally, a 3-dBA increase in ambient

noise levels represents the threshold at which most people can detect a change in the noise environment; an increase of 10 dBA is perceived as a doubling of loudness.

Two types of noise sources exist: stationary and mobile. Stationary noise sources are localized and include engine-powered facilities (i.e., pump stations). The effect of a stationary noise source diminishes with distance. Mobile noise sources (i.e., automobiles) could affect a larger area and potentially more receptors due to movement. The major contributor of noise in any urban setting includes transportation vehicles such as automobiles, buses, and airplanes. They affect more receptors due to the loud noise they generate and the prevalence of transportation facilities in Orange County. Construction activities, also common in urban area, can create loud, short-term noise.

As with air quality, some land uses are considered more sensitive to noise than others due to the types of population groups or activities involved. Sensitive population groups include children and the elderly. Noise-sensitive receptors in the Sanitation District service area include, but are not limited to, residential uses, schools, medical facilities, and nursing and convalescent homes. A description of land uses and sensitive receptors for each sewer improvement project are described in Section 3.8 and are shown in Appendix A.

The majority of the proposed collection system improvements would occur in urbanized areas of Orange County, where the primary noise source is vehicle traffic. Noise levels in a typical urban residential environment range from between 45 and 68 dBA, Ldn. In such an environment, noise levels are between 48 and 58 Leq, roughly 80 percent of the time (Cunniff, 1977).

3.9.2 Impacts

Thresholds of Significance

Impacts related to noise would be considered significant if the proposed Plan would result in any of the following conditions.

- 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
- Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels
- Increase temporary or periodic ambient noise levels in the project vicinity to levels substantially above levels existing without the project
- Exposure of persons residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport
- Exposure of people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip

In addition to the thresholds of significance listed above, applicable noise regulations and standards would be considered when evaluating potential impacts. Applicable local noise regulations are those outlined in the municipal codes and/or general plans of the cities, and, for noise-sensitive locations within the unincorporated area, those of the County of Orange.

Noise standards of the cities are generally consistent with those established by the County of Orange. Title 4, Division 6 (Noise Control) of the County of Orange Codified Ordinances establishes exterior noise level limits of 55 dBA for daytime (7 a.m. to 10 p.m.) and 50 dBA for nighttime (10 p.m. to 7 a.m.) for residential and other noise-sensitive properties. Interior noise level limits are 55 dBA and 45 dBA for daytime and nighttime, respectively. Noise levels should not be generated to exceed the following conditions.

1. Noise standard for a cumulative period of more than 30 minutes in any hour
2. Noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour
3. Noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour
4. Noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour
5. Noise standard plus 20 dBA for any period of time

In the event the ambient noise level exceeds any of the first four noise-limit categories previously stipulated, the cumulative period applicable to that category shall be increased to reflect that ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Noise sources associated with construction, repair, remodeling, or grading of any real property are exempt from the local noise standards, provided that such activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays and Saturday, or at any time on Sunday or a federal holiday. This restriction has the following exceptions:

City of Anaheim: City Municipal Code employs a noise level limit of 60 dBA, which is not to be exceeded “for extended periods.” The City exempts sound created by construction or building repair of any premises within the City from its noise level limits during the hours of 7:00 a.m. to 7:00 p.m.

City of La Palma: The City Municipal Code establishes exterior noise level limits of 65 dBA for daytime (7:00 a.m. to 7:00 p.m.), 50 dBA for evening (7:00 p.m. to 10:00 p.m.), and 45 dBA for nighttime (10:00 p.m. to 7:00 a.m.). Construction activities are allowed during the hours of 7 a.m. to 5 p.m. Monday through Friday, and 9 a.m. to 5 p.m. on Saturday. Short-term or temporary intermittent bursts of noise may exceed maximum noise levels for approved construction projects, emergency vehicles and equipment, and other short-term incidents with city approval.

City of Newport Beach: The City Noise Ordinance confines construction hours to hours between 7:00 a.m. and 6:30 p.m. on weekdays and 7:00 a.m. and 6:00 p.m. on Saturday. Construction is not allowed on Sunday or a federal holiday at any time.

City of Costa Mesa: The City employs the same noise limits as the County, but defines daytime as 7:00 a.m. to 11:00 p.m.

City of Tustin: The City exempts from its noise regulations noise sources associated with construction, repair, remodeling, or grading of any real property between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and the hours of 9:00 a.m. and 5:00 p.m. on Saturdays. Construction is not allowed on City-observed federal holidays.

City of Irvine: The City exempts from its noise regulations construction activities that occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 9:00 a.m. and 6:00 p.m. on Saturday. No construction activities are permitted outside these hours or on Sunday or federal holidays unless a temporary waiver is granted by the Chief Building Official.

Evaluation

Construction, operation, and maintenance of the Collection System Improvement Plan could result in potential noise effects at noise sensitive locations in the vicinity of the particular projects included in the Plan. Table 3-3 summarizes the sensitive receptors in the vicinity of each project within the Sanitation District service area.

Raitt and Bristol Street Sewer Extension (01-101). This project would replace the existing sewer in Myrtle Street between Raitt and Bristol Streets in Santa Ana. Project-related noise would occur mainly during the construction phase of this project. During construction of the project, which would be in 2008 and would last for 6 months, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment).

Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be intermittent and variable in magnitude. Providing construction and any subsequent maintenance activities are within the time limits established by the Santa Ana Municipal Code (between 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels.

Santa Ana Trunk Sewer Rehabilitation (01-17). This project would rehabilitate the existing Santa Ana Trunk sewer from Sanitation District Reclamation Plant No. 1 in Fountain Valley to Bristol Street in Santa Ana. The construction activities would include rehabilitation of roughly 33 concrete manholes, and lining of existing pipes along Alton Avenue between Fairview Road and Bristol Street. Noise from construction activities would be lower and less frequent than those associated with activities needed for pipe replacement; nonetheless, construction noise would occasionally be loud and audible. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Fountain Valley and Santa Ana Municipal Codes (between 7:00 a.m. and 8:00 p.m. on weekdays, 9:00 a.m. to 8:00 p.m. on Saturday, or at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels.

Taft Branch Improvements (02-49). This project would increase the size of a section of the Taft Branch sewer along East Taft Avenue between Shaffer Street and Glassell Street in the City of Orange. During construction of the project, which is anticipated to be in 2012 and last for 3 months, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities are within the time limits allowed by the City of Orange Municipal Code (between 7:00 a.m. and 8:00 p.m. on weekdays and Saturday, and at no time on

Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels.

Euclid Relief Improvements (02-52). This project would increase the capacity of the Euclid Trunk system between Sanitation District Reclamation Plant No. 1 and Edinger Avenue. The project would include installation of large-diameter pipe in Euclid Street between Edinger Avenue and Talbert Avenue, in the cities of Fountain Valley and Santa Ana. During construction of the project, which is anticipated to be in 2012 and last for 3 months, trench excavation, sewer pipe installation, paving activities, and limited truck trips would increase temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Fountain Valley and Santa Ana Municipal Codes (between 7:00 a.m. and 8:00 p.m. on weekdays, 9:00 a.m. to 8:00 p.m. on Saturday, and at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Newhope-Placentia and Cypress Trunk Replacement (02-65). This project would increase the capacity of the Newhope-Placentia and Cypress Trunk systems and the Rolling Hills Subtrunk. The project would include installation of sewer pipes in the cities of Anaheim and Fullerton, along State College Boulevard between East Orangewood Avenue and Yorba Linda Boulevard, along Yorba Linda Boulevard between Associated Road and State College Boulevard, and north of Bastanchury Road near Associated Road. During construction of the project, which is expected to last for 2 years in the 2014 to 2015 timeframe, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude.

Providing construction and any subsequent maintenance activities occur during time limits allowed by the Anaheim and Fullerton Municipal Codes, the project would be in compliance with the local noise standards. Allowable construction times are between 7:00 a.m. and 7:00 p.m. in Anaheim, and between 7:00 a.m. and 8:00 p.m. on weekdays, 9:00 a.m. to 8:00 p.m. on Saturday, or at no time on Sunday or a City-recognized holiday in Fullerton. Operation of the project is not expected to generate noise levels above ambient conditions due to local traffic.

Fullerton-Brea Interceptor Sewer Relief (02-71). This project would either upsize the existing sewer pipe near Rolling Hills Drive in Fullerton or reconfigure local sewers to divert flows from the Old Fullerton-Brea Trunk to the adjacent Fullerton-Brea Interceptor. The project would be constructed for a period of 6 months in 2009. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Fullerton Municipal Code, the project would be in compliance with the local noise standards. Allowable construction times are between 7:00 a.m. and 8:00 p.m. on weekdays,

9:00 a.m. to 8:00 p.m. on Saturday, or at no time on Sunday or a City-recognized holiday. Project operation is not expected to generate noise levels above ambient conditions.

Westside Relief Interceptor (03-55). This project would increase the capacity of the Westside Relief Interceptor in La Palma, Cypress, and Los Alamitos. Improvements could include installation of sewer pipes in Denni Street between Moorgate Drive and Lincoln Avenue, and installation of pipe in Katella Avenue between Bloomfield Street and Los Alamitos Boulevard. During construction of the project, which is expected to be during 2011, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the cities of La Palma, Cypress, and Los Alamitos, the project would be in compliance with the local noise standards. Project operation is not expected to generate noise levels above ambient conditions.

Magnolia Trunk Rehabilitation (03-58). This project would rehabilitate the existing Magnolia Trunk sewer along Bushard and Magnolia Streets between Ellis Avenue and Orangethorpe Avenue, in the cities of Fountain Valley, Westminster, Garden Grove, Stanton, and Anaheim. Improvements could include relining the interior of concrete pipe damaged from hydrogen sulfide corrosion. The construction activities would include lining of existing pipes along Bushard and Magnolia Streets. Noise from construction activities would be lower and less frequent than those associated with activities needed for pipe replacement; nonetheless, construction noise occasionally would be loud and audible. Providing construction and any subsequent maintenance activities occur during time limits allowed by the cities where the project is located, the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels.

Miller-Holder Trunk Sewer Relief (03-59). This project would increase the capacity of the Miller-Holder Trunk sewer in the City of Buena Park. Improvements would include installation of sewer pipes in Artesia Boulevard between Dale Street and Knott Avenue, and in Knott Avenue between Artesia Boulevard and 8th Street. During construction of the project, which is anticipated to be in 2010, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Buena Park Municipal Codes (between 7:00 a.m. and 8:00 p.m. on weekdays and Saturday, and at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Beach Trunk-Knott Interceptor Sewer Relief (03-60). This project would increase the capacity of the Beach Relief Trunk and the Knott Interceptor sewers in the City of Buena Park. Improvements could include installation of sewer pipe in Kingman Avenue between Tulare Street and Artesia Boulevard, in Artesia Boulevard between Kingman Avenue and Knott Avenue, and in Knott Avenue between Artesia Boulevard and Orangethorpe Avenue. During construction of the project, which is anticipated to occur in 2011, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Buena Park Municipal Codes (between 7:00 a.m. and 8:00 p.m. on weekdays and Saturday, and at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Balboa Trunk Sewer Rehabilitation (05-47). This project would rehabilitate the existing Balboa Trunk sewer along Newport and Balboa Boulevards between the "A" Street Pump Station and the Lido Pump Station in the City of Newport Beach. The scope of the project includes assessment of approximately 12,600 feet of 15-inch and 24-inch pipe. A liner likely would be installed in the pipe to restore structural integrity. Deteriorated manholes would be coated with a protective liner or replaced. Construction activities, scheduled to occur in 2010, would include rehabilitation of concrete manholes and installation of lining in existing pipes. Noise from such construction activities would be lower and less frequent than those associated with activities needed for pipe replacement; nonetheless, construction noise would occasionally be loud and audible. So long as construction and any subsequent maintenance activities occur during time limits allowed by the Newport Beach Noise Ordinance (between 7:00 a.m. and 6:30 p.m. on weekdays and 7:00 a.m. and 6:00 p.m. on Saturday, and at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels.

Newport Beach Force Main Upgrades (05-█). The Sanitation District is in the process of assessing the condition of pipe in the Newport Beach force main system. The force main system extends from Bay Bridge and A Street pump stations to Bitter Point pump station in Newport Beach, along Pacific Coast Highway and Newport and Balboa Boulevards. Improvements could include upsizing and replacement of existing pipe depending on the findings of the assessment. If this project proceeds, construction would occur in 2009. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Newport Beach Ordinance (between 7:00 a.m. and 6:30 p.m. on weekdays and 7:00 a.m. and 6:00 p.m. on Saturday, and at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Bayside Drive Improvement (05-61). This project would rehabilitate the existing Bayside Drive Trunk sewer along Bayside Drive between Jamboree Road and El Paseo Drive in the City of Newport Beach. Construction activities, scheduled to occur in 2008, would include rehabilitation of concrete manholes and installation of lining in existing pipes. Noise from such construction activities would be lower and less frequent than those associated with activities needed for pipe replacement; nonetheless, construction noise would occasionally be loud and audible. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Newport Beach Noise Ordinance (between 7:00 a.m. and 6:30 p.m. on weekdays and 7:00 a.m. and 6:00 p.m. on Saturday, and at no time on Sunday or a federal holiday), the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels.

Dover Drive Trunk Sewer Relief (05-63). This project would include replacement of portions of the existing Dover Trunk sewer from Irvine Avenue to Pacific Coast Highway, as well as modifications to local sewers tributary to Dover Trunk in Coast Mesa and Newport Beach. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Newport Beach Ordinance and Costa Mesa Municipal Code, the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

District 6 Trunk Sewer Relief (06-17). This project would install new sewer pipes for the District 6 Trunk, which extends along Pomona Avenue in Costa Mesa and along Newport Boulevard to Pacific Coast Highway in Newport Beach. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Newport Beach Ordinance and Costa Mesa Municipal Code, the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Fairview Road Trunk Sewer Relief (06-18). This project would install larger pipes for the Fairview Trunk sewer which extends along Fairview Avenue between Newport Boulevard and Baker Street in Costa Mesa. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Costa Mesa Municipal Code, the project would be in compliance

with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Browning Subtrunk Sewer Relief (07-60). This project would increase the capacity of the Browning Subtrunk sewer located along Browning Avenue between Rainbow Drive and Mitchell Avenue in the City of Tustin. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Tustin Municipal Code, the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Von Karman Trunk Sewer Relief (07-62). This project would increase the capacity of the Von Karman Trunk sewer that extends along Campus Drive west of Martin Avenue in the cities of Irvine and Newport Beach. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Providing construction and any subsequent maintenance activities occur during time limits allowed by the Newport Beach Ordinance and Irvine Municipal Code, the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

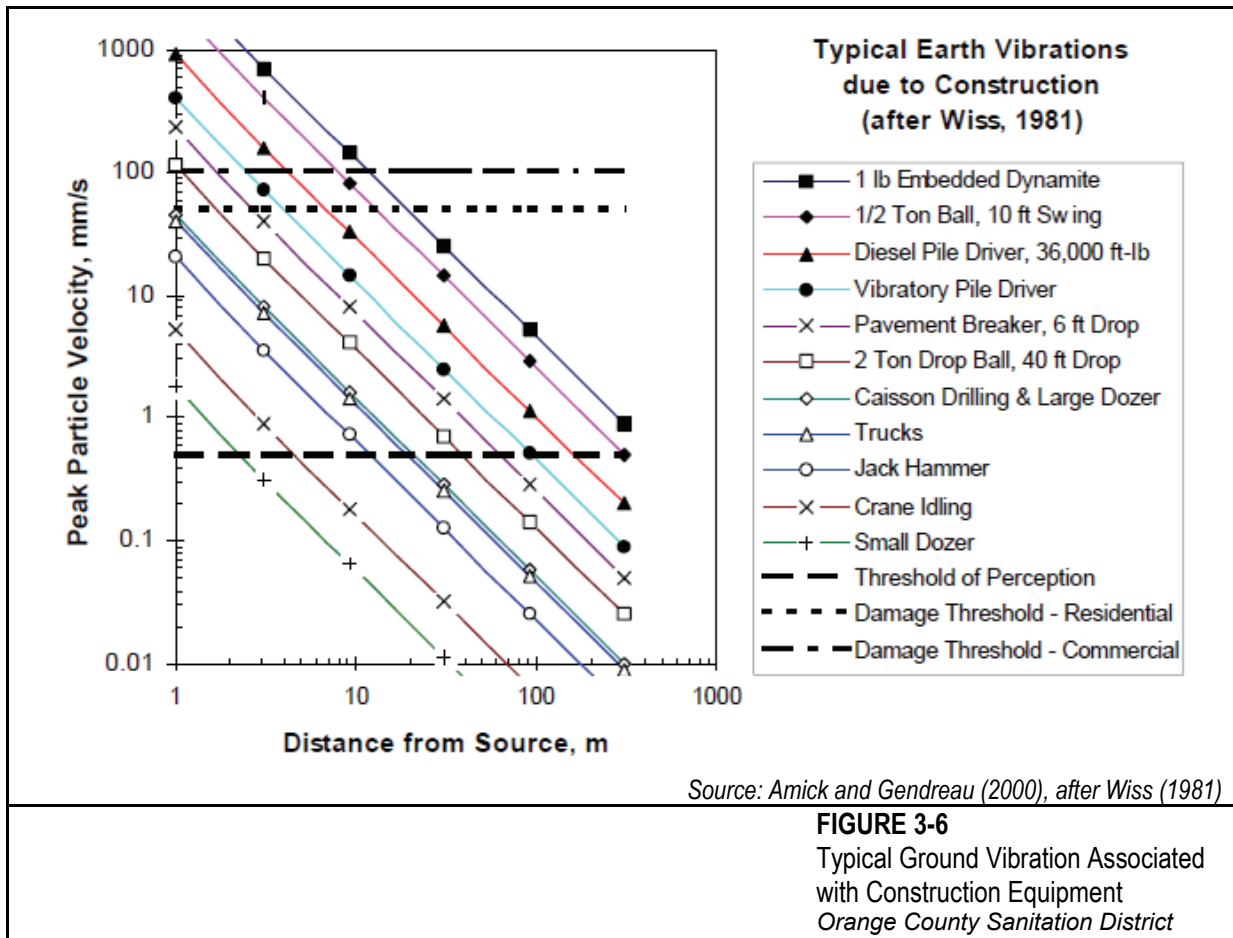
Edinger-Bolsa Chica Trunk Improvements (11-25). This project would increase the capacity of the Edinger-Bolsa Chica Trunk sewer located along Bolsa Chica Street between Bolsa Avenue and Robinwood Drive in the City of Huntington Beach. During construction of the project, trench excavation, sewer pipe installation, paving activities, and limited truck trips would generate temporary noise levels in the immediate area (see Table 2-4 for a list of construction equipment). Construction noise levels could reach 85 dBA at locations close to such activities. However, noise generated by construction would be temporary, intermittent, and variable in magnitude. Provided that construction and any subsequent maintenance activities occur during time limits allowed by the Huntington Beach Municipal Code, the project would be in compliance with the local noise standards. Operation of the project is not expected to generate any noise above ambient noise levels from traffic.

Groundborne Vibration

Construction activities such as grading, excavation, and demolition have the potential to generate groundborne vibration near the construction site. Vibration would be caused by heavy trucks, excavators, and dozers. Vibration from construction activities could effect nearby residences due to their close proximity to the construction site. No vibration would result from operation activities.

Groundborne vibration intensities vary with soil types. Generally speaking, the harder the soils with greater clay content, the farther vibrations may travel. Figure 3-6 provides a

general model of construction vibrations as a function of the distance based on peak particle velocity (PPV).



According to this model, at a distance of 50 feet (approximately 15 meters) groundborne vibrations from most construction equipment would be at a level below the threshold of perception (~ 0.5 mm/s) for vibration.

Areas along sewer improvement alignments would be susceptible to vibration effects. There would not be any steady vibrations caused by stationary sources associated with sewer improvement projects, but rather intermittent vibrations associated with construction activities. Perceptible vibrations would be typically felt within 10 or 15 feet of the construction activities.

Structures located closer than 25 feet may experience greater vibration intensities. However, damage to offsite structures would not be anticipated, even for sheet driving. Perceptible vibration would be intermittent.

Construction

It is possible that certain construction activities could conflict with local noise standards, resulting in a significant unavoidable construction-related noise impact.

Mitigation Measures 3.9-1 and 3.9-2 have been identified to reduce potential noise impacts associated with construction of the proposed sewer improvements.

Impact 3.9-1: Construction activities could result in short-term noise disruptions to surrounding areas.

Impact 3.9-2: Construction activities could expose persons to groundborne vibration.

3.9.3 Mitigation Measures

The following mitigation measures have been identified to reduce construction-related noise impacts.

Mitigation Measure 3.9-1: To minimize noise disruption during construction, construction activities will generally be scheduled to occur during times allowed by applicable codes, noise ordinances, or permits. Additionally, the following mitigations could be implemented as required:

- Noise reduction measures such as sound blankets or temporary sound walls could be used to reduce noise generation from stationary noise generating equipment during construction.
- Stationary noise generating equipment such as generators could be placed within the jacking pits where possible to reduce noise during construction.
- Pile driving activities or other particularly disruptive construction could be limited to specific times agreed to with agencies of jurisdiction or adjacent property owners prior to construction.
- Where appropriate, noise monitoring at the closest sensitive receptors could be conducted and reports submitted to the city of jurisdiction.

Mitigation Measure 3.9-2: Project level review will be completed and will identify specific areas susceptible to groundborne vibration. For such identified areas, construction notification would occur and construction activities would be limited to times allowed by applicable codes, noise ordinances or permits.

3.9.4 Significance After Mitigation

Although the projects would cause temporary and periodic increases in noise levels in local areas, impacts would be less than significant providing construction is performed during times allowed by the local jurisdictions and recommended mitigation is implemented. However, in some instances even with implementation of the mitigation measures provided, construction related noise impacts could be disruptive and could conflict with city noise ordinances resulting in a significant unavoidable construction-related noise impact.

Noise impacts from operation of the collection system improvement projects are expected to be less than significant.

3.10 Population and Housing

3.10.1 Setting

The California Department of Finance estimated that the population of Orange County was 3,047,054 as of January 1, 2005 and increased 0.8 percent to 3,072,336 as of January 1, 2006. Southern California Association of Governments projects the population of Orange County will be 3,552,742 in 2030. This represents a population increase from the 2006 population of 15.6 percent (480,406 people). The California Department of Finance estimated that as of January 1, 2006, approximately 1,018,380 housing units were in Orange County with a vacancy rate of 3.34 percent.

The Sanitation District provides wastewater services to approximately 2.5 million of the approximately 3 million people living in Orange County. Future populations for the Sanitation District service area have been identified and are based on the 2004 Orange County Projections (2004 OCP) developed by the Center for Demographic Research (CDR). Table 3-4 presents population projections for the entire Sanitation District service area except for the part of the Irvine Ranch Water District (IRWD) tributary to the Main Street flume. Over the 30-year period, population is projected to increase 17.3 percent.

TABLE 3-4
Orange County Sanitation District Service Area Population Projections

Year	Population*	Annual % Increase
2000	2,155,811	-
2005	2,258,602	0.95
2010	2,378,489	1.06
2020	2,489,821	0.47
2030	2,527,758	0.15

*Processed from 2000 Census Data and CDR
Orange County Projections 2004

Source: Orange County Sanitation District Strategic
Plan Update, April 2006 (Job j-101)

Table 3-5 presents CDR employment projections for the entire Sanitation District service area, excluding the part of the IRWD tributary to the Main Street flume. Over the 30-year period, employment is projected to increase by 16.5 percent.

TABLE 3-5
Orange County Sanitation District Service Area Employment Projections

Year	Population*	Annual % Increase
2000	1,200,487	-
2005	1,215,389	0.95
2010	1,297,850	1.06
2020	1,355,463	0.47
2030	1,398,403	0.15

*Processed from 2000 Census Data and CDR
Orange County Projections 2004

Source: Orange County Sanitation District Strategic
Plan Update, April 2006 (Job j-101)

Table 3-6 compares 2005 population and housing data with 2030 population and housing projections by city for the Sanitation District service area.

TABLE 3-6
Orange County Sanitation District Service Area Population and Housing Comparison by City

City	Population		Housing	
	2005	2030	2005	2030
Anaheim	343,932	383,739	101,065	106,005
Brea	39,204	46,947	14,803	17,086
Buena Park	81,608	92,481	24,233	25,655
Costa Mesa	111,737	129,098	40,751	43,426
Cypress	47,776	53,752	16,310	17,393
Fountain Valley	58,692	66,107	19,227	20,094
Fullerton	133,505	149,711	46,401	49,051
Garden Grove	169,557	189,445	46,700	48,244
Huntington Beach	201,692	223,992	78,277	80,934
Irvine	182,890	203,964	67,414	70,538
La Habra	62,496	68,576	19,561	19,661
La Palma	15,835	17,368	5,140	5,181
Los Alamitos	11,926	13,190	4,358	4,434
Newport Beach	84,273	94,168	42,260	45,043
Orange	138,289	153,576	44,090	45,341
Placentia	49,864	55,164	16,217	17,009
Santa Ana	350,625	370,130	75,671	76,538
Seal Beach Total	25,058	27,471	14,446	14,521
Stanton	39,460	51,077	11,320	14,184
Sunset Beach ^a	1,234	1,461	N/A	N/A
Tustin	77,475	88,788	27,267	28,559
Villa Park	6,153	6,838	2,004	2,048
Westminster	89,526	99,291	27,037	27,605
Yorba Linda	66,901	76,811	21,740	24,384
Unincorporated	116,593	176,544	39,665	60,696
Sanitation District Service Area Total	2,506,301	2,839,689	805,957	863,630

^aSunset Beach Sanitary District, Sewer Master Plan 2005 (2005/2020 estimated population).

Source: CDR Orange County Projections 2004.

3.10.2 Impacts

Thresholds of Significance

Impacts related to population and housing would be considered significant if the proposed Plan would:

- 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)

Other significance criteria identified in the CEQA Checklist were evaluated for the proposed Plan in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have a less-than-significant impact or no impact associated with these other significance criteria for the following reasons: (1) the proposed Plan would have no impact associated with displacing existing housing or necessitating the construction of replacement housing; and (2) the proposed Plan would have no impact associated with displacing people or necessitating the construction of replacement housing.

Evaluation

The CEQA Guidelines require growth-inducing impacts to be identified. Growth-inducing impacts include changes in the amount and distribution of growth.

Based on the estimate of workers included in Table 2-4 and the preliminary construction schedule included in Table 2-5, the proposed Plan could require up to 50 construction workers during periods of peak construction. The vast majority of workers are expected to live and work in the area. However, if all workers were to move to the area for employment, the population of the Sanitation District service area, as reported in the 2000 Census, would increase by 0.002 percent, which would be inconsequential and would have no impacts associated with a temporary increase of population, housing, geographical distribution, and supply-demand relationships.

In the long term, the proposed Plan would not include new onsite staff; existing Sanitation District staff or contractors would provide maintenance and operation. Because the proposed Plan provides improvements only to existing facilities and requires no new onsite operating staff, the proposed Plan would not affect population, housing, geographic distribution, or supply-demand relationships. The level of the changes that would occur due to implementation of the proposed Plan would not alter the local, regional, or other adopted population growth policies because no new onsite staff would be required.

The quantity and distribution of population in the Sanitation District service area affect housing, the economy, the environment, infrastructure use, and demand on public services. Thus, to respond to and plan for future population, the County of Orange General Plan and the SCAG Regional Comprehensive Plan and Guide include forecasts of population and housing trends. Because projections are used to plan the infrastructure and level of service required to support the future population, actual growth in excess of the projections can lead to deficiencies.

The Sanitation District completed a capacity analysis of its trunk sewer system as part of its 2006 Strategic Plan Update (Job No. J-101). This analysis supersedes the collection system element of the Sanitation District 1999 Strategic Plan. The capacity analysis, based on recent growth projections for Orange County and simulations of flows in the Sanitation District collection system under dry and wet weather conditions, identified portions of the collection system with potential capacity deficiencies through 2030.

The proposed Plan focuses on improvements to the Sanitation District's regional wastewater collection system, given a projected level of growth that would occur with or without implementation of its policies or actions. This Plan has been developed to accommodate planned growth within the Sanitation District service area and provide beneficial improvements to regional wastewater conveyance facilities. Implementation of the

proposed Plan provides for improvements to the regional collection system that would address existing and projected deficiencies in the collection system. Local agencies, including Cities or the County, must evaluate the effects of planned growth on wastewater infrastructure, as well as opportunities to manage growth and improve the local jobs/housing balance. Urban growth and service needs are described by local agencies in their General Plans and the impacts of planned growth on existing infrastructure are analyzed in Master Plans and EIRs. In this regard, environmental review has occurred or would occur in conjunction with each jurisdiction's approval of its General Plan, General Plan updates, or individual development projects. For example, environmental impacts, including growth inducing impacts, within the Metro East Mixed Use Overlay Zone in the City of Santa Ana have been analyzed in the EIR for the Metro East Mixed Use Overlay Zone (SCH# 2006031041).

As stated herein, the proposed improvements associated with sewer capacity deficiencies would accommodate planned growth and reduce surcharging (that is, hydraulic overload) in sewers, primarily during wet weather. Consequently, the proposed Plan is intended to match and adequately serve the growth planned and approved through the land use jurisdictions in the service area, including Cities or the County. While the proposed Plan accommodates planned growth within the Sanitation District service area, it would not induce growth and would not result in significant growth inducing impacts.

3.10.3 Mitigation Measures

Because the proposed plan will not result in any significant growth-inducing impacts under the CEQA criteria, no mitigation measures are required.

3.10.4 Significance After Mitigation

Potential impacts from construction and operation of the collection system improvement projects related to population and housing will be at a level that is less than significant.

3.11 Public Services

3.11.1 Setting

The collection system improvements would be constructed adjacent to and perpendicular to existing underground and aboveground utilities. These utilities include water lines, storm drains, aboveground and underground gas and electric power lines. Table 3-7 shows the public service and utility providers for each city in the Sanitation District service area. Water services are provided by municipalities that generally receive water from either local groundwater sources or the Metropolitan Water District (MWD). Storm drains within the study area are owned and maintained by the cities in which the storm drains are located.

TABLE 3-7
Orange County Sanitation District Service Area Public Service and Utility Providers by City

City	Fire	Police	Water	Storm Drainage	Gas	Electric
Anaheim	City of Anaheim Fire Dept.	City of Anaheim Police Dept.	MWD, City of Anaheim	City of Anaheim	SCG	City of Anaheim, SCE
Brea	City of Brea Fire Dept.	City of Brea Police Dept.	MWD, CA Domestic Water Company	City of Brea	SCG	SCE
Buena Park	OCFA	City of Buena Park Police Dept.	MWD, City of Buena Park	City of Buena Park	SCG	SCE
Costa Mesa	City of Costa Mesa Fire Dept.	City of Costa Mesa Police Dept.	MWD, City of Costa Mesa	City of Costa Mesa	SCG	SCE
Cypress	OCFA	City of Cypress Police Dept.	Southern CA Water Company	City of Cypress	SCG	SCE
Fountain Valley	City of Fountain Valley Fire Dept.	City of Fountain Valley Police Dept.	MWD, City of Fountain Valley	City of Fountain Valley	SCG	SCE
Fullerton	City of Fullerton Fire Dept.	City of Fullerton Police Dept.	MWD, City of Fullerton	City of Fullerton	SCG	SCE
Garden Grove	City of Garden Grove Fire Dept.	City of Garden Grove Police Dept.	MWD, City of Garden Grove	City of Garden Grove	SCG	SCE
Huntington Beach	City of Huntington Beach Fire Dept.	City of Huntington Beach Police Dept.	City of Huntington Beach	City of Huntington Beach	SCG	SCE
Irvine	OCFA	City of Irvine Police Dept.	Irvine Ranch Water District	City of Irvine	SCG	SCE
La Habra	City of La Habra Fire Dept.	City of La Habra Police Dept.	City of La Habra, CA Domestic Water System	City of La Habra	SCG	SCE
La Palma	OCFA	City of La Palma Police Dept.	MWD, City of La Palma	City of La Palma	SCG	SCE
Los Alamitos	OCFA	City of Los Alamitos Police Dept.	Southern CA Water Company	City of Los Alamitos	SCG	SCE
Newport Beach	City of Newport Beach Fire Dept.	City of Newport Beach Police Dept.	MWD, Orange County Water District	City of Newport Beach	SCG	SCE
Orange	City of Orange Fire Dept.	City of Orange Police Dept.	MWD, City of Orange	City of Orange	SCG	SCE
Placentia	OCFA	City of Placentia Police Dept.	Southern CA Water Company	City of Placentia	SCG	SCE
Santa Ana	City of Santa Ana Fire Dept.	City of Santa Ana Police Dept.	MWD, City of Santa Ana	City of Santa Ana	SCG	SCE
Seal Beach	OCFA	City of Seal Beach Police Dept.	Southern CA Water Company	City of Seal Beach	SCG	SCE
Stanton	OCFA	Orange County Sheriff Dept.	Southern CA Water Company	City of Stanton	SCG	SCE
Tustin	OCFA	City of Tustin Police Dept.	MWD, City of Tustin	City of Tustin	SCG	SCE
Villa Park	OCFA	Orange County Sheriff Dept.	Serrano Water District	City of Villa Park	SCG	SCE
Westminster	OCFA	City of Westminster Police Dept.	MWD, City of Westminster	City of Westminster	SCG	SCE
Yorba Linda	OCFA	City of Yorba Linda Police Dept.	Southern CA Water Company	City of Yorba Linda	SCG	SCE

OCFA Orange County Fire Authority

MWD Metropolitan Water District

SCE Southern California Edison

SCG Southern California Gas

These municipal storm drains eventually drain into flood control channels owned by the Orange County Flood Control District (OCFCD). Electrical and natural gas transmission lines for most of the cities in the Sanitation District service area are owned and operated by Southern California Edison (SCE) and the Southern California Gas Company (SCG), respectively. The City of Anaheim owns and operates electrical utilities within the City of Anaheim.

Fire protection and paramedic services to locations within the Sanitation District service area are provided by local fire departments and the Orange County Fire Authority (OCFA). Ambulance service also is provided in most areas by privately operated companies. Similar to fire protection, police protection services are provided by local police departments. The cities of Stanton and Villa Park are served by the Orange County Sheriff. Fire protection and police protection services for these cities are provided on a mutual-assistance basis, whereby crews from one jurisdictional area respond to emergencies in adjacent jurisdictions, if necessary.

3.11.2 Impacts

Thresholds of Significance

Impacts related to public services would be considered significant if the proposed Plan would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities

Evaluation

The potential impacts of the collection system on public services were evaluated based on the existing public services provided in the proposed Plan area.

Potential impacts to fire, police, and emergency medical services from construction of the proposed sewer improvement projects could include increased response times due to restricted vehicular access on roadways. Because access to emergency facilities (such as hospitals, police stations, or fire stations) must be available 24 hours a day, coordination with fire stations and emergency medical facilities would occur to ensure emergency vehicle access is maintained.

Construction of the collection pipeline system would involve trenching within the public right-of-way. Width of the trench would range from 4 feet to 16 feet depending on the size of the sewer being replaced, and the depth of the trench would range from 14 to 24 feet. The active work area along the open trench would extend about 5 to 10 feet on one side of the trench and 20 to 30 feet to the other side, allowing for access by trucks and loaders. The minimum construction right-of-way would be 25 feet; the maximum construction easement would be 50 feet. Jacking pits for the pipeline would be approximately 50 feet by 20 feet; the temporary pits typically would be excavated to a depth of 50 feet. Other construction

activities include open manholes during manhole rehabilitation. The potential for persons to enter the construction areas during construction could represent a public safety hazard.

Utility services could be disrupted as a result of project construction. Impacts to utilities are considered significant if construction results in direct or possibly lengthy disruption of essential utility services. During construction, utility lines for water, electricity, natural gas, and telephones would be protected in place or relocated to ensure continued service to residences and businesses. Utility lines and cables that would be disrupted during pipe installation would be identified during design for all components.

Vandalism might increase in areas where construction equipment and materials are stored, which could result in an increased need for security.

Mitigation Measures 3.11-1, 3.11-2, 3.11-3a, 3.11-3b, 3.11-4, 3.11-5, 3.11-6a, 3.11-6b, 3.11-6c, and 3.11-7 have been identified to mitigate potentially significant impacts to public services during construction of proposed sewer improvements. Following implementation of these mitigation measures, potentially significant adverse public services impacts would be reduced to levels that are less than significant.

Impact 3.11-1: Traffic impacts associated with construction activities could impact police departments, fire departments, local service providers, and schools.

Impact 3.11-2: Construction activities could impact access to fire stations and emergency medical facilities.

Impact 3.11-3: Open trenches associated with construction activities could result in a safety impact.

Impact 3.11-4: During construction activities impacts associated with the vandalism of equipment at staging and storage areas could occur.

Impact 3.11-5: Improper disposal of construction refuse would impact public services.

Impact 3.11-6: Project activities could result in impacts associated with disruptions to existing utilities.

Impact 3.11-7: Projects could affect the compatibility of existing and future projects.

3.11.3 Mitigation Measures

The following mitigation measures are recommended to offset project impacts on public services.

Mitigation Measure 3.11-1: The contractor will provide a copy of the Traffic Control Plan to the Sheriff's department, local police departments, and fire departments prior to construction. The Sanitation District will provide 72-hour notice of construction to the local service providers of individual pipeline segments.

Mitigation Measure 3.11-2: Access to fire stations and emergency medical facilities will be maintained on a 24-hour basis and at least one access to medical facilities will be available at all times during construction. The Sanitation District will notify appropriate officials at the medical facility regarding construction schedule.

Mitigation Measure 3.11-3a: Construction areas will be secured or trenches will be promptly backfilled after pipeline installation. If installation is incomplete, steel trench plates will be used to cover open trenches as appropriate for the specific site.

Mitigation Measure 3.11-3b: Construction contractors will ensure that adequate barriers are established to prevent pedestrians from entering the open trenches of an active construction area. Warnings will be posted sufficient distances from the work area to allow pedestrians to cross the street at controlled intersections.

Mitigation Measure 3.11-3c: To ensure aesthetic consistency and public safety, construction contractors will restore disturbed areas along the alignment as mutually agreed by the Sanitation District and local jurisdictions prior to construction.

Mitigation Measure 3.11-4: Construction contractors will be responsible for providing appropriate security measures for all equipment staging and/or storage areas needed for sewer improvement projects.

Mitigation Measure 3.11-5a: Construction contractors will dispose of construction refuse at approved disposal locations. Contractors will not be permitted to dispose of construction debris in residential or business containers.

Mitigation Measure 3.11-5b: Construction contractors will be required to keep construction and staging areas orderly, free of trash and debris.

Mitigation Measure 3.11-6a: A detailed study identifying utilities along the pipeline routes will be conducted during the design stages of sewer improvement projects. For segments with potential adverse impacts, the following mitigations will be implemented.

- Utility excavation or encroachment permits will be required from the appropriate agencies. These permits include measures to minimize utility disruption. The Sanitation District and its contractors will comply with permit conditions, and such conditions will be included in construction contract specifications.
- Utility locations will be verified through field surveys.
- Detailed specifications will 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 will be notified of Sanitation District construction plans and schedule. Arrangements will be made with these entities regarding protection, relocation, or temporary disconnection of services.

Mitigation Measure 3.11-6b: To reduce potential impacts associated with utility conflicts, the following measures will be implemented in conjunction with 3.11-6a.

- Disconnected cables and lines will be promptly reconnected.
- The Sanitation District will observe Department of Health and Safety (DHS) standards, which require a 10-foot-horizontal separation between parallel sewer and water mains and 1-foot vertical separation between perpendicular water and sewer line crossings. In the event that the separation requirements cannot be maintained, the Sanitation District will obtain DHS variance through provisions of water encasement, or other means deemed suitable by DHS, and by encasing water mains in protective sleeves where a new sewer force main crosses under or over an existing sewer main.

Mitigation Measure 3.11-6c: The construction contractor will comply with the Sanitation District requirements and specifications to protect existing utility lines.

Mitigation Measure 3.11-7: The Sanitation District will coordinate with the Orange County Resources and Development Management Department (RDMD) and other jurisdictions as required to ensure compatibility and joint-use feasibility with existing and future projects.

3.11.4 Significance After Mitigation

With implementation of Mitigation Measures 3.11-1 through 3.11-7, potentially significant adverse impacts to public services resulting from implementation of sewer improvements would be reduced to levels that are less than significant.

3.12 Transportation and Traffic

3.12.1 Setting

Existing Transportation Facilities

Automobiles are the primary source of transportation in the Sanitation District service area. Transportation land use is composed of freeways, toll roads, roads, streets, parking lots, and truck and bus terminals. Several freeways and toll roads traverse the Sanitation District service area. These include: I-5, I-405, SR-22, SR-91, SR-57, SR-55, SR-73, SR-133, SR-241, and SR-261.

The Sanitation District service area is crossed by a network of arterial highways, as shown in the Orange County Master Plan of Arterial Highways and General Plan circulation elements of the various cities. This arterial highway network defines roadways as major arterials (six lanes, divided, 120-foot rights-of-way), primary (four to six lanes divided, 100-foot rights-of-way) and secondary (four lanes, divided or undivided, 80-foot right-of-way).

Streets generally are oriented north-to-south and east-to-west to the northwest of SR-55, while streets southeast of SR-55 are oriented along diagonal alignments. The rectangular grid of arterials north of SR-55 is nearly perfect, consisting of multilane highways at 2-mile spacing, interrupted only by significant landforms and land preserves. Highway alignments to the south are less regular, with many routes following circuitous alignments because of terrain and landforms.

The freeway and arterial highway system generally carries relatively high traffic volumes, with most freeways approaching or exceeding their capacity. On the freeways, demand exceeds capacity for several hours each day, particularly on I-5, I-405, SR-22, SR-91, and SR-55. Congestion also occurs on many arterials that provide access to the freeway system.

The Orange County Transportation Authority (OCTA) provides bus transit service countywide, and the area ride-sharing program is administered by OCTA. Metrolink serves commuter traffic throughout Orange, Riverside, San Bernardino and Los Angeles counties. Passenger rail service is provided by Amtrak with stops in Fullerton, Anaheim, Santa Ana, and Irvine, access north to Los Angeles and Ventura Counties, and south to San Diego. Amtrak serves commuter and regional travel needs.

Existing Traffic Conditions

The collection system improvements would be constructed along existing public streets and highways. Table 3-8 includes a list of streets that would be affected by each of the proposed sewer improvements and summarizes key traffic circulation information. The traffic information includes the number of travel lanes, street sizes, classifications (arterial, collector, or local), and traffic control at the affected intersections (grade separation, signal, or stop sign). The last column of the table lists the transit or bus routes that might be affected by lane closures due to the listed improvement projects.

TABLE 3-8
Existing Transportation Facilities Along the Sanitation District Proposed System Improvements

CIP No.	Proposed System Improvements	City	Street	End Date	Cross Streets	# of Lanes*	Road Type	Traffic Control	Transit Route^			
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	Myrtle Street	2010	Raitt St	2	Collector	Stop Sign				
					Bristol St	2		Stop Sign				
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley Santa Ana	Alton Street	2011	Fairview Rd	3		Signal				
					Bristol St	2		Signal				
02-49	Taft Branch Improvements	Orange County	Taft Ave	2014	Glassell St	4	Arterial	Signal	46, 59			
					Shaffer St	4		Signal				
02-52	Euclid Relief Improvements	Santa Ana Fountain Valley	Euclid St	2012	Edinger Ave	4		Signal	37, 37A			
					Warner Ave	4	Arterial	Signal				
					Slater Ave	6		Signal				
					Talbert Ave	6		Signal				
02-65	Newhope-Placentia / Cypress Trunk Replacement	Anaheim	State College Blvd	2015	Katella Ave	6		Signal	57, 30, 42			
					Ball Rd	4		Signal				
					Lincoln Ave	4	Arterial	Signal				
					La Palma Ave	5		Signal				
		Fullerton					Orangethorpe Ave	4		Signal		
							Chapman Ave	5		Signal		
							Yorba Linda Blvd	6		Signal		20, 26
							Bastanchury Rd	4		Signal		

TABLE 3-8 (cont.)
Existing Transportation Facilities Along the Sanitation District Proposed System Improvements

CIP No.	Proposed System Improvements	City	Street	End Date	Cross Streets	# of Lanes*	Road Type	Traffic Control	Transit Route^
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	Maple Ave	2011		2	Local	Stop Sign	
03-55	Westside Relief Interceptor	La Palma	Denni St	2013	Crescent Ave	2			
		Cypress			Lincoln Ave	2			
		Los Alamitos	Katella Ave		Bloomfield St	6	Arterial	Signal	
					Los Alamitos Blvd	6		Signal	
03-58	Magnolia Trunk Rehabilitation	Fountain Valley	Bushard St	2012		4	Collector	Signal	
		Westminster	Magnolia St		Edinger Ave	6		Signal	33
		Garden Grove			Bolsa Ave	6		Signal	
		Stanton			Westminster Ave	6		Signal	
		Anaheim			Garden Grove Blvd	4	Arterial	Signal	
		Fullerton			Chapman Ave	4		Signal	
					Katella Ave	4		Signal	
					Ball Rd	5		Signal	
					Lincoln Ave	5		Signal	
					La Palma Ave	5		Signal	
					Orangethorpe Ave	5		Signal	
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	Artesia Blvd	2012	Dale St	3		Signal	25, 29
					Beach Blvd	4	Arterial	Signal	
			Knott Ave		Knott Ave	5		Signal	

TABLE 3-8 (cont.)
Existing Transportation Facilities Along the Sanitation District Proposed System Improvements

CIP No.	Proposed System Improvements	City	Street	End Date	Cross Streets	# of Lanes*	Road Type	Traffic Control	Transit Route^
03-60	Beach Trunk - Knott Sewer Relief	Buena Park	Kingman Ave	2012	Artesia Blvd	2	Local	Stop Sign	25, 29
			Artesia Blvd		Knott Ave	5	Arterial	Signal	
					Kingman Ave	4		Stop Sign	
			Knott Ave		Orangethorpe Ave	5	Arterial	Signal	
					Artesia Blvd	6		Signal	
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	Balboa Blvd	2012	Newport Beach Blvd	6	Arterial	Signal	
			Newport Beach Blvd		Balboa Blvd	6	Arterial	Signal	
05-█	Newport Beach Force Main Upgrades	Newport Beach	Pacific Coast Hwy	2012	Newport Beach Blvd	6	Arterial	Signal	
			Balboa Blvd Newport Beach Blvd		Pacific Coast Hwy	6	Arterial	Grade Separated	
05-61	Bayside Drive Improvement	Newport Beach	Bayside Dr	2011	Jamboree Rd	2	Collector	Signal	
					El Paseo Dr	2		Signal	
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	Dover Dr	2011	Pacific Coast Hwy	4	Arterial	Signal	
					Westcliff Dr	4,2	Collector	Signal	
					Irvine Ave	2		Signal	
					Costa Mesa	Westcliff Dr	4	Arterial	
			Irvine Ave		4		Signal		
06-17	District 6 Trunk Sewer Relief	Costa Mesa	Pomona Ave	2010	Pacific Coast Hwy	2	Collector	Signal	
		Newport Beach			Newport Beach Blvd	2			

TABLE 3-8 (cont.)
Existing Transportation Facilities Along the Sanitation District Proposed System Improvements

CIP No.	Proposed System Improvements	City	Street	End Date	Cross Streets	# of Lanes*	Road Type	Traffic Control	Transit Route[^]
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	Fairview Rd	2011	Newport Beach Blvd	4	Arterial	Signal	
					Baker St	6		Signal	
07-60	Browning Subtrunk Sewer Relief	Tustin Unincorporated Orange County	Browning Ave	2011	Irvine Blvd	4	Collector	Signal	
07-62	Von Karman Trunk Sewer Relief	Irvine Newport Beach	Campus Drive	2013	MacArthur Blvd	4	Collector	Signal	
11-25	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach Seal Beach	Bolsa Chica St	2015	Bolsa Ave	6	Arterial	Signal	
					McFadden Ave	6			

* Total number of through lanes (both directions) on the road within that section

[^] OCTA bus routes: <http://www.octa.net/schedule%20and%20maps.asp?category=schedule%20and%20maps&page=routes>

3.12.2 Impacts

Thresholds of Significance

Impacts related to transportation and traffic would be considered significant if the proposed Plan would:

- Cause an increase in traffic that 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)
- Exceed, either individually or cumulatively, a standard level of service established by the county congestion management agency for designated roads or highways
- Result in inadequate emergency access

Other significance criteria identified in the CEQA Checklist were evaluated for the proposed Plan in the Initial Study, which is included in Appendix B1. The proposed Plan was determined to have a less-than-significant impact or no impact associated with these other significance criteria for the following reasons: (1) the proposed Plan would have no impact on air traffic patterns, (2) the proposed Plan would not increase hazards due to design features or incompatible uses, (3) the proposed Plan would not result in inadequate parking capacity, and (4) the proposed Plan would not affect adopted policies, plans, or programs supporting alternative transportation.

Evaluation

During sewer and manhole rehabilitation projects, limited lane closures are anticipated. Construction equipment would consist of one or two trucks parked over the manhole in the street. No road closures are anticipated for rehabilitation projects. Construction activities would follow standard operating procedures and Sanitation District construction specifications. Impacts to the circulation routes would be short-term (no more than a few days) and are related primarily to the construction activities involved in installing the proposed improvements. Upon completion of each construction project, the affected roadways would be restored to fully operable conditions and no long-term effects to these circulation routes would exist.

Construction methods for collection system improvement projects generally would involve lining, manhole repair, open trench excavation for new sewer installation, shoring, dewatering, potential pipe removal, manhole removal and associated demolition, and potential jack-and-bore methods for installation at sensitive crossings (for example, busy intersections, railroad spurs, or flood control channels). Construction of collection system improvement projects would likely include some lane closures and limited road closures. Removed pavement and excavated soil would be hauled offsite for disposal. Imported backfill would be hauled to stockpiles near the open trench and ultimately used to fill the trench.

It has been estimated that Project work occurring between now and 2017 would generate construction-related traffic and trips as shown in Table 3-9. Because specific details for the individual projects are unavailable at this time, assumptions about potential activities, locations, project schedules, duration of heavy construction, quantities, and equipment have been made for the purpose of estimating construction traffic impacts and were listed in Tables 2-2, 2-3, 2-4, and 2-5. The maximum number of workers needed per day at any one site is 10, with an assumed vehicle occupancy rate of 1.2. Thus, a total of 17 worker trips will be made daily to and from a construction site. The number of truck trips is estimated given the information in Table 2-3 and based on a 21.75 working days per month.

TABLE 3-9
Estimated Construction Traffic of the Sanitation District-Proposed System Improvements

Projects	Duration (Months)*	Total Truck Trips	Daily Truck Trips**	Daily Workers	Daily Worker Trips^	Total#
Santa Ana Trunk Sewer Rehabilitation	3	NA	NA	10	17	17
Taft Branch Improvements	3	42	1	10	17	18
Euclid Relief Improvements	18	1,522	8	10	17	24
Newhope-Placentia and Cypress Trunk Replacement	24	1,655	6	10	17	23
Fullerton-Brea Interceptor Sewer Relief	6	76	1	10	17	18
Westside Relief Interceptor	12	320	2	10	17	19
Magnolia Trunk Rehabilitation	12	NA	NA	10	17	17
Miller-Holder Trunk Sewer Relief	12	424	3	10	17	20
Beach Trunk-Knott Interceptor Sewer Relief	12	480	4	10	17	20
Trask Branch Sewer Relief	6	80	1	10	17	18
Balboa Trunk Sewer Rehabilitation	12	NA	NA	10	17	17
Newport Force Main Upgrades	6	NA	NA	10	17	17
Bayside Drive Improvement	6	NA	NA	10	17	17
Dover Drive Trunk Sewer Relief	12	315	2	10	17	19
District 6 Trunk Sewer Relief	9	384	4	10	17	21
Fairview Road Trunk Sewer Relief	12	424	3	10	17	20
Browning Subtrunk Sewer Relief	9	270	3	10	17	19
Von Karman Trunk Sewer Relief	3	24	1	10	17	17
Edinger-Bolsa Chica Trunk Improvements	6	138	2	10	17	19

Source: Orange County Sanitation District

NA: Not Applicable

* Duration represents period when heavy construction would occur.

** Daily truck trips are estimated based on 21.75 working days per month

^ Daily worker trips are estimated based on a vehicle occupancy rate of 1.2 persons per vehicle

Total construction generated trips within the 8 hour working time frame of business day

Note: trips are multiplied by 2 for in and out trips (arriving and departing trips)

The total number of construction trips per day is minimal compared to the daily commuter trips on the identified sections. For example, the maximum value of daily trips on Euclid Street (24 total construction trips per day) is on a segment (north of I-405 and south of I-5) with an average daily traffic of approximately 35,000 vehicles per day (OCTA, 2006). In addition, most of the roadways listed in Table 3-9 have sufficient widths to accommodate trench construction. Thus, traffic can be accommodated with localized lane closures. Should road closures be required, local access could be maintained with traffic detoured to adjacent roadways. Phased construction would be employed to minimize impacts to local residences and cross traffic, and special attention would be given to areas with sensitive receptors that are listed in the Land Use section of the Program EIR. Examples of special and sensitive receptors are hospitals, schools, and places of worship.

Mitigation Measures 3.12-1a through 3.12-2f have been identified to reduce potential impacts related to transportation and traffic that are associated with construction of the proposed sewer improvements.

Impact 3.12-1: Traffic impacts will occur within city streets and would impact traffic.

Impact 3.12-2: Construction of collection system improvement projects would include lane closures and limited road closures that would worsen LOS along local roadways.

3.12.3 Mitigation Measures

Sewer improvement projects involving excavation along streets and highways would create a variety of temporary (short-term) inconveniences and nuisances to commuters using those circulation routes. While these impacts would be short-term and localized, a potential exists for increased travel times, detoured traffic, and safety hazards due to the operation and storage of construction equipment and materials. These impacts could affect motorists, bicyclists, and pedestrians along affected travel routes. Mitigation measures would be implemented to lessen these impacts to a level that is less than significant.

Mitigation Measure 3.12-1a: Traffic control plans will be prepared by a qualified professional engineer as required prior to the construction phase of each sewer line project.

Mitigation Measure 3.12-1b: Traffic control plans will consider the ability of alternative routes to carry additional traffic and will identify the least disruptive hours for access routes to the construction site, 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, sidewalks, bikeways, and equestrian trails to the greatest extent feasible.

Mitigation Measure 3.12-1c: Encroachment permits for all work within public rights-of-way will be obtained from each appropriate agency prior to commencement of any construction. Agencies could include Caltrans, RDMD, and the various city agencies where work will occur. The Sanitation District will comply with traffic control requirements, as identified by Caltrans and the affected local jurisdictions.

Mitigation Measure 3.12-1d: Traffic control plans will comply with the Work Area Traffic Control Handbook and/or the Manual on Uniform Traffic Control Devices, as determined by each affected local agency, to minimize any traffic and pedestrian hazards that exist during project construction.

Mitigation Measure 3.12-1e: Public roadways will be restored to their existing condition after project construction is completed.

Mitigation Measure 3.12-1f: The Sanitation District 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.

Mitigation Measure 3.12-1g: 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 will be maintained to allow delivery of emergency services.

Mitigation Measure 3.12-1h: Orange County Transportation Authority will be contacted when construction affects roadways that are part of the OCTA bus transit network. Adequate procedures will be implemented to keep bus routes and stations accessible to users.

Mitigation Measure 3.12-1i: Construction traffic, mainly trucks, will be routed in a way to minimize impacts to sensitive neighborhoods. In addition, storage and staging of materials and equipment will be done after obtaining a Temporary Use Permit, when needed.

Mitigation Measure 3.12-1j: An effort will be made to solicit input from residents in the neighborhoods of the proposed improvements. These inputs will be considered in the planning phase through construction to mitigate the resident's concerns.

Mitigation Measure 3.12-1k: For sewer improvements that occur within railroad rights-of-way, the Sanitation District will follow the Southern California Regional Rail Authority (SCRRA) procedures for right-of-way encroachment – 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 Sanitation District must comply with the rules and regulations of this agreement at all times when working on SCRRA property, including those outlines 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”.

Mitigation Measure 3.12-2a: Where lane closures are necessary for construction of sewer improvement projects, all construction equipment will be staged within the closed lanes or in staging areas out of city streets.

Mitigation Measure 3.12-2b: Where lane or road closures are necessary for construction of sewer improvement projects, adequate signage will be provided informing local residents and business-owners of construction activities prior to commencement of construction activities.

Mitigation Measure 3.12-2c: Where lane or road closures are necessary for construction of sewer improvement projects, cones and/or traffic guards will be employed to clearly indicate the locations and directions of temporarily altered traffic lanes.

Mitigation Measure 3.12-2d: 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, will 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.

Mitigation Measure 3.12-2e: Public streets generally will be kept operational during construction, particularly in the morning and evening peak hours of traffic. Lane closures will be minimized during peak traffic hours.

Mitigation Measure 3.12-2f: Where road closures are necessary for construction of sewer improvement projects, signage will be posted informing motorists of road closures and delineating suitable detours both prior to and during the duration of construction activities. Prior to initiating a road closure, coordination will occur with local jurisdictions, including Caltrans.

3.12.4 Significance After Mitigation

Even with implementation of Mitigation Measures 3.12-1a through 3.12-2f, construction-related lane and road closures would result in significant unavoidable transportation and traffic impacts.

Transportation and traffic impacts from operation of the collection system improvement projects are expected to be less than significant.

blank page

4.0 Project Alternatives

4.1 CEQA Requirements

CEQA requires that a reasonable range of feasible alternatives to a proposed project be evaluated in an EIR. The CEQA Guidelines, Section 15126.6, Consideration and Discussion of Alternatives to the Proposed Project, specify that

...an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternative.

Additionally, “an EIR is not required to consider alternatives which are infeasible.” CEQA Guidelines Section 15126.6 further states that the EIR

...should briefly describe the rationale for selecting the alternatives to be discussed...and should identify any alternatives that were considered by the lead agency but were rejected as infeasible... Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

CEQA also requires consideration of a No Project Alternative. CEQA Guidelines, Section 15126.6(e)(1), states that the “purpose of describing and analyzing a no project alternative is to allow decisionmakers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” The purpose of evaluating the No Project Alternative is to allow decision makers to compare the potential impacts of the proposed Plan with the potential impacts that would occur without implementation of the proposed Plan.

4.2 Alternative Development Process

Two types of alternatives that could be reviewed in an EIR are: (1) alternatives of the project that include modified project components, such as alternative project sites or processes and/or modified facilities, layout, size and scale of the proposed project; and (2) alternatives to the proposed project that are other projects entirely or other approaches to achieving the project objectives rather than the project or modified project.

Section 4.2.1 identifies the objectives for the proposed project; Section 4.2.2 identifies the significant impacts of the proposed project, which are considered in evaluating whether an alternative could avoid or lessen these impacts; and, Section 4.2.3 describes alternatives.

4.2.1 Proposed Objectives

The proposed Plan objectives are as follows:

- Upgrade wastewater collection facilities to serve the needs of the Sanitation District service area through 2030.
- Ensure compliance with State GWDR for wastewater collection agencies by providing adequate capacity within the regional wastewater conveyance system to convey wastewater flows and preventing sanitary sewer overflows.
- Implement projects identified in the CIP to ensure that wastewater facilities are adequately maintained and upgraded and that capital improvements are scheduled and completed in a timely and cost-effective manner.

4.2.2 Potentially Significant Impacts of the Preferred Alternative

For the purpose of this analysis of alternatives, the Preferred Alternative is the proposed Plan, as described in Section 2 herein. The potentially significant impacts of the Preferred Alternative are summarized below and are provided to facilitate the evaluation of alternatives.

1. Potentially significant impacts to air quality (significant unavoidable).
2. Potentially significant impacts to biological resources (less than significant after mitigation).
3. Potentially significant impacts to cultural resources (less than significant after mitigation).
4. Potentially significant impacts associated with geology and soils (less than significant after mitigation).
5. Potentially significant impacts associated with hazards and hazardous materials (less than significant after mitigation).
6. Potentially significant impacts to hydrology and water quality (less than significant after mitigation).
7. Potentially significant impacts related to land use and planning (less than significant after mitigation).
8. Potentially significant noise impacts (significant unavoidable).
9. Potentially significant impacts to public services (less than significant after mitigation).
10. Potentially significant impacts related to transportation and traffic (significant unavoidable).

4.2.3 Description of Alternatives

Alternatives to the proposed Plan are described below and include the (1) No Project Alternative and the (2) Trunk Capacity Optimization Alternative.

No Project Alternative

The No Project Alternative for the Sanitation District strategic planning efforts would be continued implementation of the existing program from the 1989 Master Plan and the 1999 Strategic Plan, which featured collection system improvements to accommodate planned growth in the Sanitation District service area. Section 15126.6(e)(3)(A) and (B) of the CEQA Guidelines, indicate that the No Project Alternative in certain cases can be considered to be the continuation of previously approved planning policies.

Trunk Capacity Optimization Alternative

The Trunk Capacity Optimization Alternative involves the installation and operation of control structures and equipment at key diversions. The ability to control flows at key points would allow the Sanitation District to vary flow diversions between trunks for dry- and wet-weather operations. Flow-control features could allow the Sanitation District to optimize existing trunk capacity and minimize or defer installation of new sewers.

4.3 Alternatives Evaluation

This section provides evaluation of the No Project Alternative and the Trunk Capacity Optimization Alternative.

4.3.1 No Project Alternative

Under the No Project Alternative, the Sanitation District would continue to improve the collection system to eliminate conveyance deficiencies and handle wet-weather flows. Under the No Project Alternative, collection system projects would have similar construction impacts of temporary community disruption as those proposed in the Plan. However, because both the 1989 Master Plan and 1999 Strategic Plan are based on dated flow assumptions and recommendations, the risk of sewage spills could increase. Consequently, the No Project Alternative would not respond sufficiently to the Sanitation District primary objective of assurance of trunk sewer capacity for wastewater flows.

4.3.2 Trunk Capacity Optimization Alternative

The Trunk Capacity Optimization Alternative involves the installation and operation of control structures and equipment at key diversions. At present, existing diversion structures interconnect some trunks and split flow at a set ratio. The split is accomplished by manual placement of stoplogs at each diversion structure. The feasibility of installing and operating flow-control structures and equipment to optimize existing trunk capacity would be evaluated for specific trunk segments. In general, installation of control structures and equipment would have fewer impacts than installing new pipe. However, installation of control structures would only defer installation of new pipe capacity. Impacts associated with the proposed pipeline installations described in Chapter 2 and evaluated in Chapter 3 would still be anticipated to occur in the future.

4.4 Potential Impacts from Project Alternatives

The range of alternatives to be analyzed in an EIR is guided by Section 15126.6(f), which states that

... alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.

Potential impacts associated with the two alternatives are identified and compared with the potential impacts of the proposed Plan below.

Table 4-1 provides a review of the potential environmental impacts of the No Project Alternative, the Trunk Capacity Optimization Alternative, and the proposed Plan.

TABLE 4-1
Potential Impacts from the Proposed Plan and Project Alternatives

Resource Area	Proposed Plan	No Project Alternative	Trunk Capacity Optimization Alternative
Air Quality	SA	LSM	SA
Biological Resources	LSM	LSM	LSM
Cultural Resources	LSM	LSM	LSM
Geology and Soils	LSM	LSM	LSM
Hazards and Hazardous Materials	LSM	LS	LSM
Hydrology and Water Quality	LSM	SA	SA
Land Use and Planning	LSM	LSM	LSM
Noise	SA	LSM	SA
Population and Housing	N	SA	SA
Public Services	LSM	SA	LSM
Transportation and Traffic	SA	LSM	SA
N	No impact		
LS	Less than significant		
LSM	Less than significant impact after mitigation		
SA	Significant unavoidable		

The proposed Plan has the potential for short-term construction impacts to air quality, noise, and transportation and traffic that are significant and unavoidable. Additionally, the proposed Plan has the potential for short-term construction impacts that are less than significant after mitigation to biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, and public services.

The No Project Alternative, as identified in the 1999 Strategic Plan Program EIR, while having less-than-significant impacts after mitigation to air quality, noise, and transportation and traffic, would not achieve the objectives of the proposed Plan. Specifically, the No

Project Alternative would not upgrade wastewater collection facilities to serve the needs of the Sanitation District service area through 2030 nor ensure compliance with State GWDR for wastewater collection agencies. Moreover, the No Project Alternative would not implement projects currently identified in the CIP to ensure that wastewater facilities are maintained and upgraded adequately. In this regard, the No Project Alternative would contribute to a lower level of sewer service by increasing the risk of sanitary sewer overflows. Deficiencies in regional trunk sewer system capacity resulting from the No Project Alternative would constrain the ability of member agencies to provide local sewer services and could eventually lead to the initiation of building moratoriums in local jurisdictions. Thus, the No Project Alternative could result in significant unavoidable impacts to water quality due to sanitary sewer overflows, and significant unavoidable impacts to public services and, subsequently, population and housing because of constraints on member agencies in providing adequate local sewer services and having inadequate sewer capacity.

The Trunk Capacity Optimization Alternative could meet the Plan Objectives under dry weather conditions. In general, installation of control structures and equipment would be less disruptive and would have fewer impacts than installing long stretches of new pipe. However by deferring installation of adequate capacity, the Trunk Capacity Optimization Alternative would increase system surcharging and the risk of sanitary sewer overflows, particularly during wet weather. Under wet weather conditions, this alternative would result in significant unavoidable impacts to water quality and significant unavoidable impacts to public services and, subsequently, population and housing because of a decline in level of sewer service. Thus, this alternative would not ensure compliance with the GWDR. Furthermore, impacts associated with pipeline installations described in Chapter 2 and evaluated in Chapter 3 would still be anticipated to occur over time.

4.5 Environmentally Superior Alternative

The Sanitation District proposes to upgrade the regional wastewater conveyance system to provide adequate sewer capacity throughout its service area. The proposed Plan would serve the needs of the Sanitation District's service area and ensure compliance with GWDR. The proposed Plan represents a timely and cost-effective approach to construction of capital improvements. Construction of the proposed Plan improvements is anticipated to cause significant and unavoidable short-term impacts to air quality, noise, and transportation and traffic. Additionally, the proposed Plan has the potential for short-term construction impacts that are less than significant after mitigation to biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, and public services. No potentially significant operational impacts would result from implementation of the proposed Plan. Due to the temporary nature of the construction impacts and in light of the proposed Plan benefit of providing adequate sewer service throughout the Sanitation District's service area, the proposed Plan is considered the environmentally superior alternative.

blank page

5.0 Other CEQA Topics

5.1 Cumulative Impacts

This section addresses potential cumulative impacts to the environment that could occur as a result of implementing the proposed Plan in conjunction with one or more other projects.

The CEQA Guidelines (Section 15130) state that

“... a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.” Other projects causing related impacts may consist of “past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.”

Additionally,

“The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other project contribute rather than the attributes of other projects which do not contribute to the cumulative impact.”

5.1.1 Proposed Project Impacts

As summarized in the Executive Summary chapter of this PEIR and as described in detail in Chapter 3.0 Environmental Setting, Impacts, and Mitigation Measures, the proposed Plan has the potential for short-term construction impacts to air quality, noise, and transportation and traffic that are significant and unavoidable. Additionally, the proposed Plan has the potential for short-term construction impacts that are less than significant after mitigation to biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, and public services. Identified mitigation measures generally include standard construction measures that minimize and/or mitigate construction impacts to levels that are less than significant.

5.1.2 Thresholds of Significance

The CEQA Guidelines (Section 15355) define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”

A cumulative impact is significant if, when considered collectively with the impacts of other projects, it exceeds the threshold of significance for a particular individual environmental resource area, as described in Chapter 3.

5.1.3 Reasonably Foreseeable Future Projects

Section 15130 (b) of the CEQA Guidelines states that the discussion of cumulative impacts should reflect the severity of impacts and their likelihood of occurrence, and should be guided by standards of practicality and reasonableness. Table 5-1 includes a list of reasonably foreseeable future projects that could be under construction during the same timeframe as the proposed improvements to the collection system. This list was compiled by contacting each of the jurisdictions within Orange County that have approval over large discretionary development projects. Due to the number of proposed development projects throughout Orange County, the following criteria, in addition to construction timing, were used to determine if projects should be considered for potential cumulative impacts:

- Projects with an extensive construction schedule
- Projects with the possibility of having regional construction-related impacts (Criteria listed in Section 10912 of the California Water Code were used for determining if a project would have regional construction-related impacts. While this criterion is specific to water supply planning, it serves as a useful basis for developing the list of reasonably foreseeable future projects for evaluating cumulative impacts). Criteria for determining if projects could have regional construction-related impacts includes:
 - Proposed residential developments of more than 500 dwelling units
 - Proposed shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space
 - Proposed commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space
 - Proposed hotel or motel, or both, having more than 500 rooms
 - Proposed industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area
 - Mixed-use projects that include one or more of the specified criteria
 - Projects that would demand an amount of water equivalent to, or greater than, the amount of water that a 500-dwelling-unit project would require

Additional development proposals of similar scale and impact, that are currently unknown, are expected to be proposed, approved, and scheduled for implementation throughout the implementation schedule for the collection system improvements

TABLE 5-1
Reasonably Foreseeable Future Projects

Location	Description of Project
City of Anaheim – Adjacent to Harbor Boulevard and Katella Avenue	Developments Within Anaheim Resort: The Anaheim Resort will include several large hotels and timeshare resorts, a wide variety of restaurants, and a 29-acre garden walk. Some Commercial and Residential Mixed Use projects also will be included.
City of Anaheim – Triangle area generally bound by the Santa Ana River on the east and south, I-5 on the west and south, and Cerritos Avenue on the north.	Developments Within the Platinum Triangle: The Platinum Triangle will be a vibrant 24-hour, high-density, mixed-use, urban environment unique to Orange County that could include up to 9,500 dwelling units, 5 million square feet of office space, and over 2 million square feet of commercial uses.
City of Anaheim – Adjacent to Broadway and Anaheim Boulevards	Downtown Development: The downtown development will be a mixed-use project aimed at revitalizing downtown Anaheim. Live-work condominiums (including lower income housing) will be integrated with retail and commercial space, and some electric and water distribution infrastructure also will be constructed. The project will include 63,765 square feet of commercial development; 1,506 residential units will be created on a total of 57.8 acres.
City of Brea – Northeast corner of Valencia Avenue and Imperial Highway, and southwest corner of Birch Street and Kraemer Boulevard	Two Properties Mixed-Use and Residential Uses: 269 – Single-Family Detached Homes/Condominiums – for active adult 55 and up; 543 – Single-Family Detached Homes/Town Homes – all ages; 58 – Live/Work lofts at Site 1; 115 – Apartments (workforce housing) at Site 2; and Independent and Assisted Living Facility at Site 1. Projected population is 3,500 combining both sites. Number of residential units proposed is 1,335 total. Commercial square footage in Village Core of Planning Area 5 equals 156,800 square feet.
City of Costa Mesa – Adjacent to Sunflower Avenue and Anton Boulevard.	Irvine Apartment Communities: 900 apartment units.
City of Cypress – Katella Avenue and Lexington Drive	Cottonwood Christian Center: 500,000-square-foot Church/Religious Campus. Approximately 30 acres.
City of Fullerton – General area bound by Euclid Street on the east, Beach Boulevard on the west, Rosecrans Avenue on the south, and Imperial Highway on the north.	West Coyote Hills: 760 residential units (579 detached and 181 attached) on 180 acres. Includes neighborhood commercial center, open space, and recreational uses.
City of Fullerton – Adjacent to Harbor Boulevard and Bastanchury Road.	St. Jude Medical Center: Redevelopment and expansion of Medical Center through 2030; redevelopment will increase size from 333 beds and 355,603 square feet to 512 beds and 940,624 square feet.
City of Garden Grove – Brookhurst Street and Garden Grove Boulevard	Brookhurst Triangle: 510 units of housing plus 88,000 square feet of commercial and retail space. The housing will consist of a variety of high-density uses including two 10-story high-rise towers with 60 units each, as well as 3- and 4-story lofts, flats, and townhome-style buildings constructed over parking that is either below or at grade.
City of Huntington Beach – The facility would be located on an 11-acre part of the 22-acre AES Huntington Beach Generating Station facility located at 21730 Newland Street, off Pacific Coast Highway.	Poseidon Desalination Plant: The project, proposed by Poseidon Resources Corporation, consists of the construction and operation of a 50-million-gallon-per-day seawater desalination facility. The facility would consist of seawater intake pretreatment facilities, a seawater desalination plant utilizing reverse osmosis technology, product water storage, two pump stations, materials storage tanks, and 42- to 48-inch-diameter product water transmission pipeline possibly up to 10 miles in length in Huntington Beach and Costa Mesa.

TABLE 5-1 (cont.)
Reasonably Foreseeable Future Projects

Location	Description of Project
City of Huntington Beach – 31-acre site that is bounded by Pacific Coast Highway, First Street, Huntington Street, and Atlanta Avenue.	Pacific City: Pacific City is a proposed development of a vacant land parcel. The request would divide the site into three parcels. One would be for 516 residential condominium units. The other two would be for commercial/retail/restaurant/ entertainment/office/hotel development. The hotel would be a 165-room, 8-story, luxury boutique hotel, spa, and health club with a 12,000-square-foot restaurant located along the southern portion of the property.
City of Orange – Adjacent to State College Boulevard and I-5.	Archstone Gateway Luxury Apartments: 532 rental units.
City of Santa Ana – Parcel bordered by Tenth Street, Broadway, Washington Avenue, and Sycamore Street.	One Broadway Plaza: One Broadway Plaza will be the tallest building in Orange County, consisting of a 37-story, 518,000-square-foot office tower with an eight-level parking structure.
SR-22 (Garden Grove Freeway) – Bound by SR-55 on the east and I-405 on the west.	Garden Grove Freeway (SR-22) Improvement Project: Orange County Transportation Authority, in partnership with Caltrans, is adding capacity to the Garden Grove Freeway (SR-22).
I-5 (Santa Ana Freeway) – Bound on the southeast by SR-91 and the Los Angeles County line on the west.	I-5 Gateway Project: The 4-year project is widening the remaining 2 miles of I-5 in Orange County from the SR-91 to the Los Angeles County line. The I-5 Gateway Project is scheduled to be completed in mid-2010.

5.1.4 Potential Cumulative Impacts

As described in detail in Chapter 3.0, all of the potential impacts associated with the proposed collection system improvement projects are construction related. Specifically, implementation of the proposed collection system improvement projects has the potential for short-term construction impacts to air quality, noise, and transportation and traffic that are significant and unavoidable. Additionally, implementation of the proposed collection system improvement projects has the potential for short-term construction to biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, and public services. These potential impacts, however, can be reduced to a level of insignificance with implementation of the identified mitigation measures.

Each agency approving each discretionary permit, for the list of reasonably foreseeable future projects included in Table 5-1, is expected to ensure that standard mitigation measures to minimize construction-related impacts to less-than-significant levels are incorporated into the conditions of approval. Therefore, with the exception of cumulative short-term construction impacts to air quality, noise, and transportation and traffic, implementation of the proposed collection system improvements and other reasonably foreseeable future projects would not be expected to result in potential cumulative impacts. Impacts associated with operation of the proposed collection system improvements are considered less than significant for all impacts, and would not result in a potential cumulative impact. The following discussion summarizes the potential cumulative impacts that could occur with construction of the proposed sewer improvements in conjunction with the reasonably foreseeable future projects.

Air Quality

Construction-related NO_x emissions would result in significant and unavoidable construction-related air quality impacts. When combined with construction of the reasonably foreseeable future projects, construction emissions also are anticipated to exceed significance thresholds for NO_x. Because air emissions typically are considered on a regional basis, any project being constructed in the general vicinity of the proposed collection system improvement projects during the same construction timeframe likely would contribute to potentially significant cumulative air quality impacts.

Mitigation measures have been identified for the proposed collection system improvement projects to reduce construction-related impacts to air quality, although impacts might continue to be significant after mitigation. These same mitigation measures also would help to reduce potential cumulative significant impacts. It is anticipated that similar construction air emissions impact mitigation measures would be incorporated into the conditions of approval for the reasonably foreseeable future projects. These mitigation measures would help to reduce potentially significant cumulative impacts to air quality; although short-term cumulative impacts to air quality would remain significant after mitigation.

Biological Resources

Construction of the proposed sewer improvement projects could result in significant impacts requiring mitigation to sensitive biological resources, including special-status wildlife and plant species. However, mitigation measures have been identified to reduce potential construction-related biological resources impacts to less than significant. These same mitigation measures also would help reduce potentially significant cumulative impacts. It is anticipated that similar mitigation measures for construction-related biological resources impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects. Therefore, potential cumulative impacts to biological resources would be less than significant.

Cultural Resources

Construction of the proposed sewer improvement projects could result in significant impacts requiring mitigation to sensitive cultural resources. However, mitigation measures have been identified to reduce potential construction-related cultural resources impacts to less than significant. These same mitigation measures also would help reduce cumulative significant impacts. It is anticipated that similar mitigation measures for construction-related cultural resources impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects. Therefore, potential cumulative impacts to cultural resources would be less than significant.

Geology and Soils

Implementation of the proposed sewer improvement projects could result in significant impacts requiring mitigation to geology and soils. However, mitigation measures have been identified to reduce potential geology and soils impacts to less than significant. These same mitigation measures also would help reduce potentially significant cumulative impacts. It is anticipated that similar mitigation measures for geology and soils impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects.

Therefore, potentially significant cumulative impacts to geology and soils would be less than significant.

Hazards and Hazardous Materials

Implementation of the proposed sewer improvement projects could result in significant hazards and hazardous materials-related impacts requiring mitigation. However, mitigation measures have been identified to reduce potential hazards and hazardous materials related impacts to less than significant. These same mitigation measures also would help reduce potentially significant cumulative impacts. It is anticipated that similar mitigation measures for hazards and hazardous materials-related impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects. Therefore, potential cumulative hazards and hazardous materials-related impacts would be less than significant.

Hydrology and Water Quality

Implementation of the proposed sewer improvement projects could result in significant hydrology and water quality impacts requiring mitigation. However, mitigation measures have been identified to reduce potential hydrology and water quality impacts to less than significant. These same mitigation measures also would help reduce potentially significant cumulative impacts. It is anticipated that similar mitigation measures for hydrology and water quality impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects. Therefore, potential cumulative hydrology and water quality impacts would be less than significant.

Land Use and Planning

Implementation of the proposed sewer improvement projects could result in significant land use and planning impacts requiring mitigation. However, mitigation measures have been identified to reduce potential land use and planning impacts to less than significant. These same mitigation measures also would help reduce potentially significant cumulative impacts. It is anticipated that similar mitigation measures for land use and planning impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects. Therefore, potential cumulative land use and planning impacts would be less than significant.

Noise

Construction-related noise could result in significant and unavoidable construction-related noise impacts. Should construction of the reasonably foreseeable future projects also occur at night in the vicinity of and concurrent with construction of proposed collection system improvement projects, such projects would likely contribute to potentially significant cumulative noise impacts.

Mitigation measures have been identified for the proposed collection system improvement projects to reduce construction-related impacts to noise, although impacts might continue to be significant after mitigation. These same mitigation measures also would help to reduce potentially significant cumulative impacts. It is anticipated that similar construction noise impact mitigation measures would be incorporated into the conditions of approval for the reasonably foreseeable future projects. These mitigation measures would help to reduce

potentially significant cumulative impacts to noise; although short-term potential cumulative impacts to noise likely would remain significant after mitigation.

Population and Housing

The proposed Plan focuses on improvements to the Sanitation District's regional wastewater collection system, given a projected level of growth that would occur with or without implementation of its policies or actions. This Plan has been developed to reduce the impact of planned growth within Orange County and provide beneficial improvements to regional wastewater conveyance facilities. Implementation of the proposed Plan provides for improvements to the regional collection system that would address existing and projected deficiencies in the collection system. These projected deficiencies would not be addressed under the No Project condition. Urban growth and service needs identified by local agencies occurs in their General plans and local agencies must evaluate the effects of planned growth on wastewater infrastructure, as well as opportunities to manage growth and improve the local jobs/housing balance. Proposed improvements associated with capacity deficiencies would accommodate planned growth and would reduce surcharging (i.e., hydraulic overload) in sewers during wet weather. Therefore, potential cumulative population and housing impacts would be less than significant.

Public Services

Implementation of the proposed sewer improvement projects could result in significant public services impacts requiring mitigation. However, mitigation measures have been identified to reduce potential public services impacts to less than significant. These same mitigation measures also would help reduce potentially significant cumulative impacts. It is anticipated that similar mitigation measures for public services impacts would be incorporated into the conditions of approval for the reasonably foreseeable future projects. Therefore, potential cumulative public services impacts would be less than significant.

Transportation and Traffic

Construction-related road closures would result in significant and unavoidable construction-related transportation and traffic impacts. Should construction of reasonably foreseeable future projects also occur in the vicinity of and concurrent with proposed collection system improvement projects with construction-related road closures, such projects would likely contribute to potentially significant cumulative transportation and traffic impacts.

Mitigation measures have been identified for the proposed collection system improvement projects to reduce construction-related transportation and traffic impacts, although impacts might continue to be significant after mitigation. These same mitigation measures also would help to reduce potentially significant cumulative impacts. It is anticipated that similar construction transportation and traffic impact mitigation measures would be incorporated into the conditions of approval for the reasonably foreseeable future projects. These mitigation measures would help to reduce potentially significant cumulative impacts to transportation and traffic; although short-term cumulative impacts to transportation and traffic likely would remain significant after mitigation.

5.2 Growth Inducement

Section 15126.2(d) of the CEQA Guidelines requires that growth-inducing impacts of a project be discussed in an EIR. Growth inducement is related to the ways in which the proposed Plan could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Under CEQA, growth inducement is not necessarily considered detrimental, beneficial, or environmentally significant. Typically, the growth-inducing potential of a project is considered significant if it fosters growth or concentration of population in excess of what is assumed in relevant master plans, land use plans, or in projections made by regional planning agencies. Significant growth impacts also could be manifested through the provision of infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

New employees from commercial and industrial development and redevelopment and new population from residential development represent direct forms of growth. These direct forms of growth have a secondary effect of expanding the size of local markets and including additional economic activities in the area.

A project could indirectly induce growth by reducing or removing barriers to growth, by creating conditions that attract additional residents or new economic activity, or by providing a catalyst for future unrelated growth in the area. Examples of development that would indirectly facilitate growth include the installation of new roadways or the construction or expansion of water delivery/treatment facilities.

Growth inducement also may be viewed in relation to planned or unplanned development. A project could remove barriers, provide access, or eliminate constraints and thereby facilitate growth that is already approved and anticipated by regional and local plans. This planned growth would be reflected in land use plans developed and approved with underlying assumptions that an adequate supporting sewer collection system would be constructed or upgraded. This type of project would accommodate or facilitate growth.

A project also may remove barriers, provide new access, or otherwise encourage growth that is not assumed as planned growth included in the general or specific plans of an affected area. This unplanned growth could affect areas that are currently designated for open space, agriculture, or other nonurban purposes, and generate new growth pressure to develop, or develop at higher densities, because of the access changes. Over the long term, a project may affect already developed areas by increasing pressure to recycle or redevelop land uses at increasing densities.

A number of factors could influence the amount, rate, location, and direction of growth (planned or unplanned) in a project area. These could include:

- Perceived quality of life
- General economic conditions

- Specific market conditions for housing, employment, and related services
- Availability and condition of infrastructure ranging from schools to transportation systems
- Local and regional growth management and land use policies

The following sections address the requirements of CEQA that an EIR discusses. Discussions also address whether the proposed Plan, directly or indirectly, could lead to economic, population, or housing growth.

5.2.1 Thresholds of Significance

A project would have a significant effect on regional growth based on the following:

- The degree to which the project would cause growth (i.e., new housing or employment generators) or accelerate development in an undeveloped area that exceeds project/planned levels for the year of project occupancy/buildout
- Whether or not the project would introduce unplanned infrastructure that was not previously evaluated in an adopted Community Plan or General Plan

5.2.2 Existing Environmental Setting

The Orange County Sanitation District provides wastewater services to approximately 2.3 million people within a 470-square-mile area of northern and central Orange County. The Sanitation District operates and maintains a 410-mile-long regional wastewater conveyance system, 17 sewage pumping facilities, and two wastewater treatment plants. The Sanitation District also operates and maintains local sewers in the City of Tustin and in unincorporated areas north of Tustin. The regional system conveys sewage from local sewer lines in 21 cities and 3 special districts to the two regional Sanitation District treatment plants. The two treatment plants receive wastewater from 11 major trunk sewers.

The Sanitation District service area is primarily urbanized. Only a few unincorporated areas on the urban fringe and natural coastal and hilly areas remain relatively undeveloped. Land use types within the service area generally consist of Residential, Transportation/Utility, Commercial, Industrial, Institutional, Recreational, and Vacant (SCAG, 2000). The existing sewers, and proposed collection system improvements, generally follow city street easements and occur within existing rights-of-way.

As stated in Section 3.10, future populations for the Sanitation District service area have been identified in the Orange County Sanitation District Strategic Plan Update (April 2006) and are based on the 2004 Orange County Projections (2004 OCP) developed by the Center for Demographic Research. Population projections for the entire Sanitation District service area anticipate an increase of approximately 12 percent between 2005 and 2030.

5.2.3 Impacts

Based on the estimate of workers included in Table 2-4 and the preliminary construction schedule included in Table 2-5, the proposed Plan could require up to 50 construction workers during periods of peak construction. The vast majority of workers are expected to live and work in the area. However, if all workers were to move to the area for employment,

the population of the Sanitation District service area, as of the 2000 Census, would increase 0.002 percent, which would be inconsequential and would have no impacts associated with temporary increase of population, housing, geographical distribution, and supply-demand relationships.

In the long term, the proposed Plan would not include new onsite staff; existing Sanitation District staff or contractors would provide maintenance and operation. Because the proposed Plan provides improvements only to existing facilities and requires no new onsite operating staff, it would not impact population, housing, geographic distribution, or supply-demand relationships. The level of proposed Plan related changes would not alter the local, regional, or other adopted population growth policies because no new onsite staff would be required.

The quantity and distribution of population in the Sanitation District service area affect housing, the economy, the environment, infrastructure use, and demand on public services. Thus, to respond to and plan for future population, the County of Orange General Plan and the SCAG Regional Comprehensive Plan and Guide include forecasts of population and housing trends. Because projections are used to plan the infrastructure and level of service required to support the future population, actual growth in excess of the projections can lead to deficiencies.

The Sanitation District completed a capacity analysis of its trunk sewer system as part of its 2006 Strategic Plan Update (Job No. J-101), which supersedes the collection system element of the Sanitation District 1999 Strategic Plan. The capacity analysis, based on recent growth projections for Orange County and simulations of flows in the Sanitation District collection system under dry- and wet-weather conditions, identified portions of the collection system with potential deficiencies in capacity through 2030.

The proposed Plan focuses on improvements to the Sanitation District's regional wastewater collection system, given a projected level of growth that would occur with or without implementation of its policies or actions. This Plan has been developed to accommodate planned growth within the Sanitation District service area and provide beneficial improvements to regional wastewater conveyance facilities. Implementation of the proposed Plan provides for improvements to the regional collection system that would address existing and projected deficiencies in the collection system. Local agencies, including Cities or the County, must evaluate the effects of planned growth on wastewater infrastructure, as well as opportunities to manage growth and improve the local jobs/housing balance. Urban growth and service needs are described by local agencies in their General Plans and the impacts of planned growth on existing infrastructure are analyzed in Master Plans and EIRs. In this regard, environmental review has occurred or would occur in conjunction with each jurisdiction's approval of its General Plan, General Plan updates, or individual development projects. For example, environmental impacts, including growth inducing impacts, within the Metro East Mixed Use Overlay Zone in the City of Santa Ana have been analyzed in the EIR for the Metro East Mixed Use Overlay Zone (SCH# 2006031041).

As stated herein, the proposed improvements associated with sewer capacity deficiencies would accommodate planned growth and reduce surcharging (that is, hydraulic overload) in sewers, primarily during wet weather. Consequently, the proposed Plan is intended to

match and adequately serve the growth planned and approved through the land use jurisdictions in the service area, including Cities or the County. While the proposed Plan accommodates planned growth within the Sanitation District service area, it would not induce growth and would not result in significant growth inducing impacts.

5.2.4 Mitigation

Because the proposed plan would not result in any significant growth-inducing impacts under the CEQA criteria, no mitigation measures are required.

5.3 Significant Irreversible Environmental Effects

The proposed Plan consists of improvements to the regional collection system that would address existing and projected deficiencies in the collection system. In addition to these major improvements, the proposed Plan includes repairs, replacements, and minor modifications to collection system facilities.

Materials and energy necessary to implement the proposed Plan would be irreversibly committed. Construction of the proposed sewer improvements would require commitment of concrete, steel, asphalt, piping, and other related materials. Construction of the proposed sewer improvements also would require the commitment of gasoline and diesel fuel. Sufficient quantities of these resources exist in the region, and these impacts are not expected to be significant.

The long-term operation of the proposed Plan facilities would require minimal continued commitment of natural resources for maintenance activities. However, the proposed Plan would result in a long-term positive impact on the environment, particularly water quality and sanitary health.

blank page

6.0 Preparers and Contributors

Orange County Sanitation District

John Linder - Engineering Manager

Jim Burror - Engineering Supervisor

Ann Tobin - Engineer

Doug Rulison - Senior Engineering Data Management Specialist

IPMC

Matt Gordon - Project Manager

Jennifer Scholl - Senior Technical Oversight

Crystahl Taylor - Associate Planner

John Frohning - Staff Air Quality Specialist

Farshad Farhang - Senior Acoustics Specialist

Kim Waite - Professional Geologist

James Gorham - Senior Biologist

Loren Bloomberg - Senior Transportation Engineer

John El Khoury - Staff Transportation Engineer

Dana Larson - Staff Scientist

Tom Faludy - Associate GIS Developer

Pam Nelson - Technical Publishing Specialist

Kim Powers - Technical Publishing Specialist

Linda Wright - Document Publication Specialist

Travis Bailey - Graphic Designer

blank page

7.0 References

- California Department of Conservation. 2001.
- Center for Demographic Research. 2004. *Orange County Projections*.
- County of Orange. 2004. *General Plan. Resources and Development Management Department. Board of Supervisors Resolution 04-106*. April.
- Cunniff, Patrick. 1977. *Environmental Noise Pollution*.
- Fenenga, F. 1953. The Weights of Chipped Stone Points: A Clue to their Functions. *Southwestern Journal of Anthropology*. 9(3):309-323. Albuquerque.
- Orange County Sanitation District. 2006. *Budget Book Fiscal Years 2006-07 & 2007-08*.
- Orange County Sanitation District. 2006. *Collection System Model and Strategic Plan Update Job No. J-101*. April.
- Orange County Sanitation District. 1999. *Program Environmental Impact Report. Orange County Sanitation District 1999 Strategic Plan*. June.
- Orange County Transportation Authority (OCTA). 2006. *Draft Program Environmental Impact Report. Long Range Transportation Plan*. January.
- Orange County Water District and Orange County Sanitation District. 1998. *Program Environmental Impact Report/Tier 1 Environmental Impact Statement, Groundwater replenishment System*. November.
- Southern California Association of Governments (SCAG). 2000. *Land Use Data*.
- South Coast Air Quality Management District (SCAQMD). 2003. *Air Quality Management Plan*. August.
- SCAQMD. 1993. *CEQA Air Quality Handbook*.
- SCAQMD and SCAG. 1989. *Final 1989 Air Quality Management Plan*. March.
- Sunset Beach Sanitary District. 2005. *Sewer Master Plan 2005*.
- United States Army Corps of Engineers (USACE). *USACE Water Control Manuals*. www.spl.usace.army.mil/resreg/htdocs
- United States Census Bureau. *2000 Census Data*.
- Wallace, W.J. 1955. "A Suggested Chronology for Southern California Coastal Aquatic Archaeology." *Southwestern Journal of Anthropology*. 11:214-230. Albuquerque.
- Warren, C.N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory of the Western United States*, C. Irwin-Williams, ed. *Eastern New Mexico Contributions in Anthropology*. 1(3):1-14. Portales.

blank page

Projects

01-101

01-17

02-49

02-52

02-65

02-71

03-55

03-58

03-59

03-60

05-47

05-61

05-63

05-

06-17

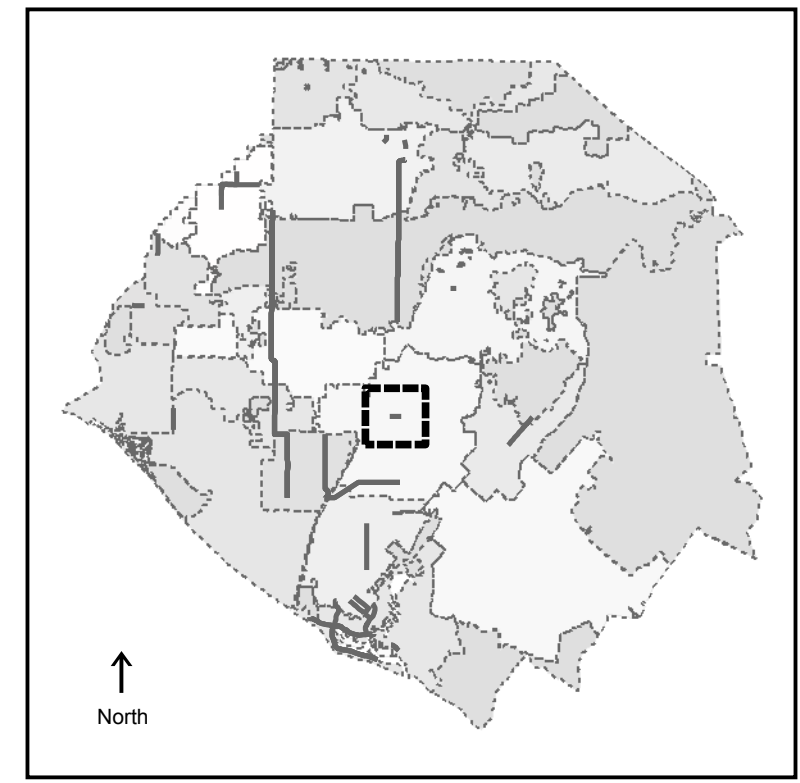
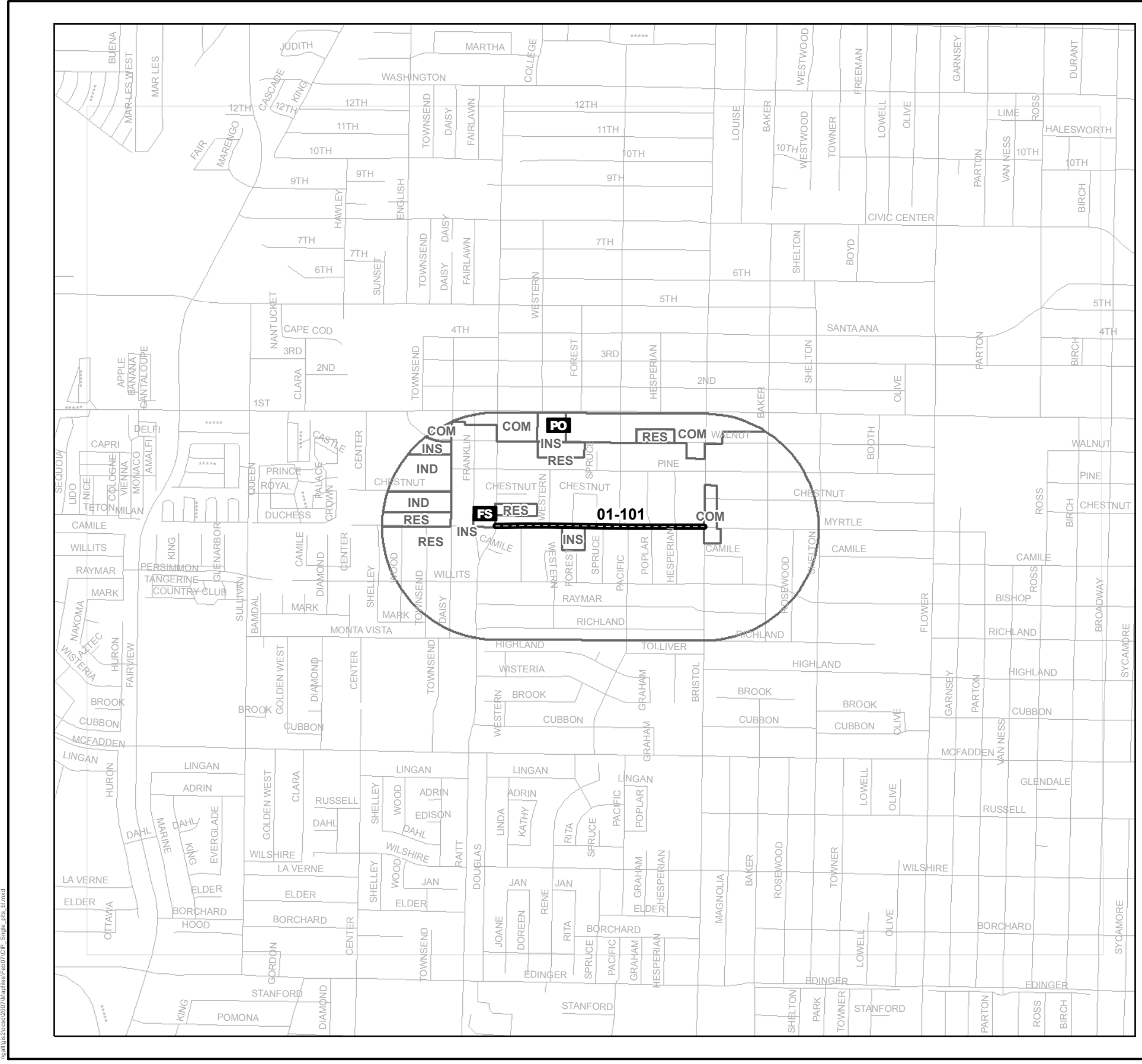
06-18

07-60

07-62

11-25

Appendix A
Maps – Land Use and Sensitive Receptors
by Proposed Improvements

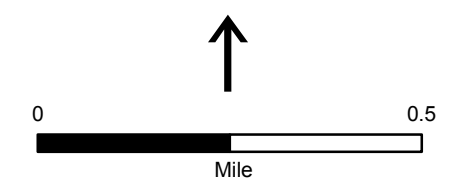


**LAND USES AND SENSITIVE RECEPTORS
WITHIN A 0.25-MILE BUFFER OF PROJECTS**

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

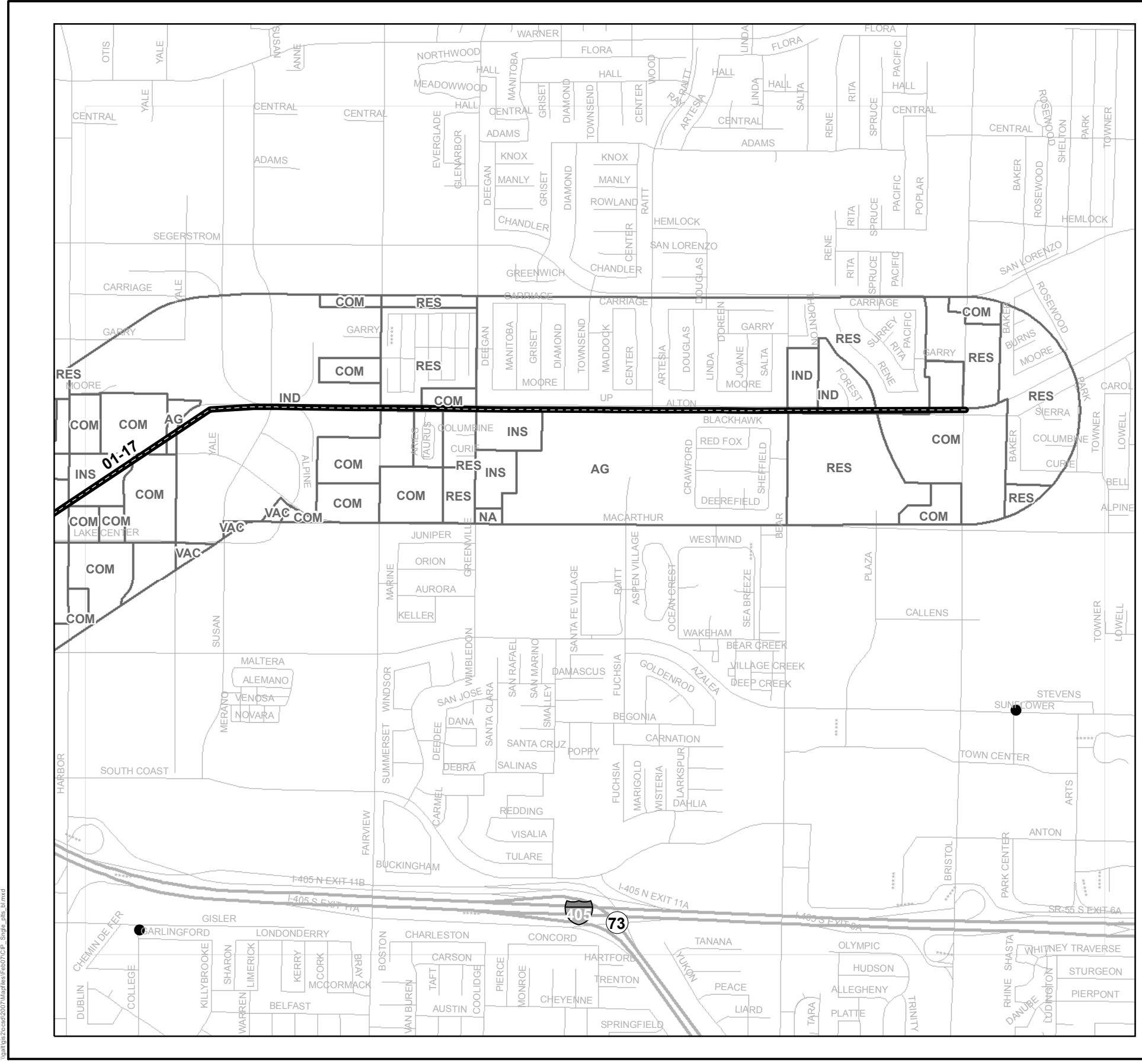
OCSD FACILITIES

- Pump Stations
- Proposed Collection System Improvement
- ▨ Treatment Plant



\\path\2025\02\07\MapFiles\Facilities\CP_Suppl_01a.mxd

Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

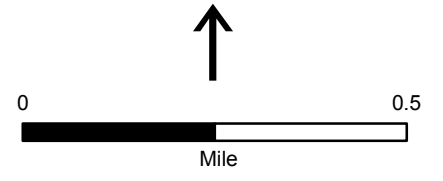


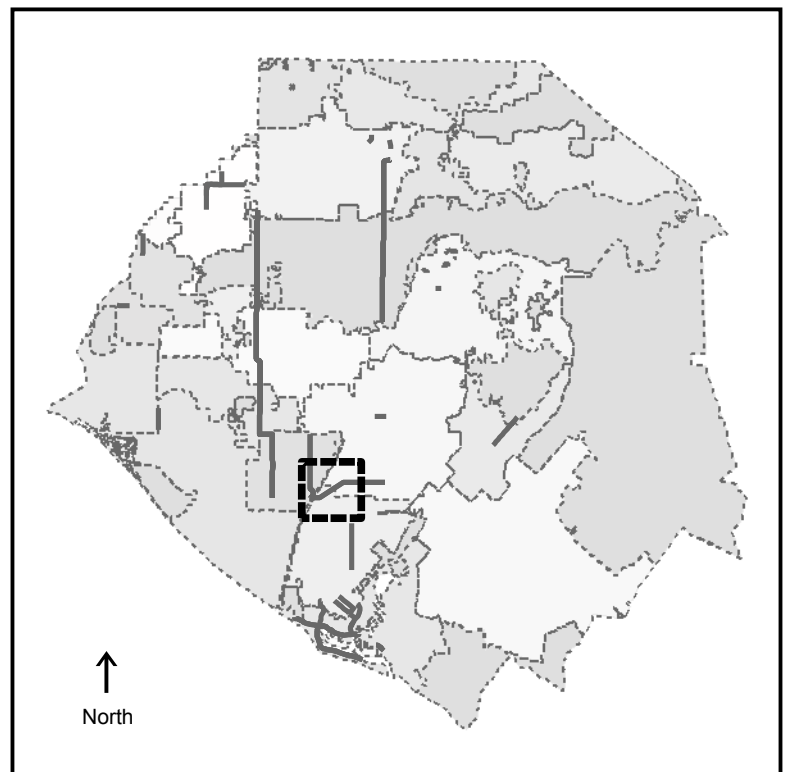
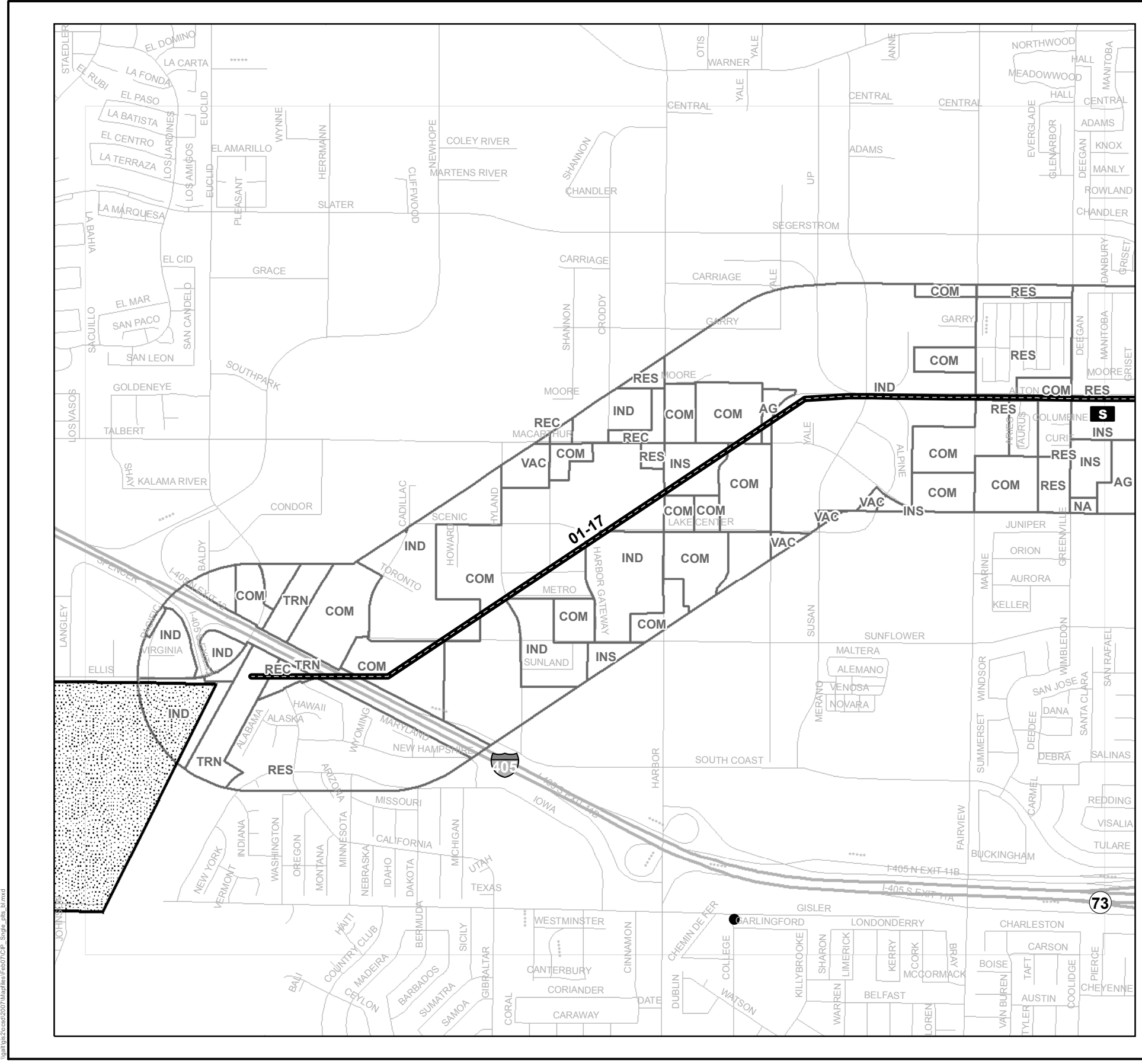
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



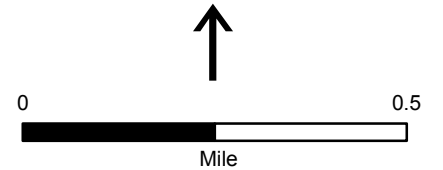


LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

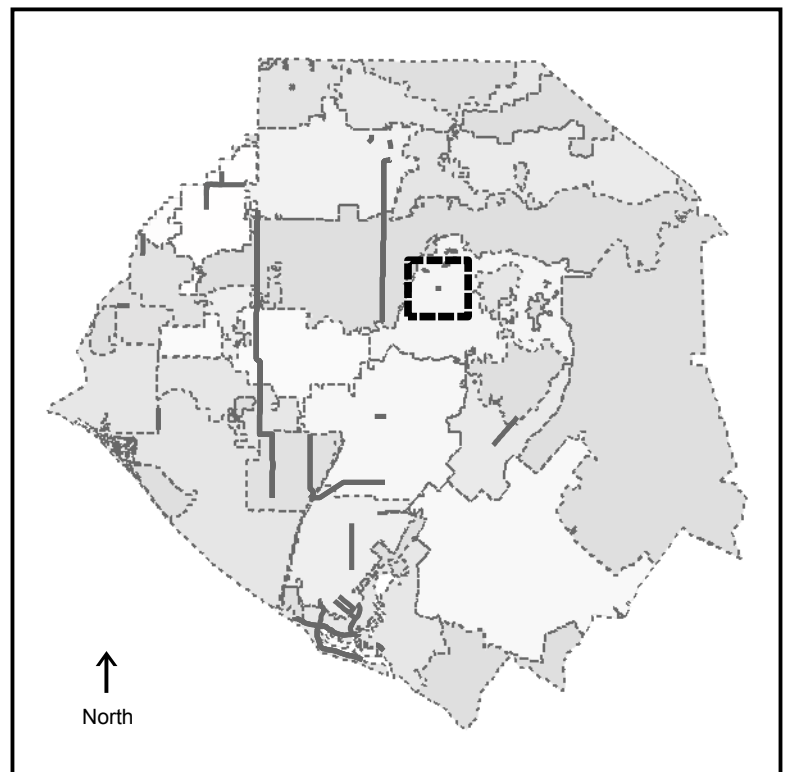
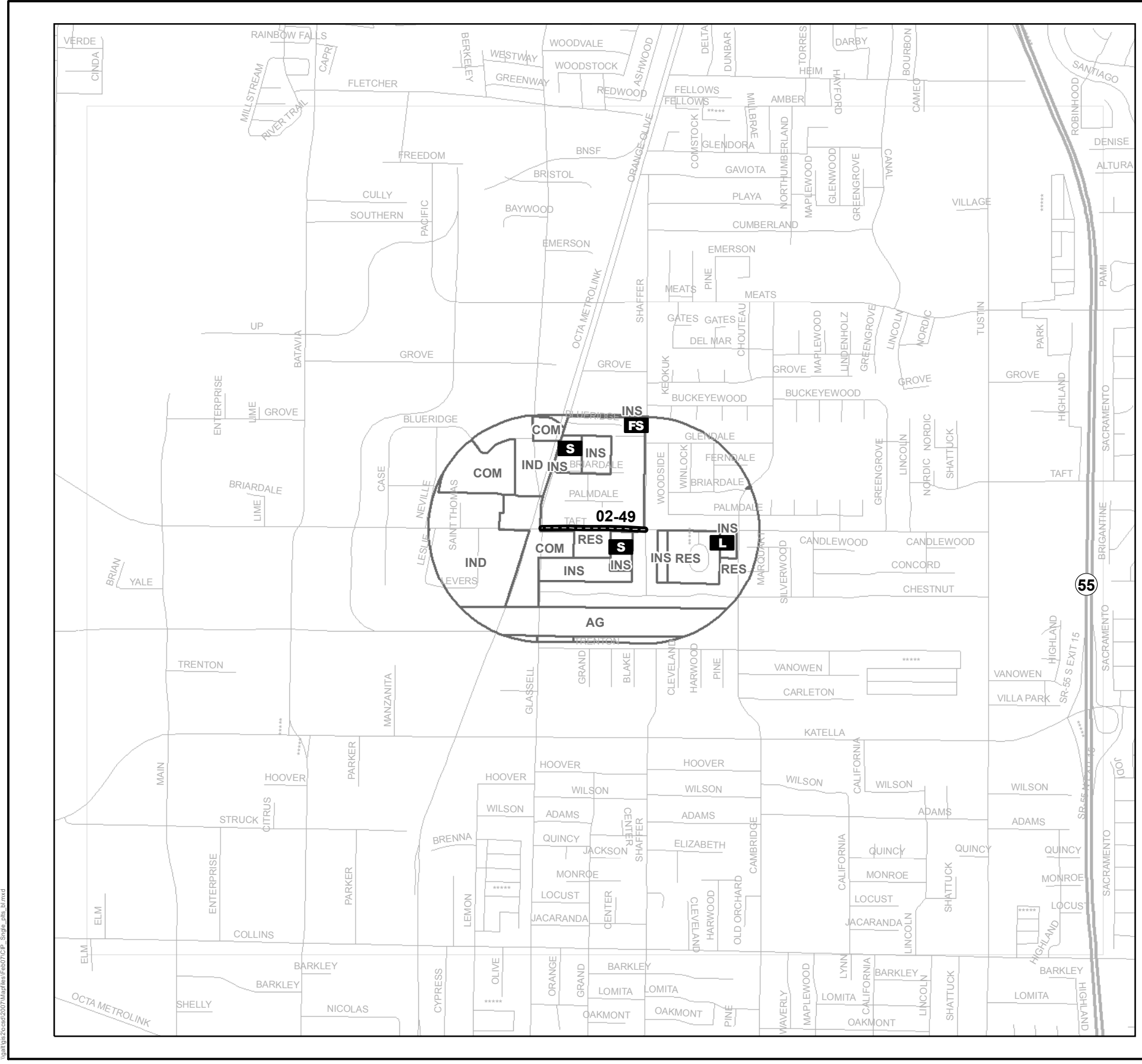
- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

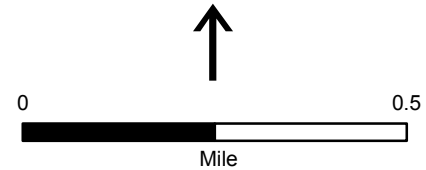


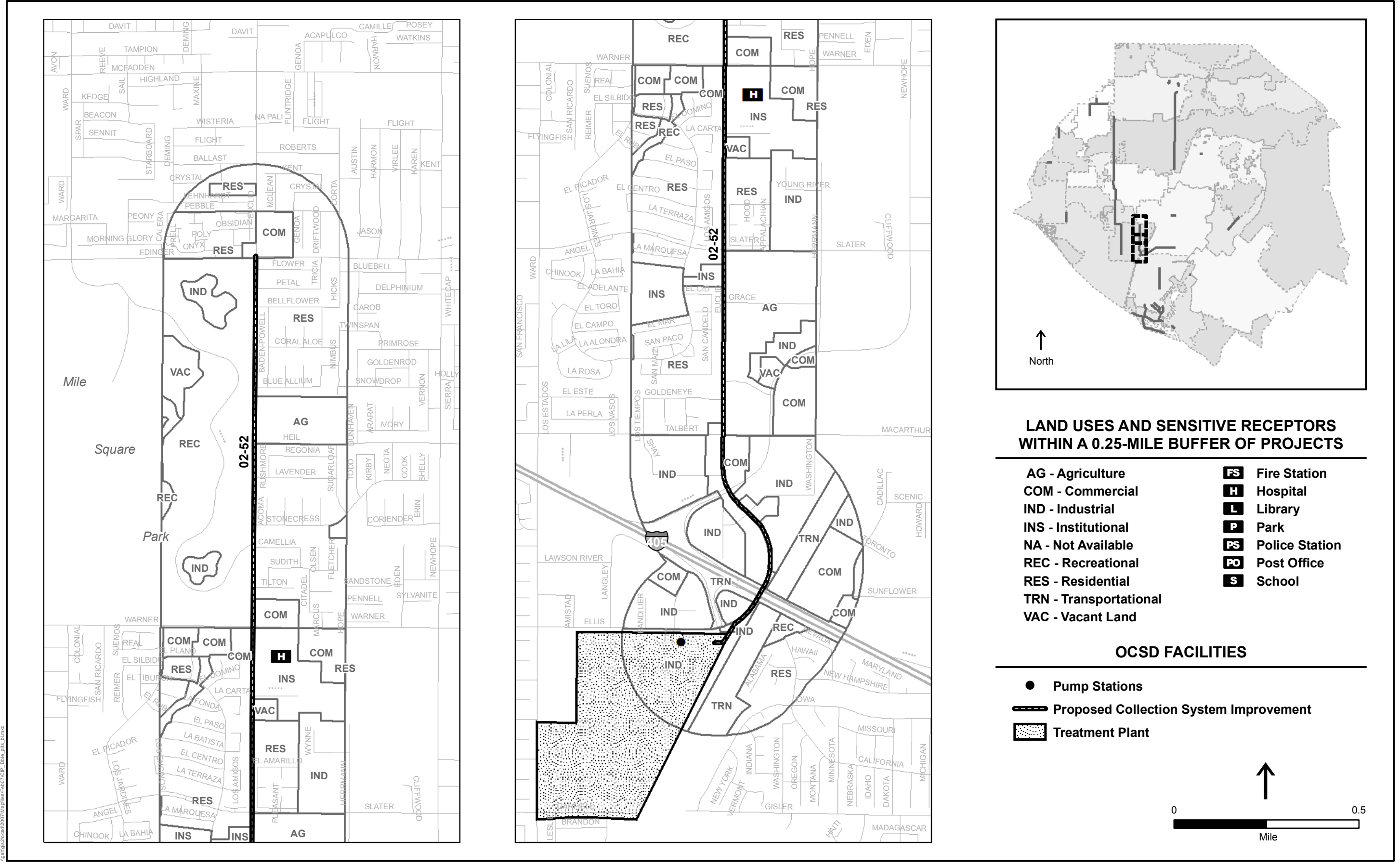
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

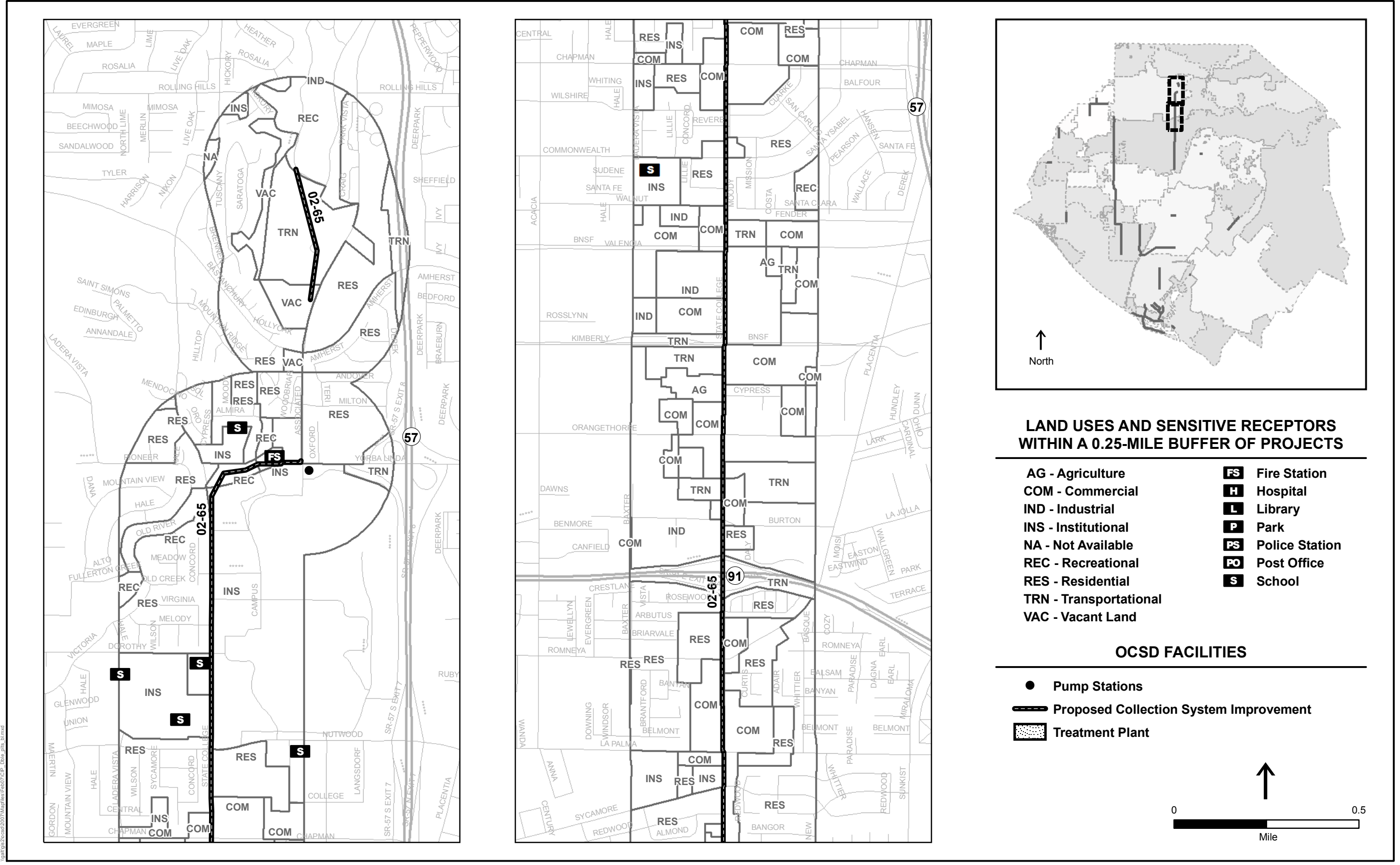
OCSD FACILITIES

- Pump Stations
- Proposed Collection System Improvement
- Treatment Plant





Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

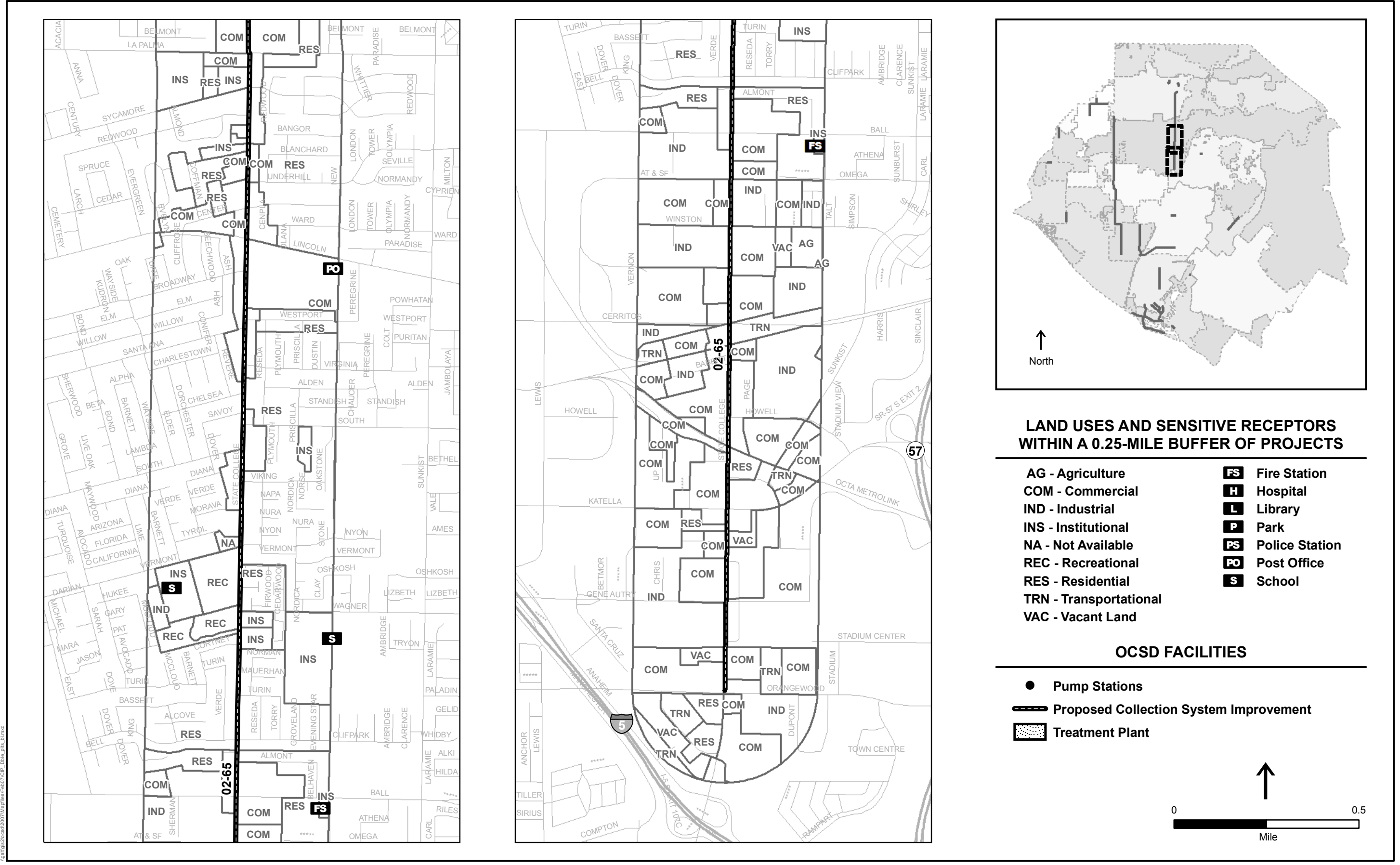


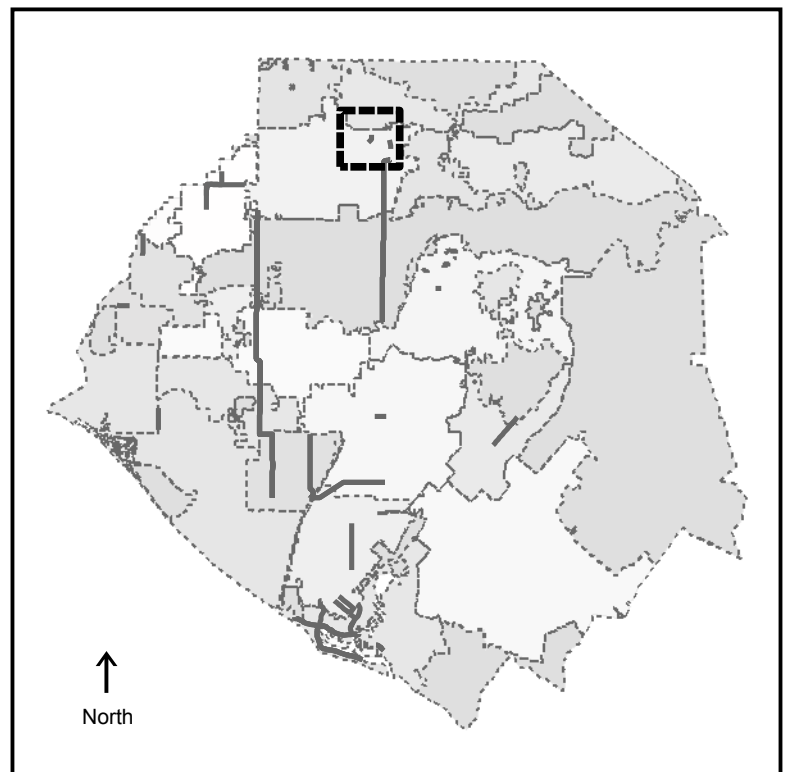
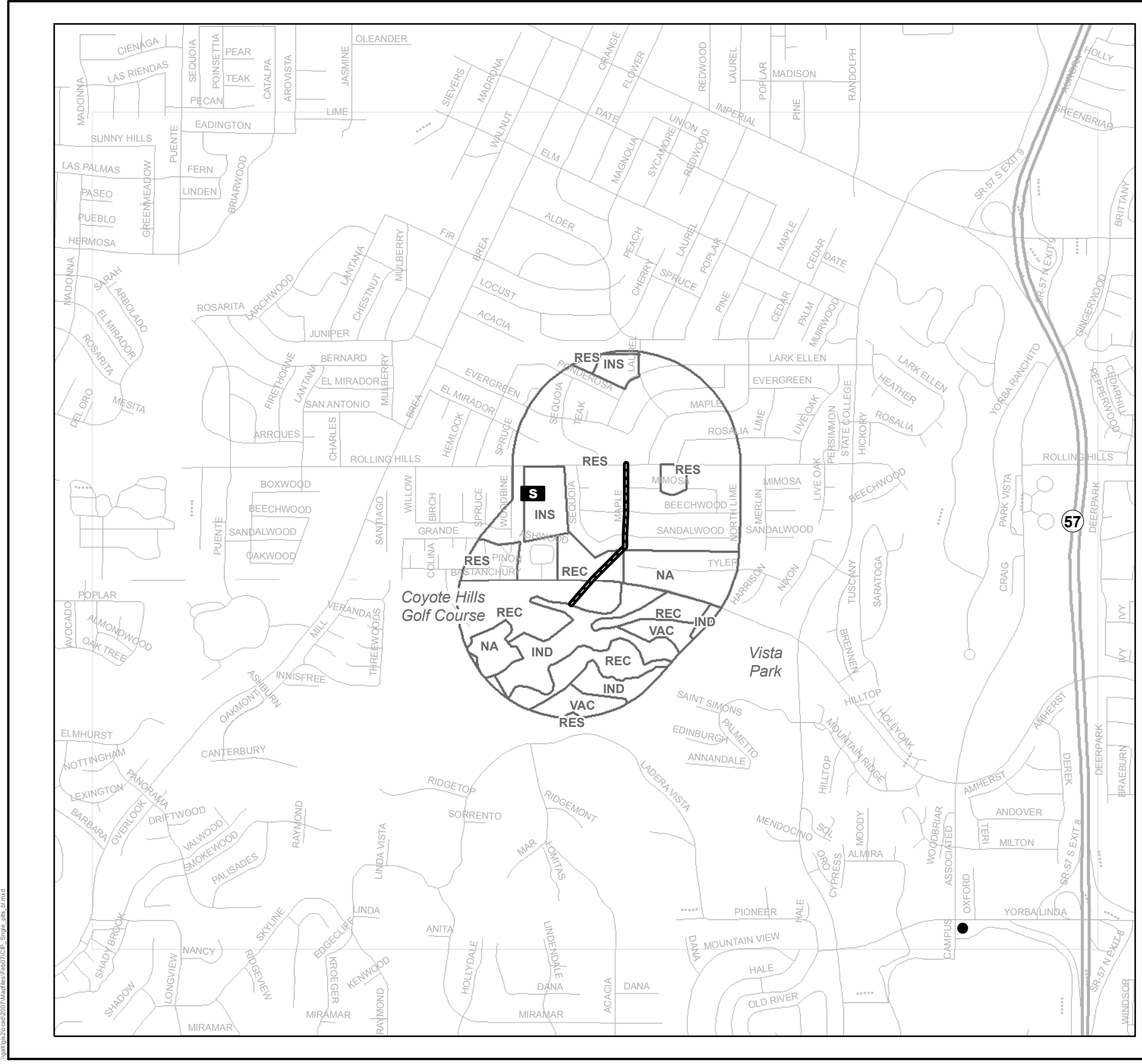
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
 - Proposed Collection System Improvement
 - Treatment Plant
- 0 0.5
Mile



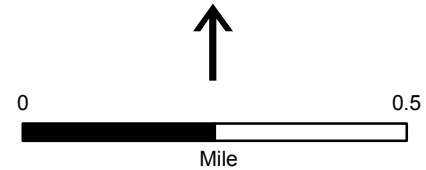


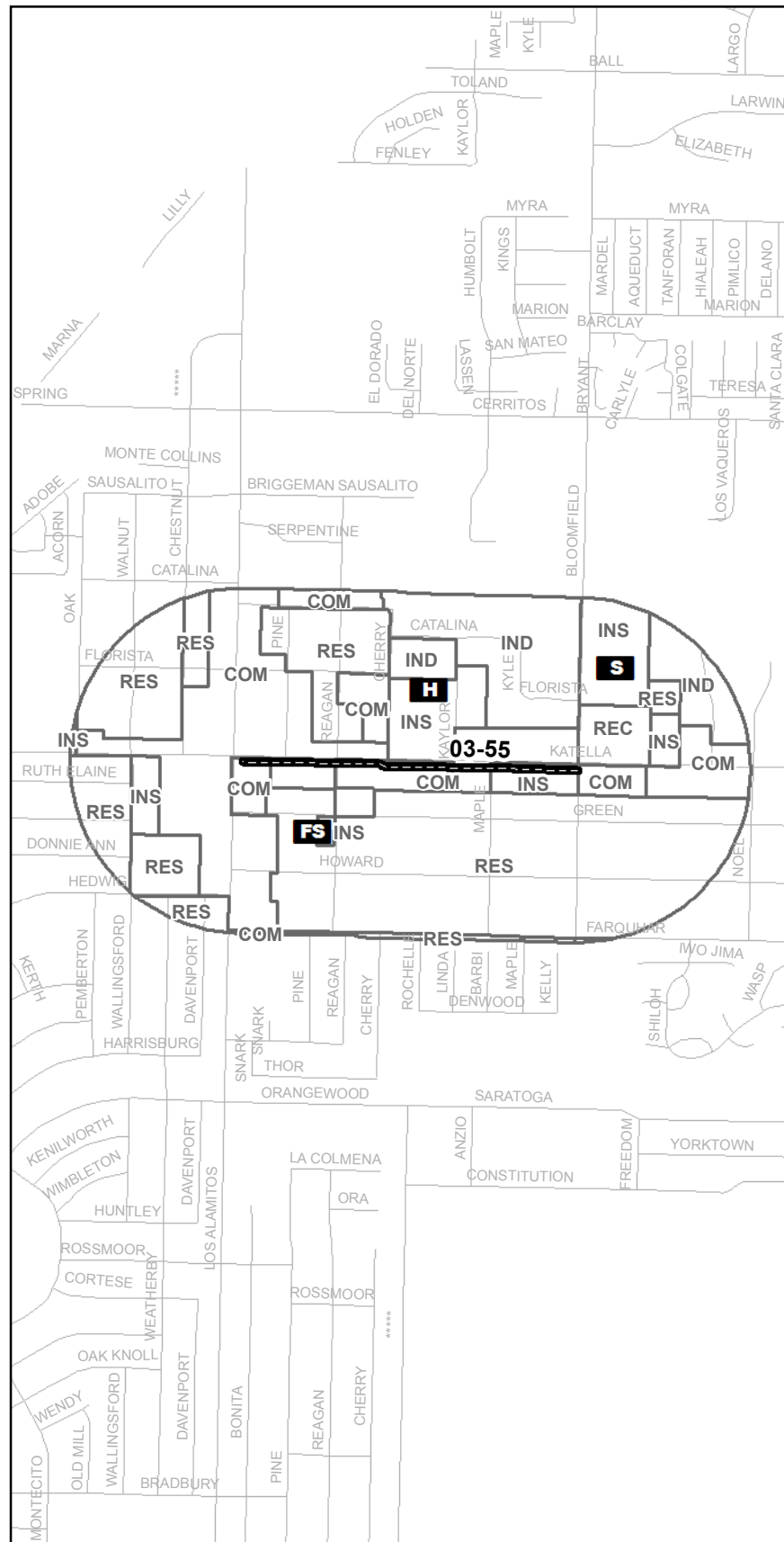
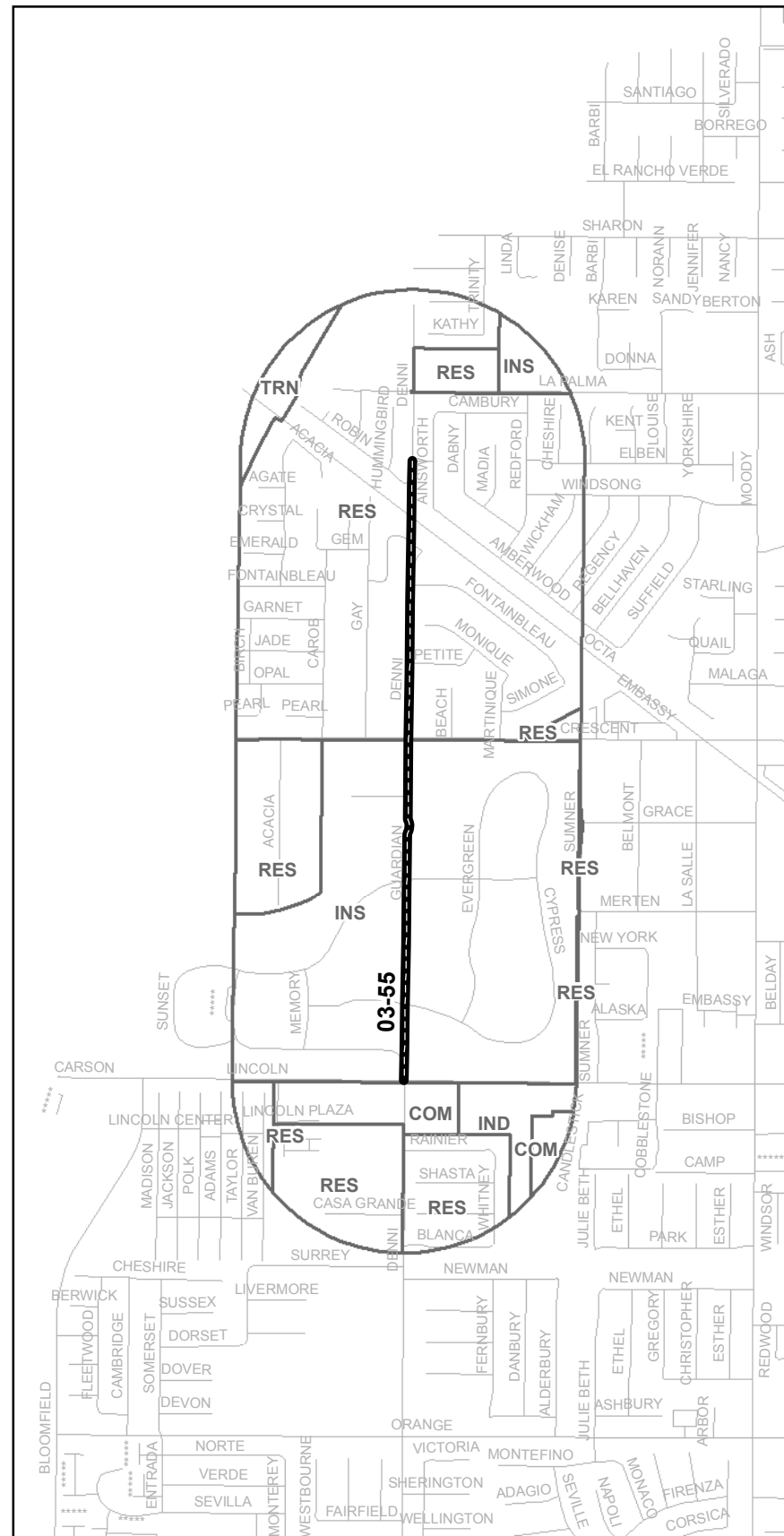
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant





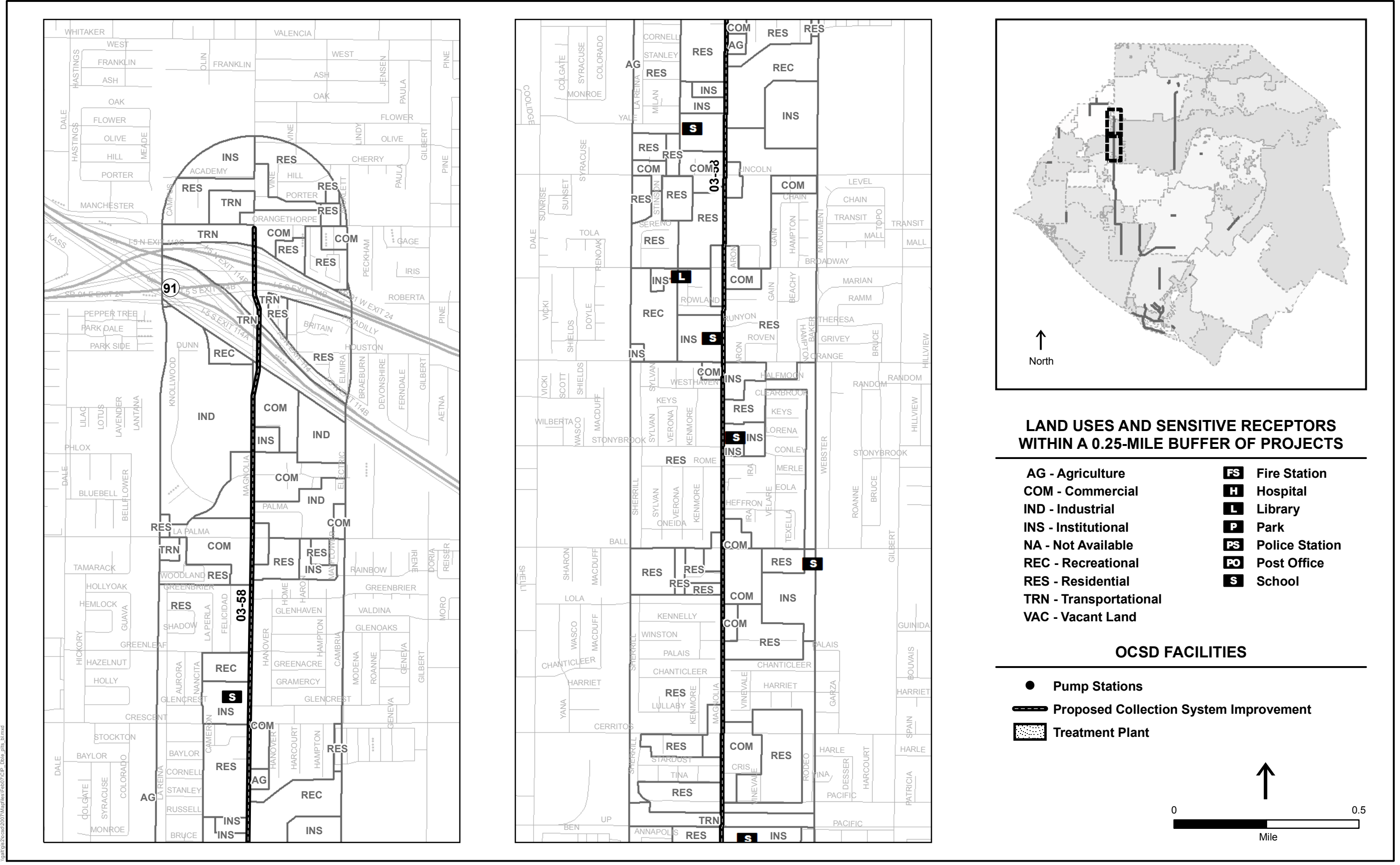
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
 - Proposed Collection System Improvement
 - ▨ Treatment Plant
- 0 0.5
Mile

\\path\2025\2025\07\Map\Map\Facilities\03-55.mxd

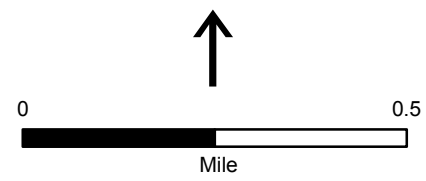


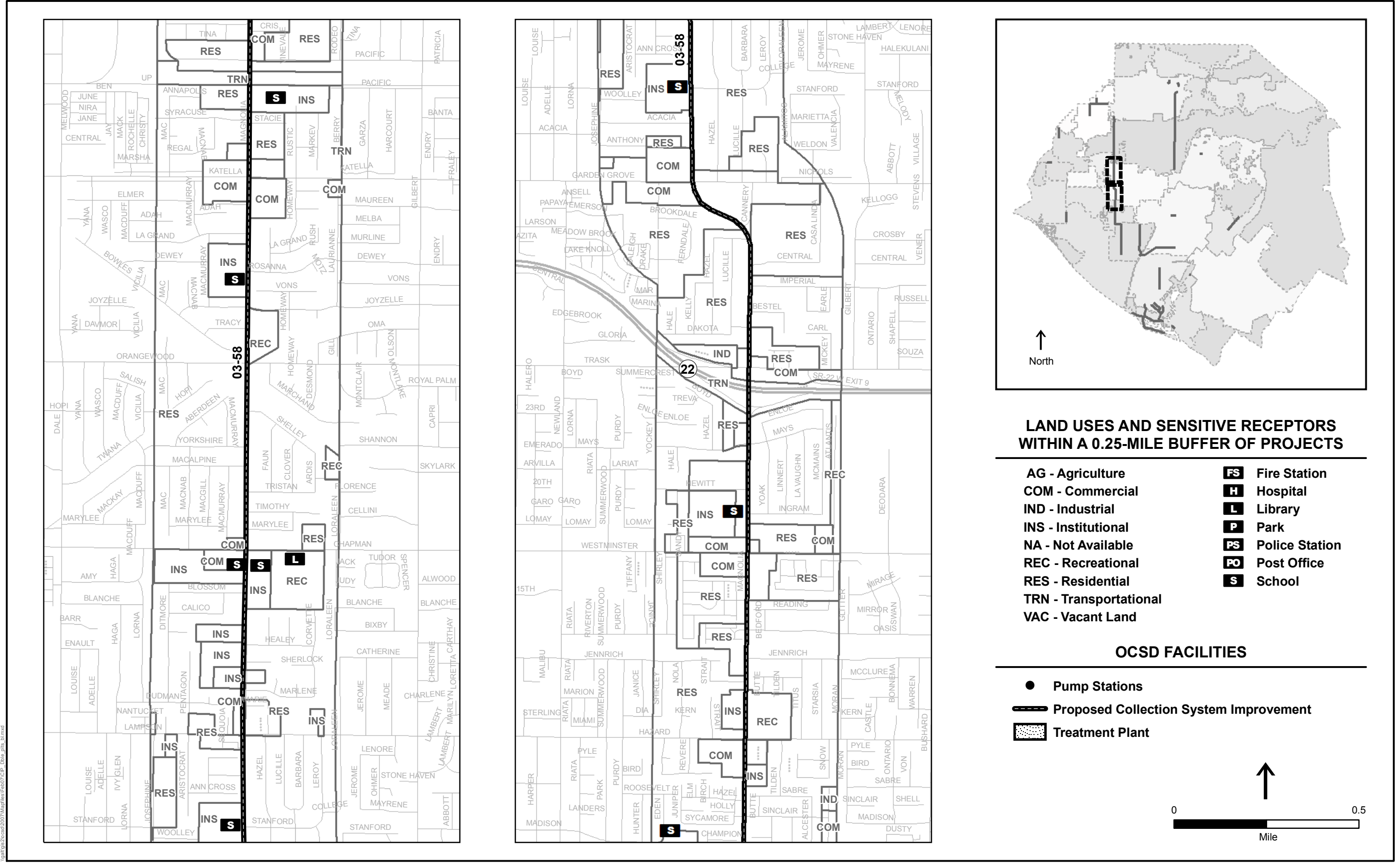
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

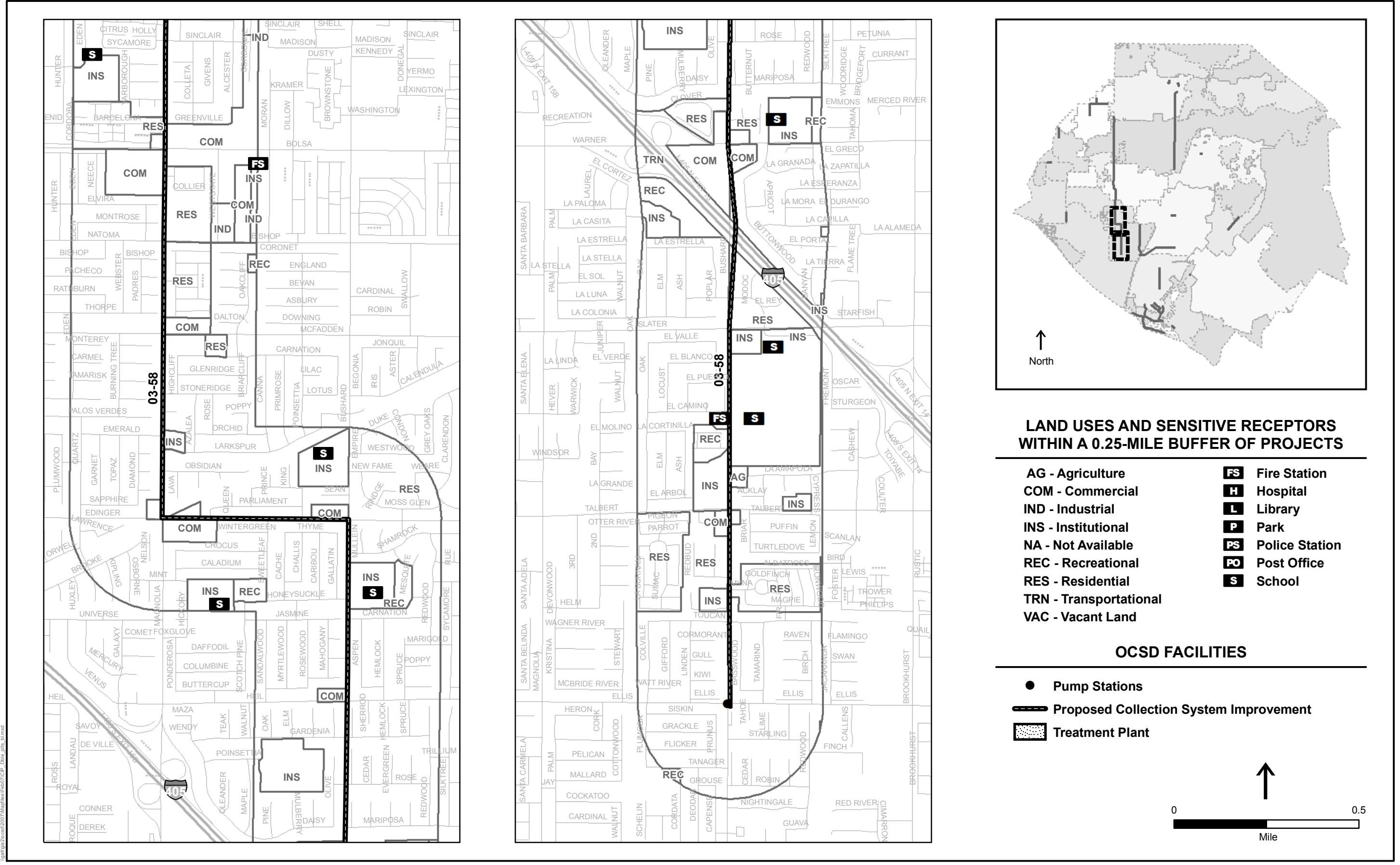
- Pump Stations
- Proposed Collection System Improvement
- ▨ Treatment Plant





\\path\p2\ced\2007\Map\Map\Fac07\CP_Data\pln_b1.mxd

Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

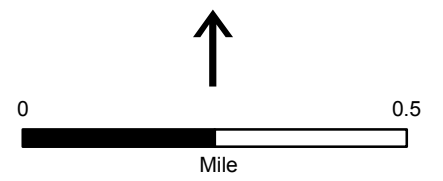


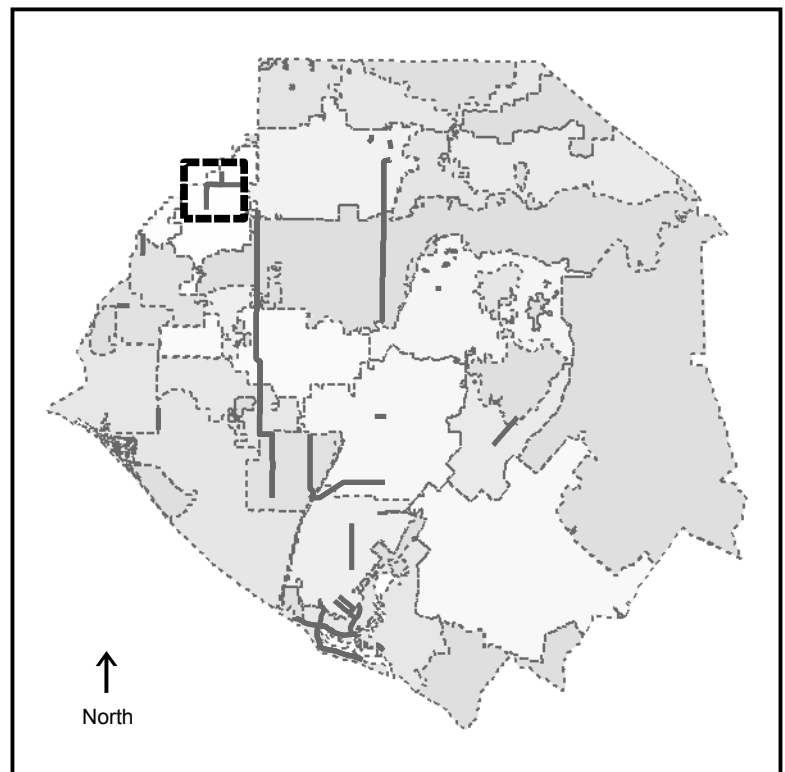
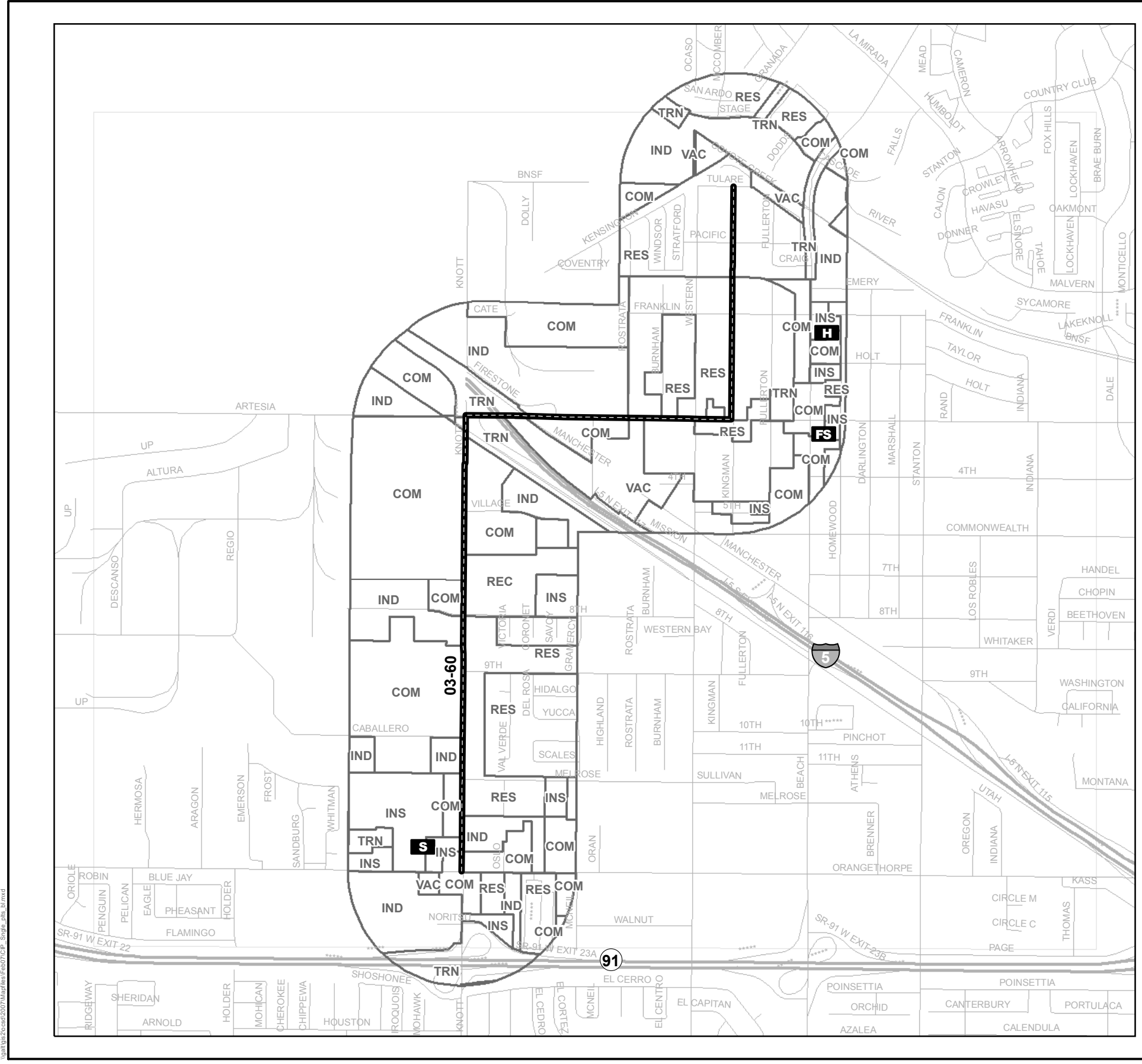
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



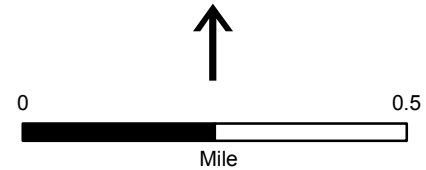


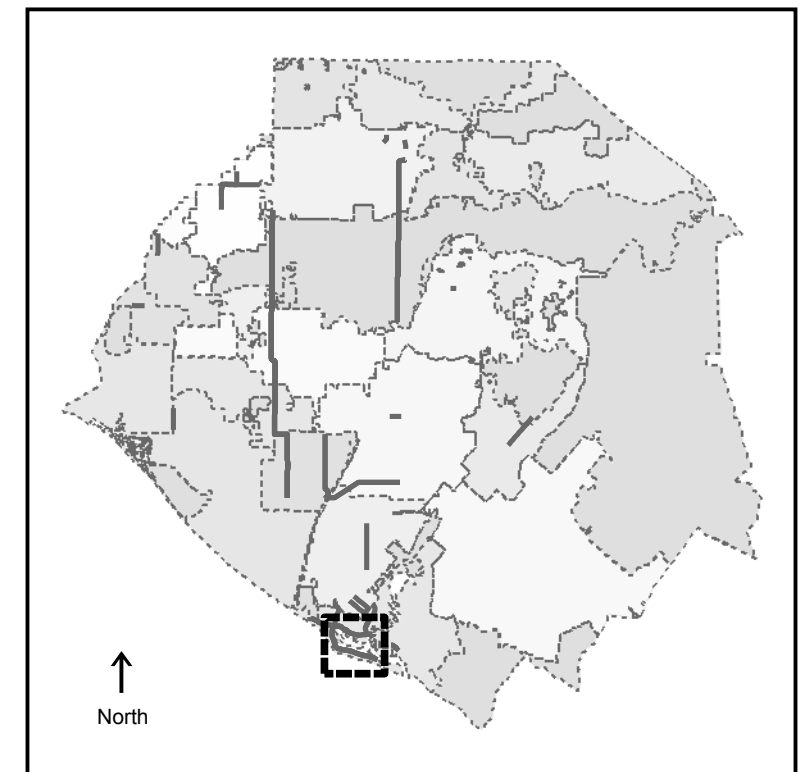
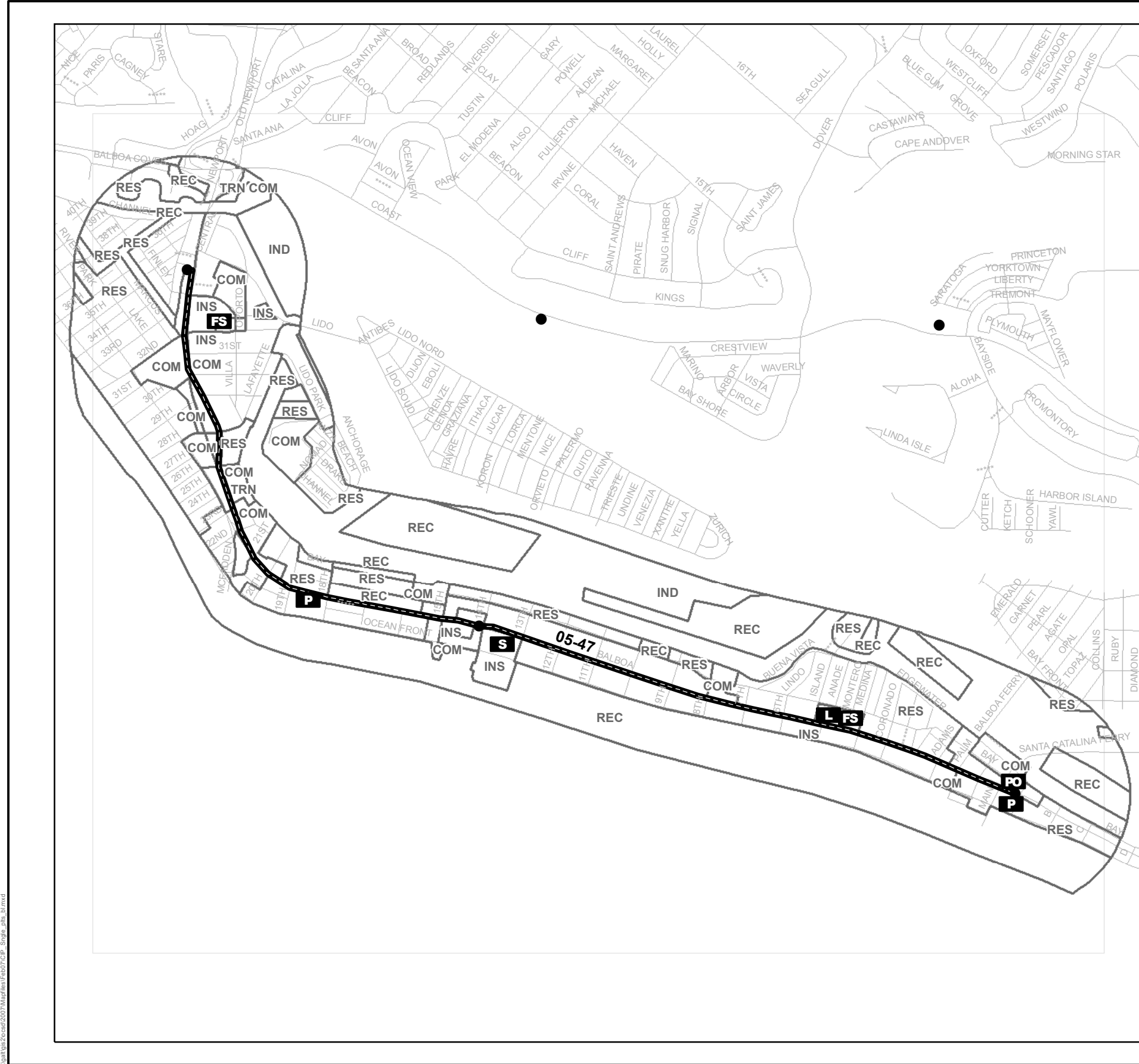
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



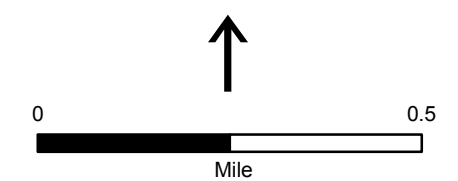


LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

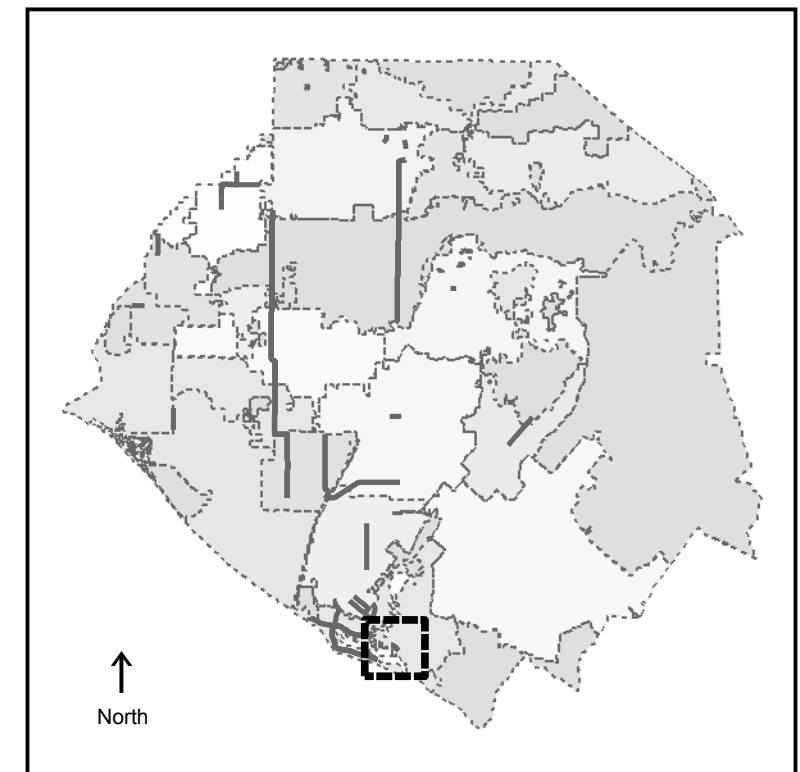
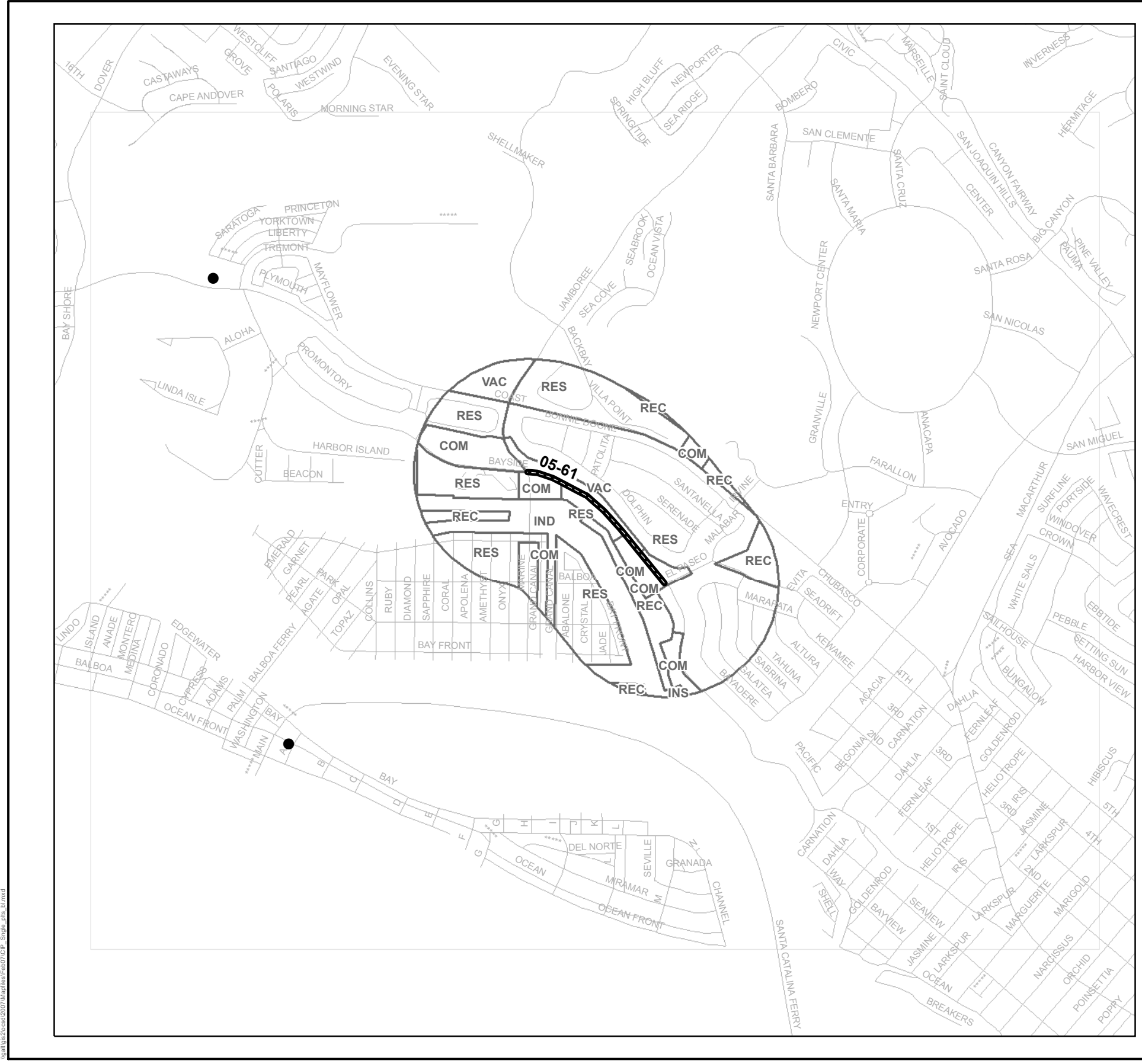
OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



\\va1\p2\cadd\2007\Map\Map\Facilities\05-47_CIP_Scgs_P_01a.txd

Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

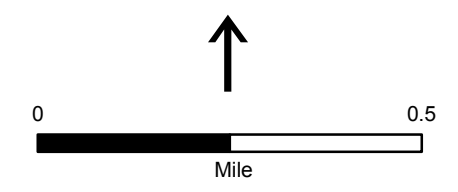


**LAND USES AND SENSITIVE RECEPTORS
WITHIN A 0.25-MILE BUFFER OF PROJECTS**

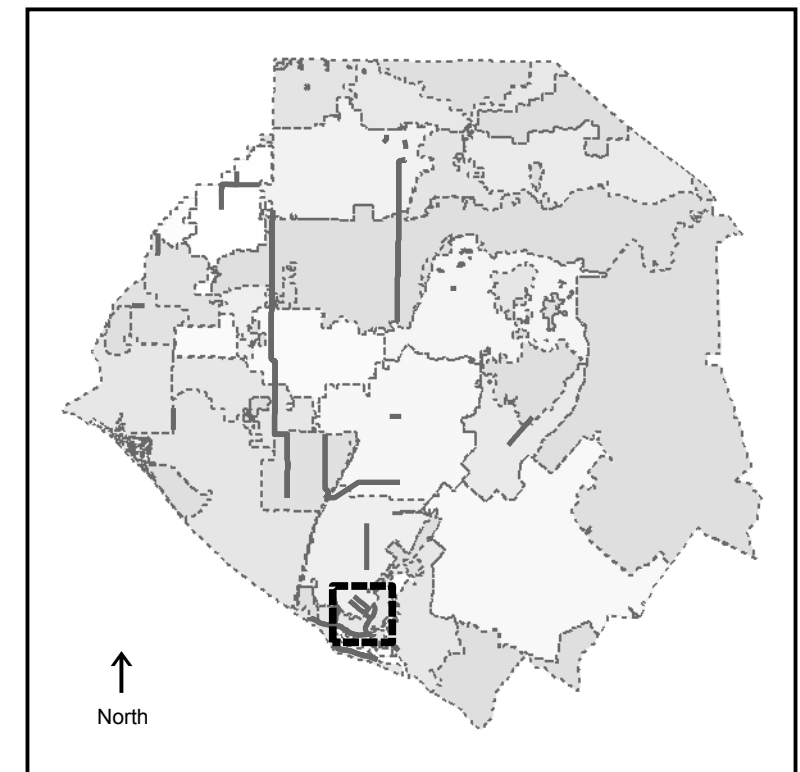
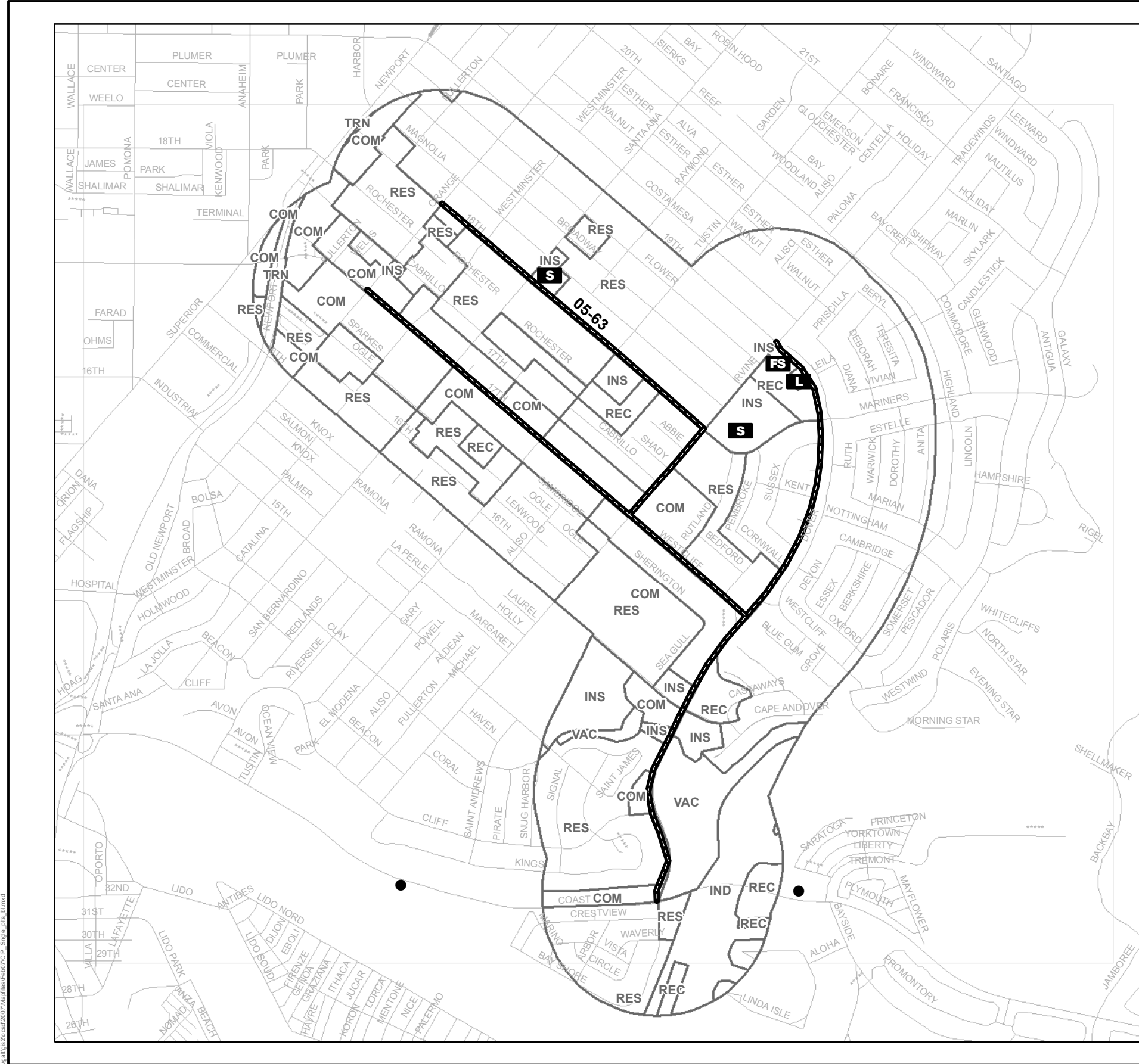
- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

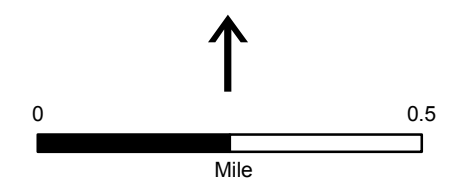


LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

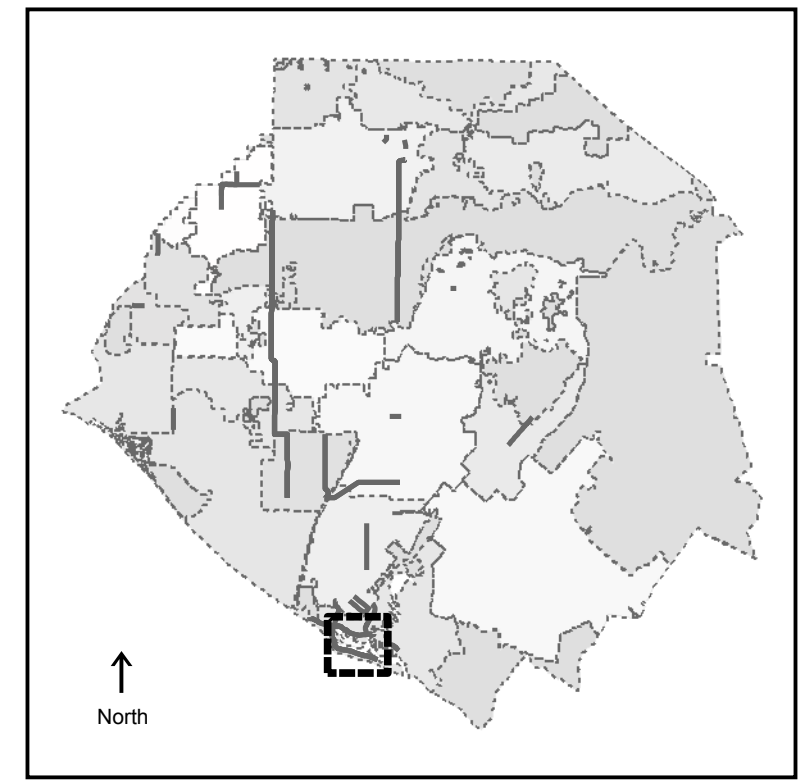
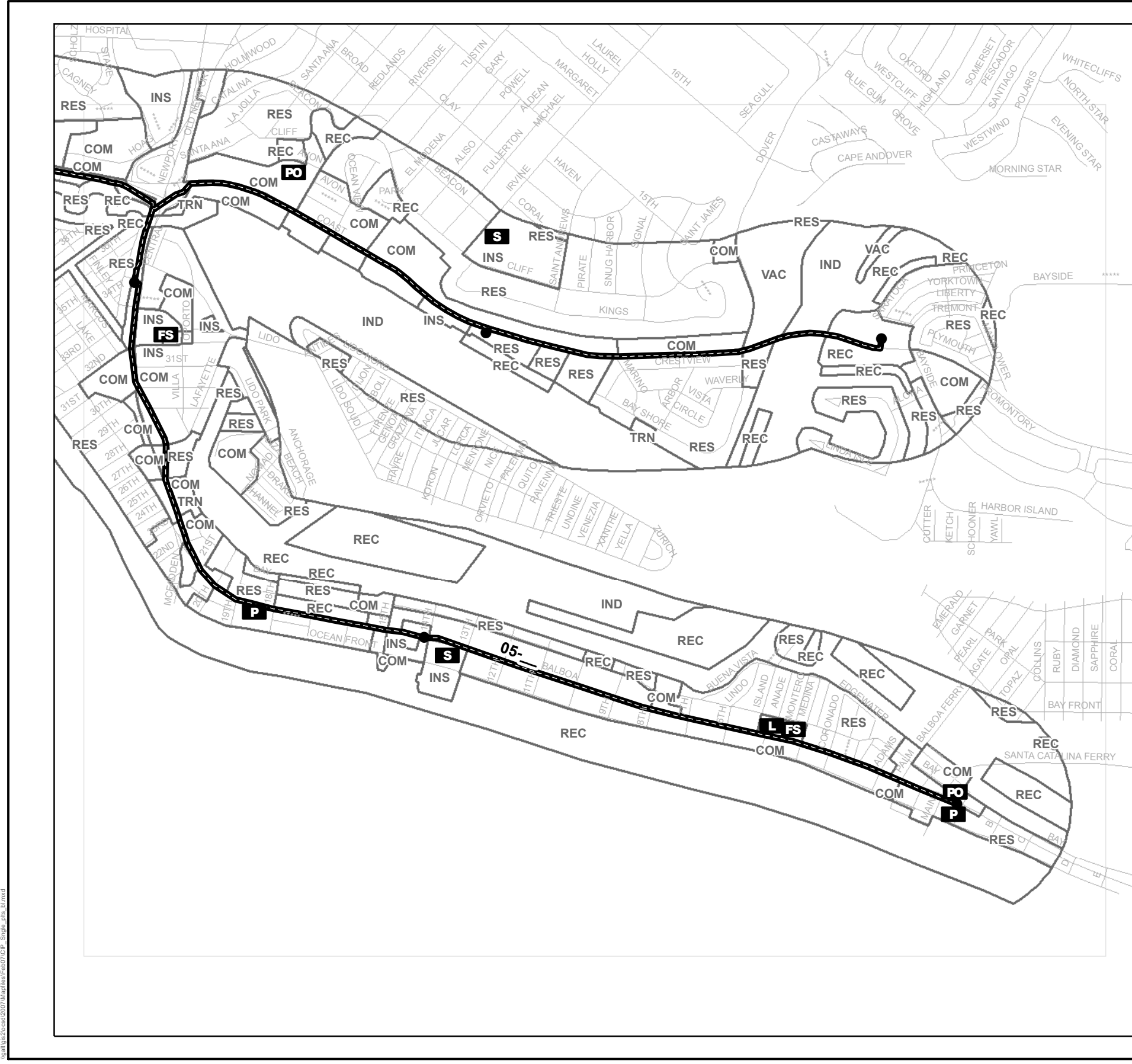
- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

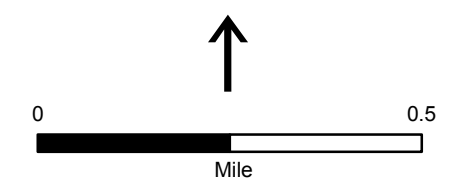


**LAND USES AND SENSITIVE RECEPTORS
WITHIN A 0.25-MILE BUFFER OF PROJECTS**

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

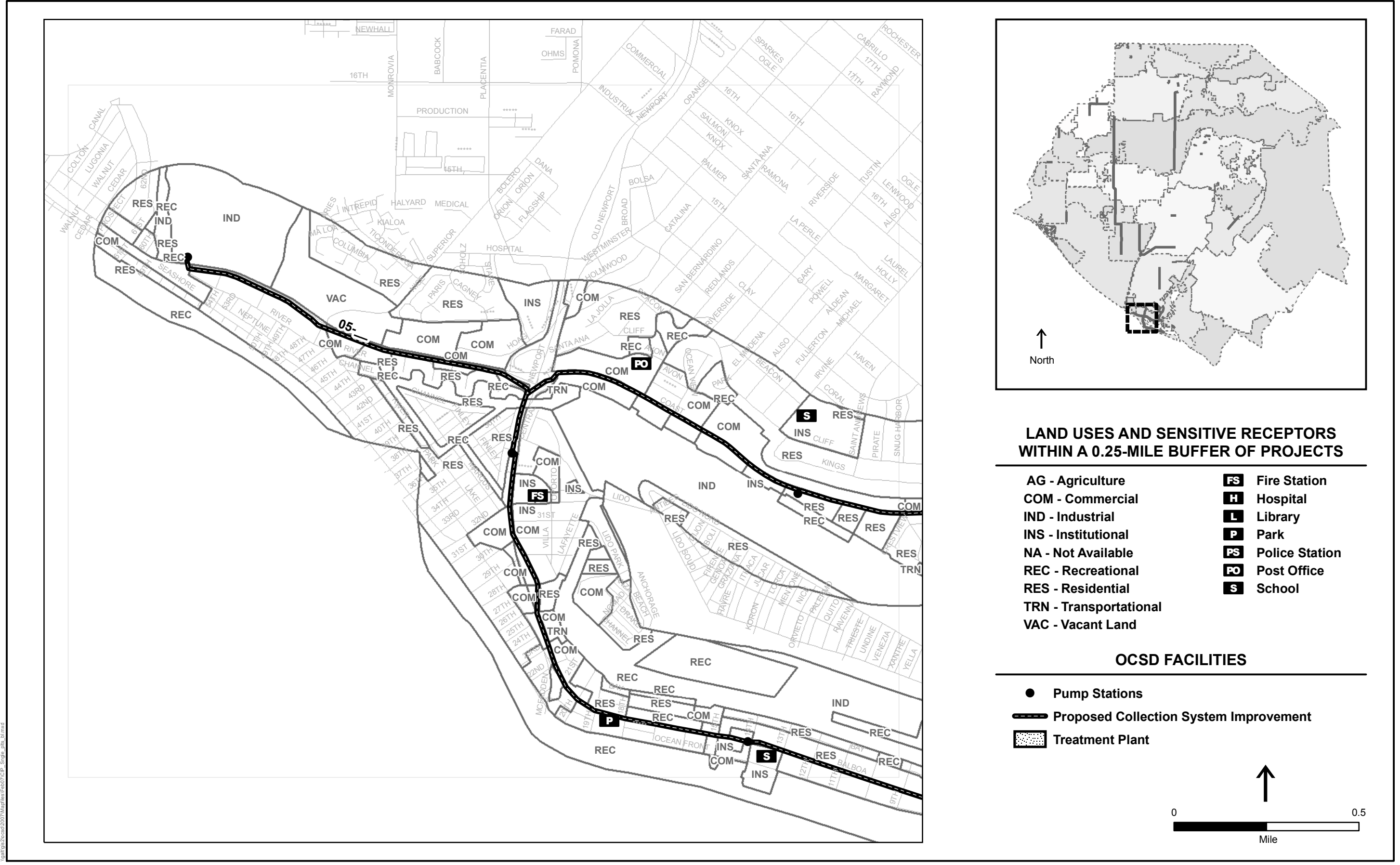
OCSD FACILITIES

- Pump Stations
- Proposed Collection System Improvement
- ▨ Treatment Plant

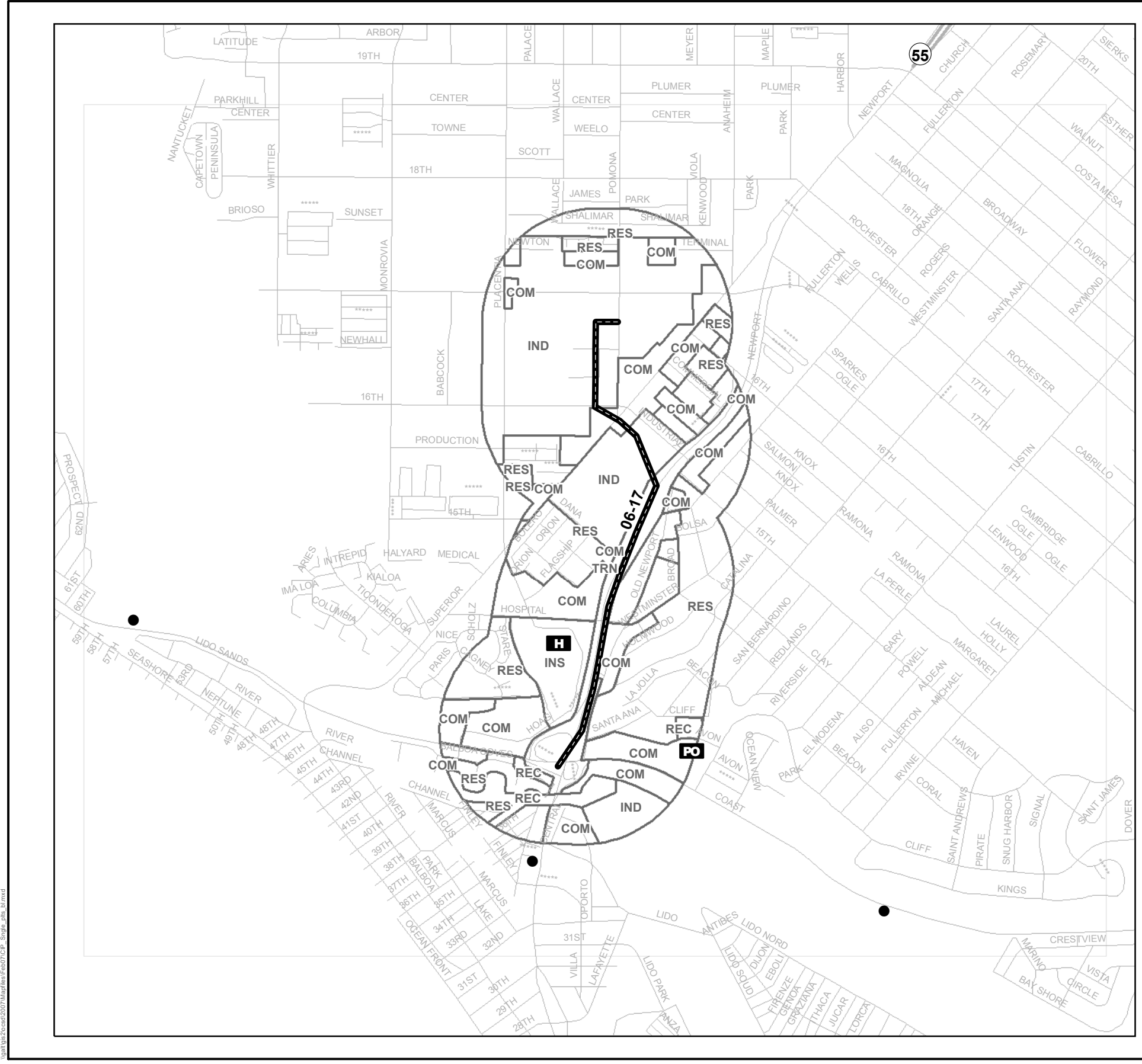


\\path\20\2007\MapInfo\F007\CP_Shape_files\mxd

Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.



Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

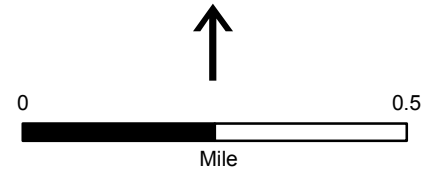


**LAND USES AND SENSITIVE RECEPTORS
WITHIN A 0.25-MILE BUFFER OF PROJECTS**

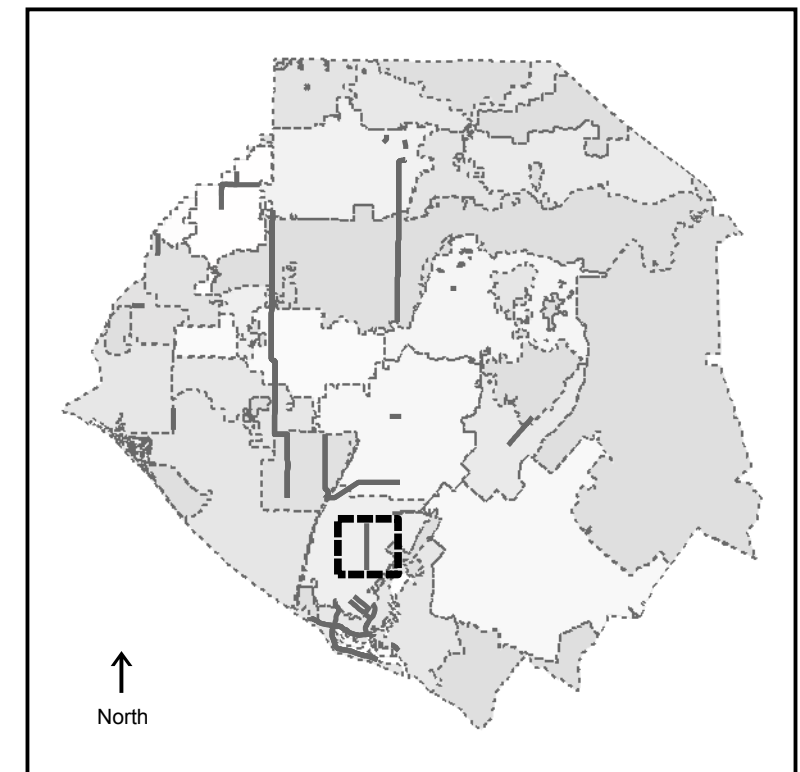
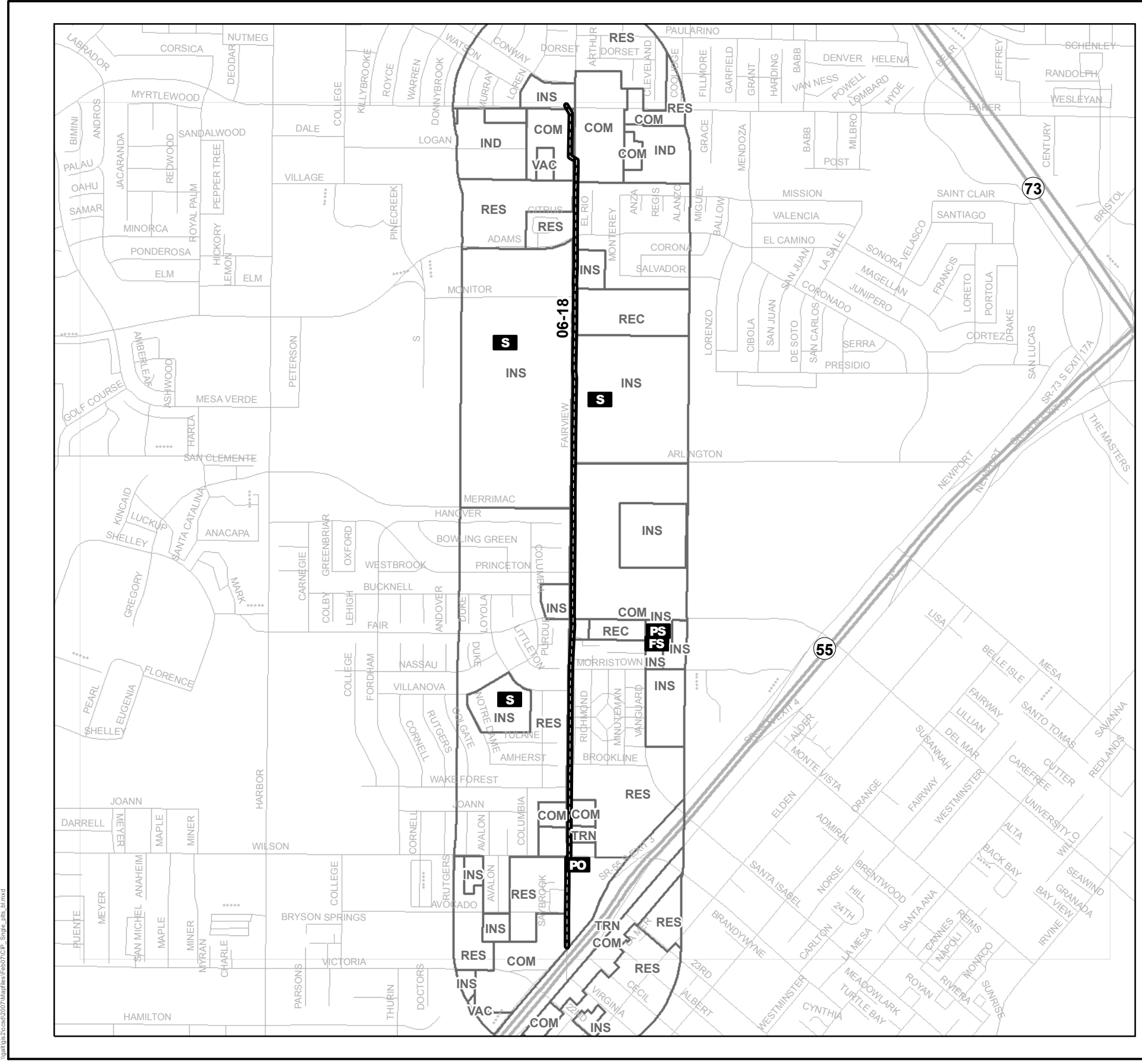
- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

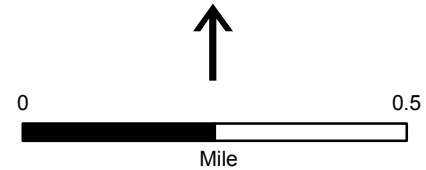


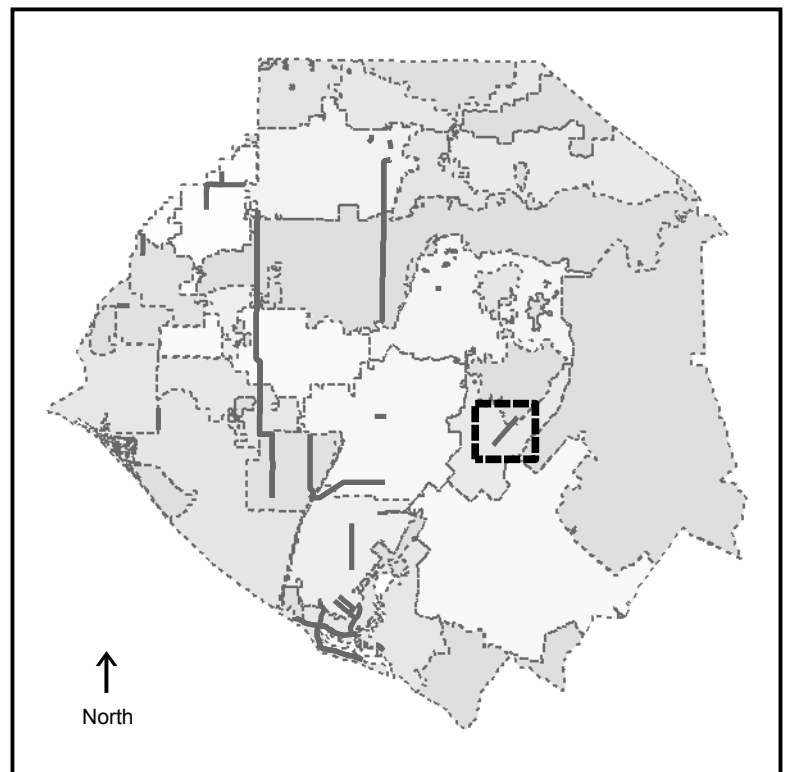
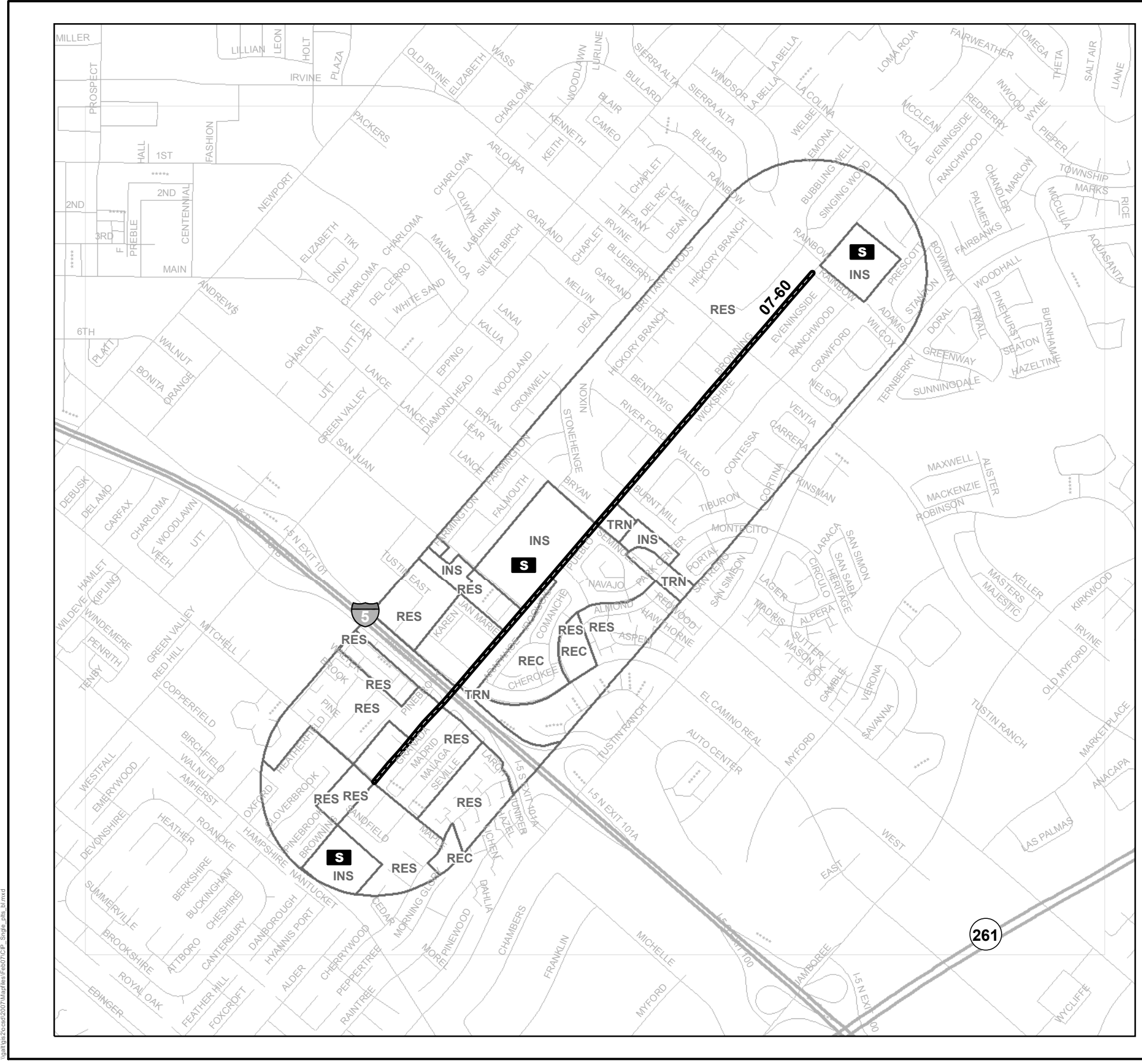
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



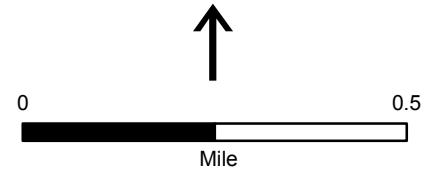


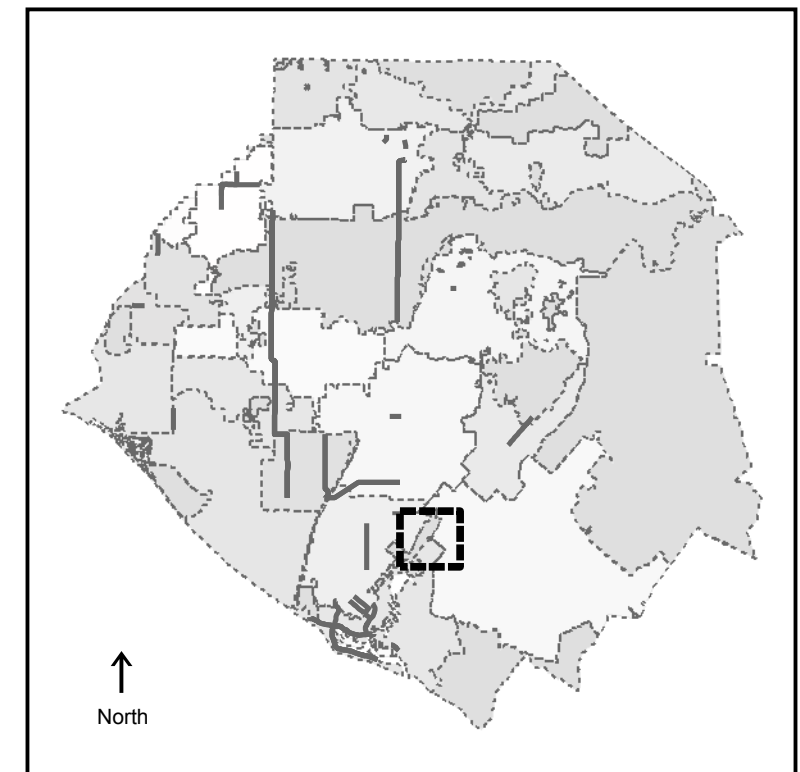
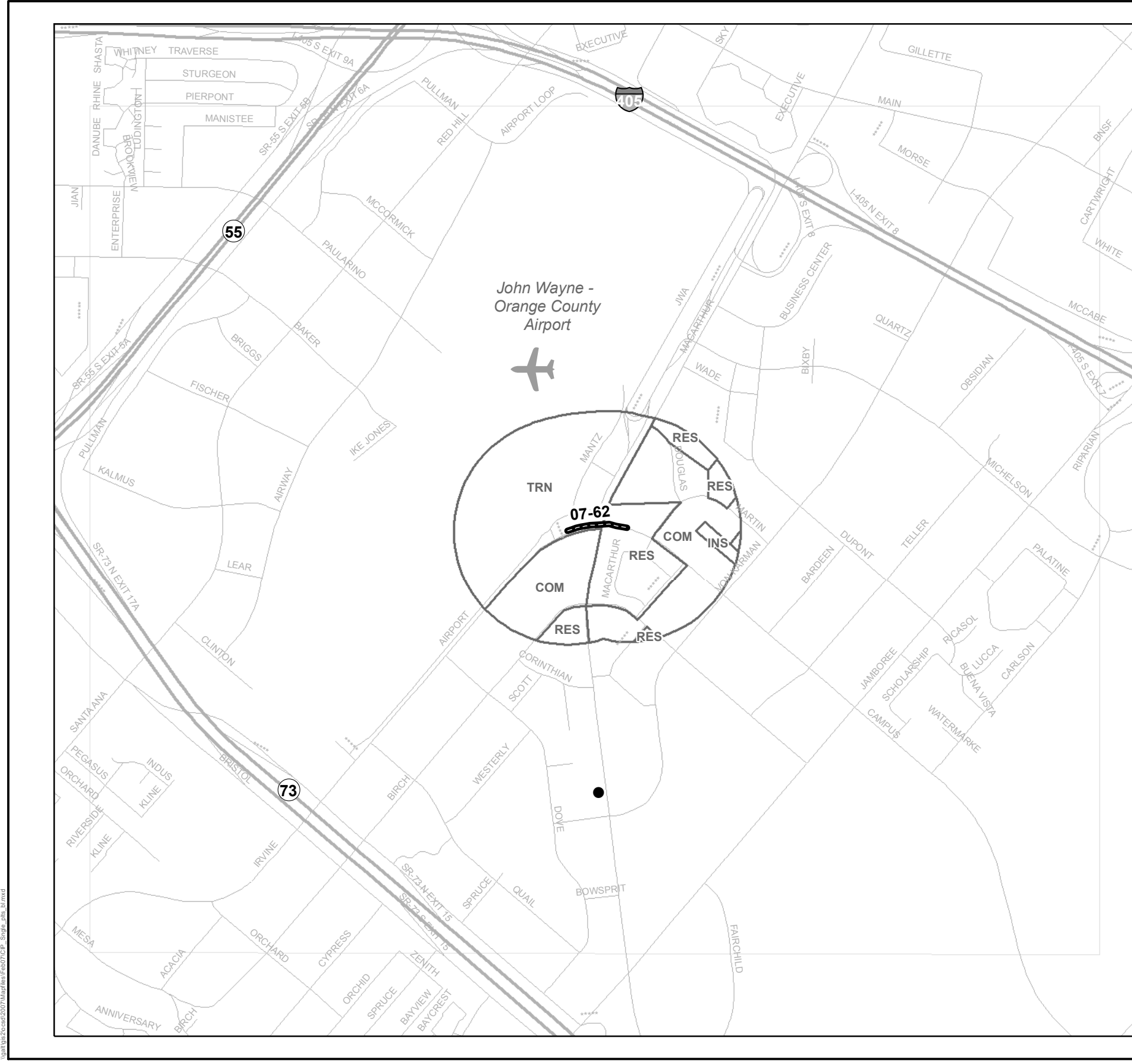
LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



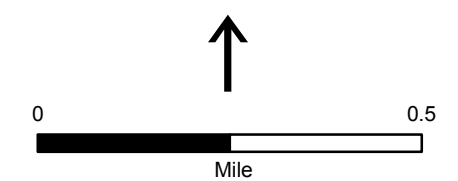


LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

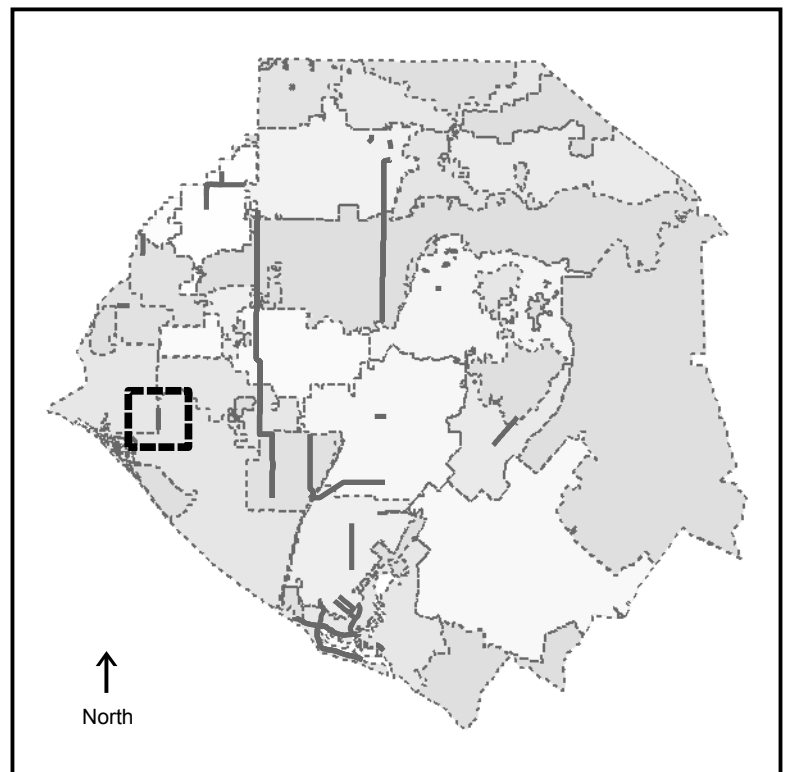
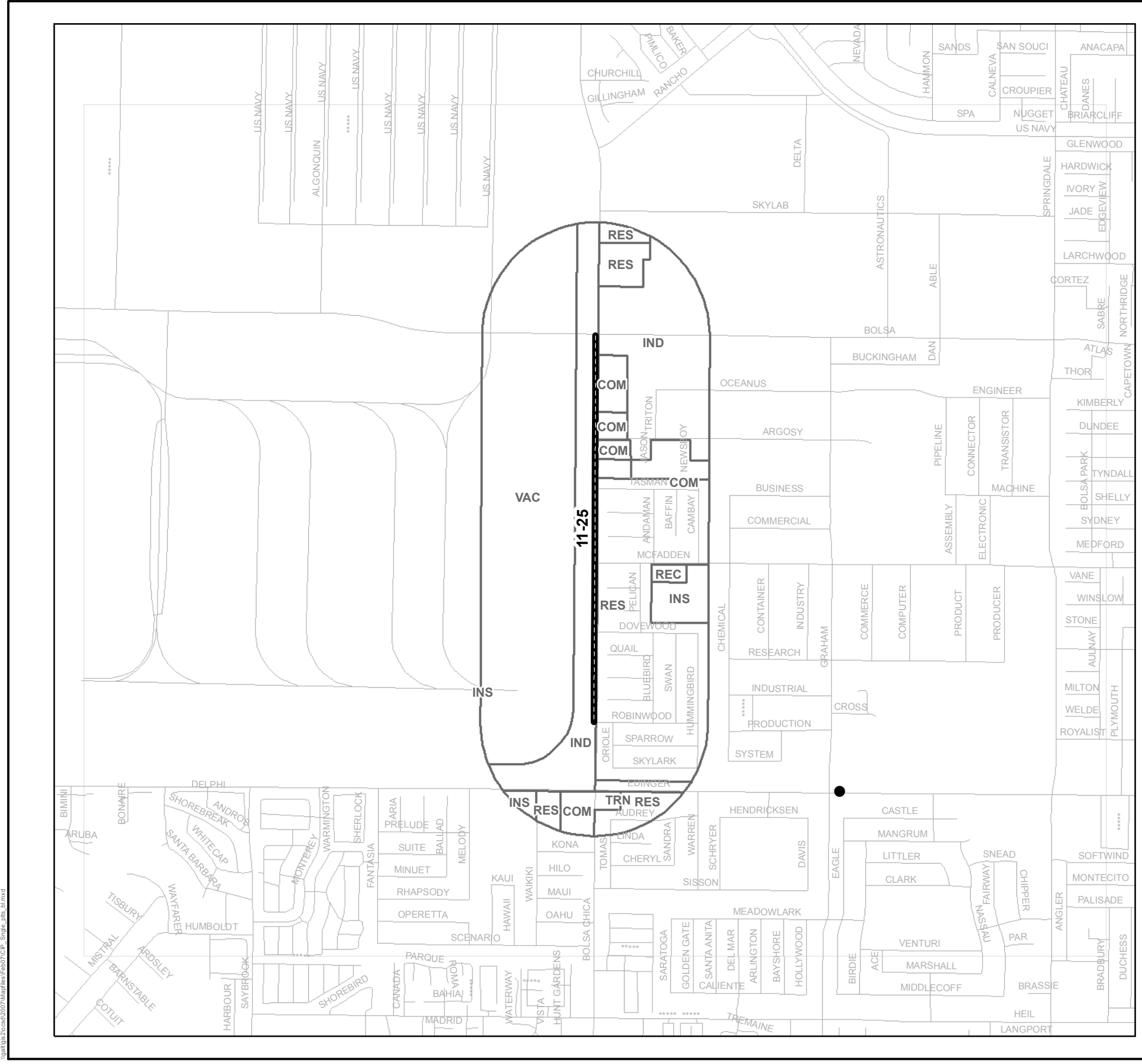
- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



Sources: Orange County Sanitation District GIS, 2006; CH2M HILL, 2006; Southern California Association of Governments, 2001; Thomas Brothers, 2002.

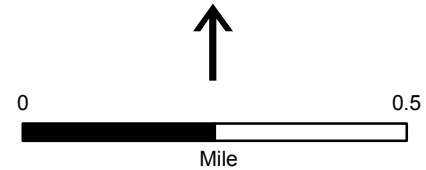


LAND USES AND SENSITIVE RECEPTORS WITHIN A 0.25-MILE BUFFER OF PROJECTS

- | | |
|-------------------------------|--------------------------|
| AG - Agriculture | FS Fire Station |
| COM - Commercial | H Hospital |
| IND - Industrial | L Library |
| INS - Institutional | P Park |
| NA - Not Available | PS Police Station |
| REC - Recreational | PO Post Office |
| RES - Residential | S School |
| TRN - Transportational | |
| VAC - Vacant Land | |

OCSD FACILITIES

- Pump Stations
- ▬ Proposed Collection System Improvement
- ▨ Treatment Plant



blank page

Appendix B

Scoping Materials

blank page

B1 Notice of Preparation and Initial Study

blank page

blank page

Initial Study

Service Area Annexation and Collection System Improvement Plan

Prepared for
Orange County Sanitation District

September 2006

Prepared by



10844 Ellis Avenue
Fountain Valley, CA 92708

blank page

Contents

Section	Page
Acronyms	vii
1.0 Project Information	1-1
1.1 Introduction	1-1
1.2 Background	1-1
1.3 Purpose of PEIR.....	1-1
1.4 Project Description	1-2
1.5 Discussion of Potential Impacts	1-14
2.0 Environmental Checklist Form	2-1
3.0 Environmental Evaluation	3-1
I. Aesthetics.....	3-1
II. Agricultural Resources	3-2
III. Air Quality.....	3-3
IV. Biological Resources.....	3-4
V. Cultural Resources	3-6
VI. Geology and Soils.....	3-7
VII. Hazards and Hazardous Materials	3-9
VIII. Hydrology and Water Quality	3-11
IX. Land Use and Planning	3-13
X. Mineral Resources	3-14
XI. Noise	3-14
XII. Population and Housing	3-15
XIII. Public Services	3-16
XIV. Recreation.....	3-17
XV. Transportation/Traffic	3-17
XVI. Utilities and Service Systems	3-18
XVII. Mandatory Findings of Significance.....	3-20
4.0 Preparers and Contributors	4-1
5.0 References	5-1

Attachments

- A Notice of Preparation Response Form

Figures

1 Existing Service Area and Wastewater Facilities1-3
2 Proposed Annexations1-7
3 Proposed Improvements.....1-11

Tables

1 Proposed Annexation.....1-5
2 Proposed Collection System Improvements.....1-9

Acronyms

AQMP	Air Quality Management Plan
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CIP	Capital Improvement Plan
CO	Carbon Monoxide
LAFCO	Local Agency Formation Committee
mgd	million gallons per day
NCCP	Natural Community Conservation Plan
NOP	Notice of Preparation
NO _x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
PEIR	Program Environmental Impact Report
Plan	Service Area Annexation and Collection System Improvement Plan
PM ₁₀	Particulate matter less than 10-microns
ROC	Reactive Organic Compounds
RWQCB	Regional Water Quality Control Board
Sanitation District or OCSD	Orange County Sanitation District
SCAQMD	South Coast Air Quality Management District
SO _x	Sulfur Oxides
UBC	Uniform Building Code
USEPA	United States Environmental Protection Agency

blank page

1.0 Project Information

1.1 Introduction

This Notice of Preparation (NOP) has been prepared pursuant to the requirements of the California Environmental Quality Act (CEQA). This NOP serves to notify interested parties that the Orange County Sanitation District (Sanitation District or OCSD), as the lead agency, is beginning preparation of a Program Environmental Impact Report (PEIR) to assess its Service Area Annexation and Collection System Improvement Plan (Plan). The Sanitation District proposes to annex unincorporated property in Orange County which is directly adjacent to or surrounded by the current Sanitation District service area. This annexation would facilitate abandonment of existing septic tanks in residential areas and provide an alternative to installation of new septic tanks in vacant areas. However, annexation would not entitle these areas to development. In addition, sewer connection and septic tank abandonment are not part of the proposed Plan. The Sanitation District also proposes to make improvements to the regional collection system to accommodate existing and planned growth in northern and central Orange County.

1.2 Background

The Sanitation District, formed in 1946 under the County Sanitation District Act of 1923, provides wastewater services to approximately 2.3 million people within a 470-square mile area of northern and central Orange County. The Sanitation District operates and maintains a 410-mile long regional wastewater conveyance system. This system conveys sewage from local sewer lines in 21 cities and three special districts to two regional Sanitation District treatment plants. The two treatment plants receive wastewater from 11 major trunk sewers. The Sanitation District also operates and maintains local sewers in the City of Tustin and in unincorporated areas north of Tustin. Figure 1 shows the Sanitation District's service area, and its collection and treatment facilities.

The Sanitation District treatment plants treat approximately 250 million gallons per day (mgd) of wastewater as specified in the 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). Approximately 7 to 10 mgd of treated wastewater is provided to the Orange County Water District for reclamation. Approximately 240 mgd are discharged to the Pacific Ocean through an offshore pipeline which extends approximately 5 miles off shore.

1.3 Purpose of PEIR

Pursuant to Section 15168 of the State of California CEQA Guidelines, a PEIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: geographically; as logical parts in the chain of contemplated actions;

in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or, as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways. Additionally, a PEIR allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.

CEQA requires every proposed project in the state of California to be examined for potential effects on the environment. The Sanitation District, in accordance with CEQA, is preparing a PEIR to evaluate potential impacts associated with the proposed Sanitation District service area annexation and proposed improvements to the collection system.

1.4 Project Description

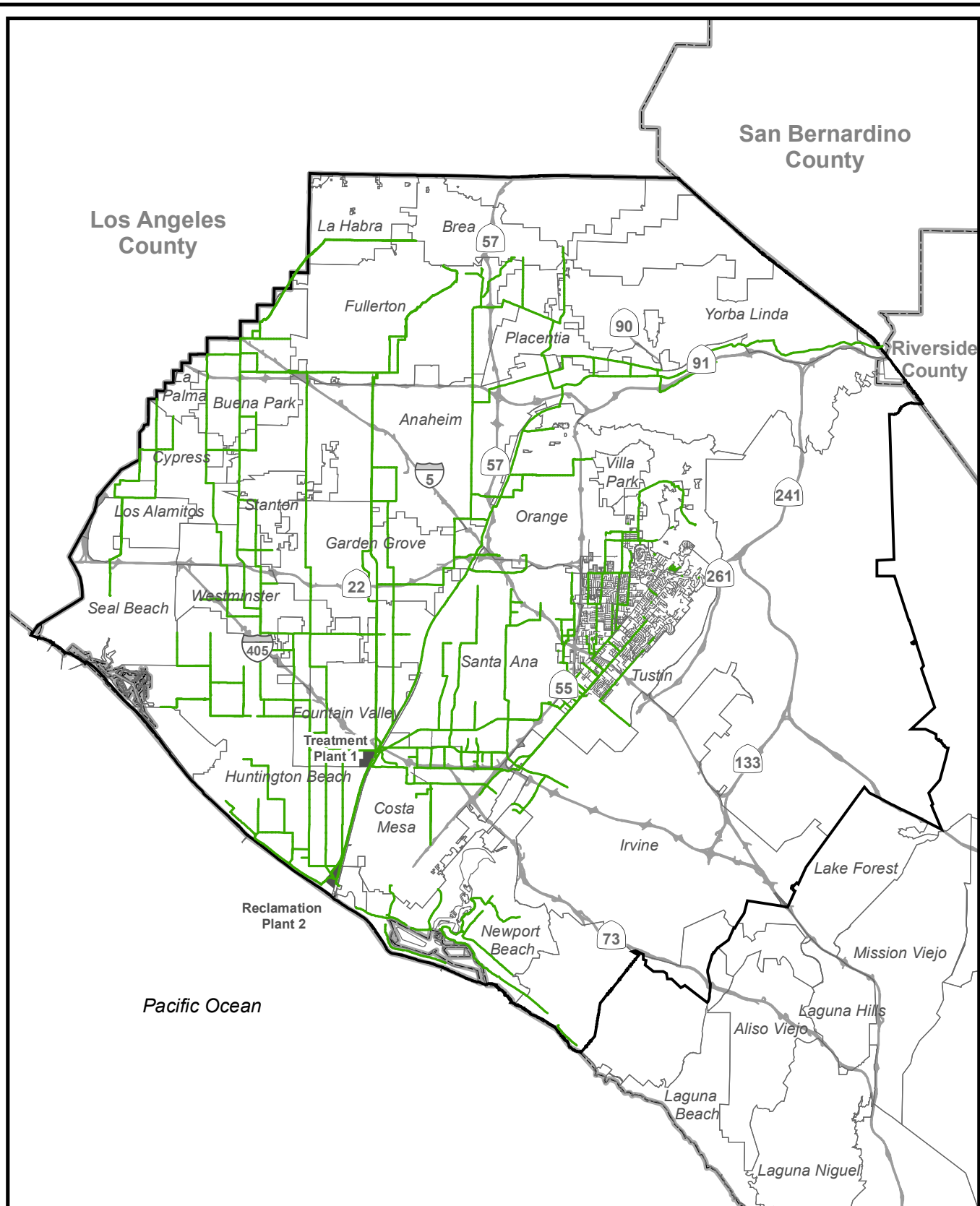
1.4.1 Service Area Annexation

The Sanitation District proposes to annex approximately 7,816 acres to its service area in six locations as listed in Table 1 and shown on Figure 2. Annexation to the Sanitation District means that in the future, property owners could access regional sewerage and wastewater treatment services. Annexation to the Sanitation District service area would not entitle these areas to development. In addition, sewer connection and septic tank abandonment are not part of the proposed Plan. The purpose of the proposed annexation is to reduce the potential for groundwater contamination from failing septic tanks in these six locations. The proposed annexation would provide property owners with the option to abandon septic tanks and limit new septic tank installations in the future.

Annexation to the Sanitation District service area is coordinated with the Orange County Local Agency Formation Committee (LAFCO) and local cities and local sewerage agencies before service is initiated. Property is annexed by the Sanitation District in accordance with Ordinance No. OCSD-29. The ordinance stipulates that the property be annexed to an appropriate local sewerage agency, or that written approval is obtained from the designated local sewerage agency, such as a city, for the purpose of obtaining access to and use of the local sewer system that connects to the Sanitation District's system. Where an adjacent city has a sphere of influence encompassing an unincorporated area, the city's CEQA documentation for its General Plan should identify sewerage service facilities or policies for eventual sewer service of the sphere area. As shown in Table 1, local sewer agencies have been identified. For the six proposed annexations, local sewer system planning is currently the responsibility of the County of Orange. (Refer to County of Orange General Plan, Board of Supervisors Resolution 04-106, April 20, 2004). The six annexation areas are described below.

Naval Weapons Station in Seal Beach. This proposed annexation area is 5,101 acres and is currently used as a federal military facility. Local sewer agencies for this area include the County of Orange and the City of Seal Beach. The Sanitation District does not know of any proposed plans for changing the existing use of this area.

Bolsa Chica. This proposed annexation area is 1,680 acres and is currently an open space area. Local sewer agencies for this area include the County of Orange and the City of



\\gall\gis2\ocsd\plots\Figure 1_ServiceArea.mxd 9/22/2006

LEGEND

- OCSD sewers
- OCSD maintained sewers
- OCSD Boundary
- City Boundaries
- Freeways



Figure 1
Existing Service Area
and Wastewater Facilities
Orange County Sanitation District

Source: OCSD GIS Data, Thomas Brothers 2002.

1:265,000

blank page

TABLE 1
Proposed Annexation

Local Sewer Agency	Location	Acres
County/City of Seal Beach	Naval Weapons Station in Seal Beach*	5,101
County/City of Huntington Beach	Bolsa Chica*	1,680
County/City of Orange	Upper Blind Canyon*	860
County/City of Anaheim	Yorba Regional Park	0.3
County/City of Orange	Crest De Ville Road Area	142
County/City of Orange	Anaheim Hills	33
Total		7,816

*Areas dedicated as open space

Huntington Beach. The Sanitation District does not know of any proposed plans for changing the existing use of this area.

Upper Blind Canyon. This proposed annexation area is 860 acres and is currently an open space area. Local sewer agencies for this area include the County of Orange and the City of Orange. The Sanitation District does not know of any proposed plans for changing the existing use of this area.

Yorba Regional Park. This proposed annexation area is 0.3 acres and is currently occupied by one County of Orange structure. Local sewer agencies for this area include the County of Orange and the City of Anaheim. The Sanitation District does not know of any proposed plans for changing the existing use of this area.

Crest De Ville Road Area. This proposed annexation area is 142 acres and is currently occupied by 81 residential lots. Local sewer agencies for this area include the County of Orange and the City of Orange. The Sanitation District does not know of any proposed future development plans for this area.

Anaheim Hills. This proposed annexation area is 33 acres and is currently occupied by 19 residential lots. Local sewer agencies for this area include the County of Orange and the City of Orange. The Sanitation District does not know of any proposed future development plans for this area.

1.4.2 Collection System Improvements

As part of its ongoing strategic planning effort, the Sanitation District updates its Capital Improvement Plan (CIP) annually to reflect new information on asset condition, wastewater flows, and Orange County demographics. The CIP is reviewed and revised to ensure that wastewater facilities are adequately maintained and upgraded and that capital improvements are scheduled and completed in a timely and cost-effective manner. In April 2006, the Sanitation District completed a capacity analysis of its trunk sewer system as part of its 2006 Strategic Plan Update (Job No. J-101). This analysis supersedes the collection system element of the Sanitation District's 1999 Strategic Plan. The capacity analysis, based

on recent growth projections for Orange County and simulations of flows in the Sanitation District collection system under dry and wet weather conditions, identified portions of the collection system with potential capacity deficiencies through 2030. Recommended improvements based on the findings of the capacity analysis have been integrated into the CIP. Major improvements proposed to address existing and projected deficiencies in the regional trunk sewer system are listed in Table 2 and described below. See Figure 3 for locations of proposed improvements.

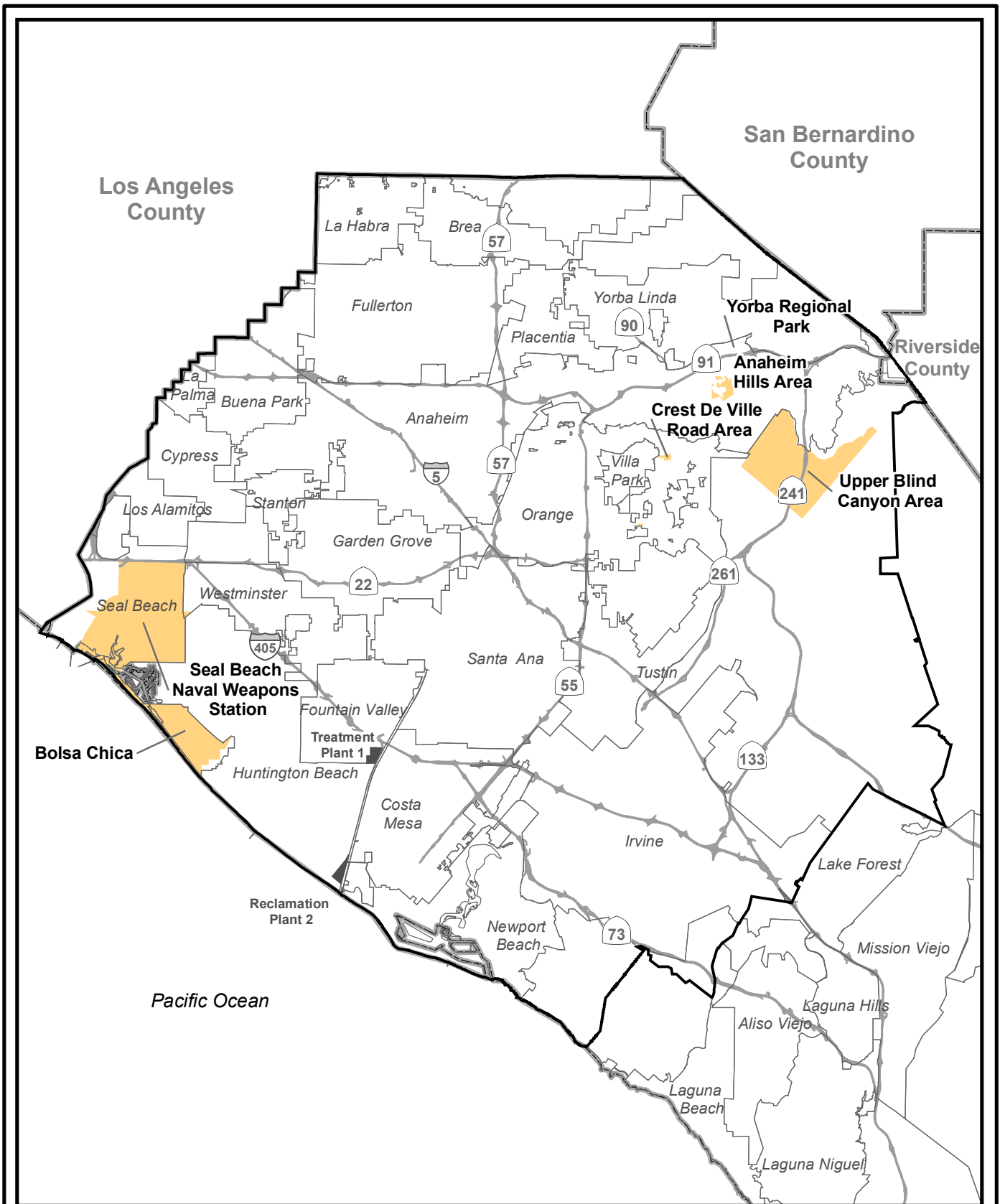
In addition to these major improvements, the Sanitation District performs repairs, replacements, and minor modifications to collection system facilities on an ongoing basis. Most of the collection system improvements take place in street right-of-ways within existing easements. Many of the projects include rehabilitation of existing sewers. Proposed improvements associated with capacity deficiencies would accommodate planned growth and would reduce surcharging (i.e. overburden) in sewers during wet weather. Typically, capacity improvements consist of replacement of the existing pipe with a larger-diameter pipe or installation of a new sewer adjacent to the existing sewer. Based on ongoing flow monitoring results, condition assessment, preliminary design, and coordination with local agencies, the proposed improvements and construction phase listed in Table 2 could change. Additionally, new improvements, similar to those described herein, are likely to be identified in future updates to the CIP.

01-101 Raitt and Bristol Street Sewer Extension. This project would replace the existing sewer in Myrtle Street, between Raitt and Bristol Streets in Santa Ana. The new pipe would relieve existing capacity deficiencies in both the Sanitation District and City of Santa Ana sewer systems. The scope of the project includes replacement of approximately 2,360 feet of 21-inch pipe with 24-inch pipe, replacement of a 21-inch siphon and installation of a new 8-inch pipe to connect house laterals. The project is scheduled for construction in 2008 to minimize risks from potential sewer failures.

01-17 Santa Ana Trunk Sewer Rehabilitation. This project would rehabilitate the existing Santa Ana Trunk sewer from the Sanitation District's Reclamation Plant No. 1 in Fountain Valley to Bristol Street in Santa Ana. The scope of the project includes rehabilitation of roughly 33 concrete manholes, and approximately 17,000 feet of unlined 42-inch and 48-inch diameter concrete pipe. A liner would be installed in the pipe to protect the concrete from hydrogen sulfide corrosion. The manholes would be coated with a protective liner, or replaced. This project would increase the life expectancy of the trunk sewer by 25 years. Construction is scheduled in 2008 to allow the sewer and access manholes to be repaired and to minimize the risk of potential sewer failures.

02-49 Taft Branch Improvements. This project would increase the size of a section of the Taft Branch sewer to provide additional capacity for planned developments such as the East Orange Development. The project would upsize approximately 1,200 feet of 15-inch diameter pipe along East Taft Avenue between Shaffer Street and Glassell Street in Orange. Construction is scheduled in 2012.

02-52 Euclid Relief Improvements. This project would increase the capacity of the Euclid Trunk system between Plant No. 1 and Edinger Avenue. The project could include installation of approximately 13,700 feet of large-diameter pipe in Euclid Street in the Cities of Fountain Valley and Santa Ana. The proposed improvements would accommodate



\\galt\gis2\ocsd\plots\Figure 2_Annexations.mxd 9/22/2006

- LEGEND**
- OCSD Boundary
 - Freeways
 - Proposed Annexations
 - City Boundaries

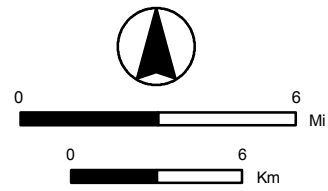


Figure 2
Proposed Annexations
Orange County Sanitation District

Source: OCSD GIS Data, Thomas Brothers 2002.

blank page

TABLE 2
Proposed Collection System Improvements

CIP No. ¹	Project Index ²	Title	Location	Construction Phase
01-101	SAN-01	Raitt and Bristol Street Sewer Extension	Santa Ana	2008-2010
01-17		Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008-2011
02-49	SAR-02	Taft Branch Improvements	Orange	2012-2014
02-52	EUA-01	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010-2012
02-65	NHP-01,02	Newhope Placentia and Cypress Trunk Replacement	Anaheim, Fullerton	2015-2017
02-71	EUB-01	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009-2011
03-55	KNT-01	Westside Relief Interceptor	La Palma, Cypress, Los Alamitos	2011-2013
03-58		Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010-2012
03-59	MLR-01	Miller-Holder Trunk Sewer Relief	Buena Park	2010-2012
03-60	KNT-02	Beach Trunk-Knott Interceptor Sewer Relief	Buena Park	2010-2012
05-47		Balboa Trunk Sewer Rehabilitation	Newport Beach	2010-2012
05-XX		Newport Force Main Upgrades	Newport Beach	2010-2012
05-61		Bayside Drive Improvement	Newport Beach	2009-2011
05-63	RPT-01	Dover Drive Trunk Sewer Relief	Newport Beach	2009-2011
06-17	BPT-01	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008-2010
06-18	BKR-01	Fairview Road Trunk Sewer Relief	Costa Mesa	2009-2011
07-60	HATS-01	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2009-2011
07-62	SUN-01	Von Karman Trunk Sewer Relief	Irvine	2011-2013
11-25	KNT-03 (30 -99 St. Plan)	Edinger-Bolsa Chica Trunk Improvements	Huntington Beach, Seal Beach	2013-2015
11-31	CST-01	Lake Avenue Interceptor Sewer Relief	Huntington Beach	2008-2010

¹ OCSD Budget Fiscal Years 2006-07 & 2007-08

² OCSD Strategic Plan Update, April 2006 (Job J-101)

projected increase in flow from planned developments such as Platinum Triangle in Anaheim. Construction is scheduled in 2010.

02-65 Newhope Placentia and Cypress Trunk Replacement. This project would increase the capacity of the Newhope Placentia and Cypress Trunk systems and the Rolling Hills

Subtrunk. Improvements would be constructed in the Cities of Anaheim and Fullerton, along State College Boulevard between East Orangewood Avenue and Yorba Linda Boulevard; along Yorba Linda Boulevard between Associated Road and State College Boulevard; and North of Bastanchury Road near Associated Road. The project could include installation of approximately 34,800 feet of 27- to 48-inch diameter pipe and 3,500 feet of 24- to 27-inch pipe. Project alternatives and related improvements such as rehabilitation of the Yorba Linda Pump Station would be considered in a subsequent study. Construction is scheduled in 2015

02-71 Fullerton-Brea Interceptor Sewer Relief. This project would either upsize approximately 2,200 feet of 12-inch diameter sewer near Rolling Hills Drive in Fullerton or reconfigure local sewers to divert flows from the Old Fullerton-Brea Trunk to the Fullerton-Brea Interceptor. Construction is scheduled in 2009.

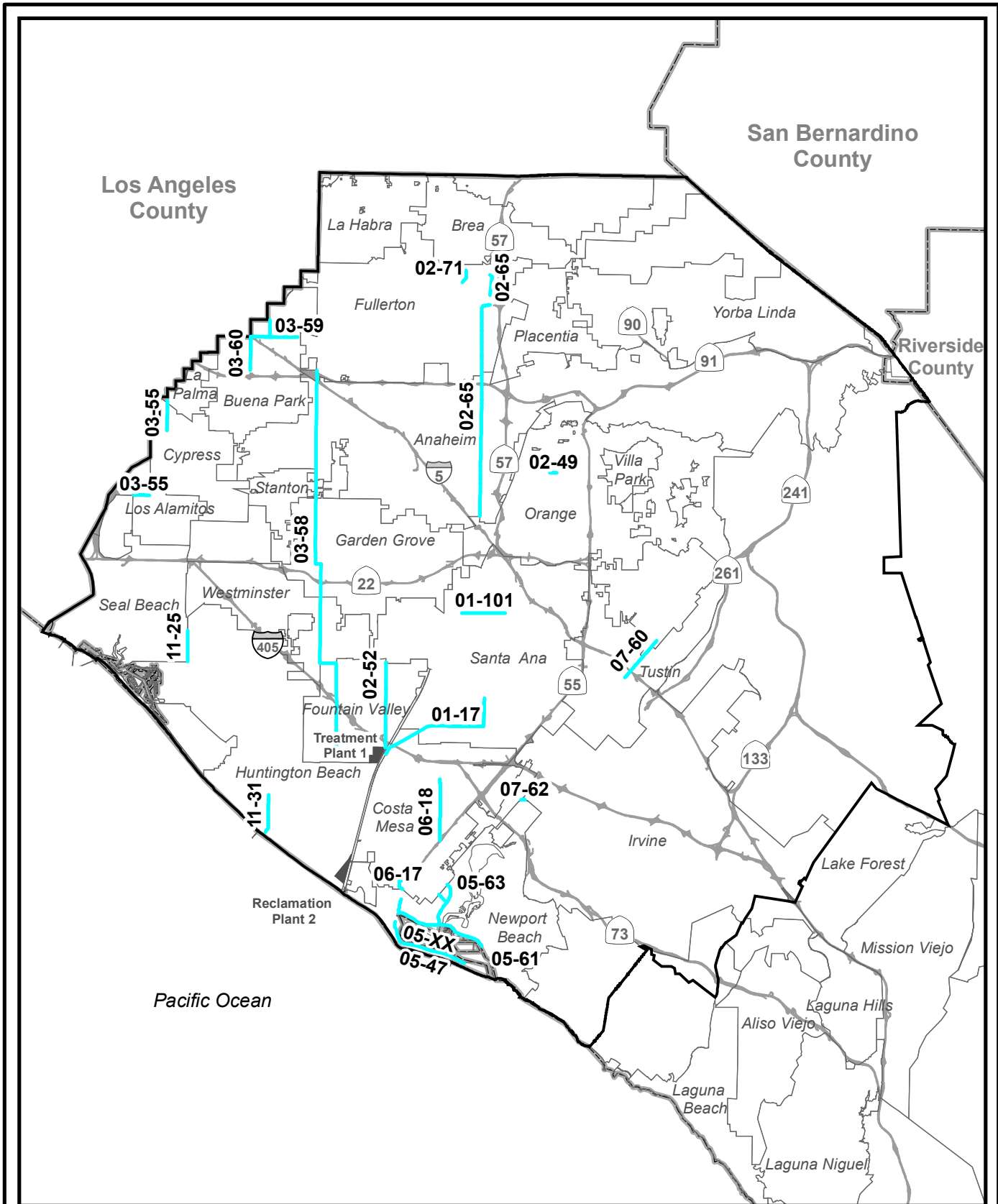
03-55 Westside Relief Interceptor. This project would increase the capacity of the Westside Relief Interceptor in La Palma, Cypress, and Los Alamitos. Improvements could include installation of 4,800 feet of 21-inch diameter pipe in Denni Street between Moorgate Drive and Lincoln Avenue, and installation of 2,600 feet of 33-inch diameter pipe in Katella Avenue between Bloomfield Street and Los Alamitos Boulevard. Improvements would be designed to accommodate projected growth in tributary areas and to minimize surcharging during wet weather. Construction is scheduled in 2011.

03-58 Magnolia Trunk Rehabilitation. This project would rehabilitate the existing Magnolia Trunk sewer along Bushard and Magnolia Streets, between Ellis Avenue and Orangethorpe Avenue, in the Cities of Fountain Valley, Westminster, Garden Grove, Stanton, and Anaheim. The scope of the project includes assessment and rehabilitation of approximately 12 miles of 39-inch and 78-inch of lined concrete pipe. Improvements could include relining the interior of concrete pipe damaged from hydrogen sulfide corrosion. Rehabilitation would increase the life expectancy of the trunk sewer by 25 to 30 years. Construction is scheduled in 2010.

03-59 Miller-Holder Trunk Sewer Relief. This project would increase the capacity of the Miller-Holder Trunk sewer in the City of Buena Park. Improvements could include installation of 9,800 feet of 24- to 36-inch diameter pipe in Artesia Boulevard between Dale Street and Knott Avenue, and in Knott Avenue between Artesia Boulevard and 8th Street. Construction is scheduled in 2010.

03-60 Beach Trunk-Knott Interceptor Sewer Relief. This project would increase the capacity of the Beach Relief Trunk and the Knott Interceptor sewers in the City of Buena Park. Improvements could include installation of 11,100 feet of 42- to 48-inch diameter pipe in Kingman Avenue between Tulare Street and Artesia Boulevard, in Artesia Boulevard between Kingman Avenue and Knott Avenue, and in Knott Avenue between Artesia Boulevard and Orangethorpe Avenue. Construction is scheduled in 2010.

05-47 Balboa Trunk Sewer Rehabilitation. This project would rehabilitate the existing Balboa Trunk sewer along Newport and Balboa Boulevards between the "A" Street Pump Station and the Lido Pump Station in the City of Newport Beach. The scope of the project includes assessment of approximately 12,600 feet of 15-inch and 24-inch of pipe. It is likely that a liner would be installed in the pipe to restore structural integrity. Deteriorated



\\gall\gis2\ocsd\plots\Figure 3_Improvements.mxd 9/22/2006

- LEGEND**
- Proposed Improvements
 - OCSD Boundary
 - City Boundaries
 - Freeways

Note: Identification Numbering of Proposed Improvements correspond with Table 2.

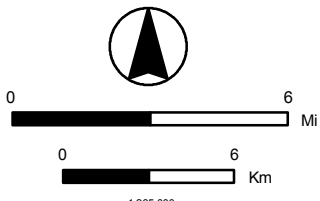


Figure 3
Proposed Improvements
Orange County Sanitation District

Source: OCSD GIS Data, Thomas Brothers 2002.

blank page

manholes would be coated with a protective liner or replaced. The project would increase the life expectancy of the trunk sewer by 25 to 30 years. Construction is scheduled in 2010.

05-XX Newport Force Main Upgrades. The Sanitation District is in the process of assessing the condition of pipe in the Newport Beach force main system. The force main system extends from Bay Bridge and A Street pump stations to Bitter Point pump station in Newport Beach, along Coast Highway and Newport and Balboa Boulevards. Improvements could include upsizing and replacement of existing pipe and could be scheduled for construction as early as 2010, depending on the findings of the assessment.

05-61 Bayside Drive Improvement. This project would rehabilitate the existing Bayside Drive Trunk sewer along Bayside Drive between Jamboree Road and El Paseo Drive in the City of Newport Beach. The scope of the project includes approximately 3,500 feet of 36-inch pipe. It is likely that a liner would be installed in the pipe to prevent corrosion. The project would increase the life expectancy of the trunk sewer by 25 to 30 years. Construction is scheduled in 2009.

05-63 Dover Drive Trunk Sewer Relief. This project would increase the capacity of the Dover Drive Trunk sewer in the City of Newport Beach to accommodate planned growth and wet weather flows. The project could include replacement of portions of the existing Dover Trunk sewer as well as modifications to local sewers and installation of new sewer pipe in the area tributary to the Dover Trunk sewer. The existing 10,200-foot sewer extends along Dover Drive from Irvine Drive to Pacific Coast Highway and along Pacific Coast Highway from Dover Drive to the Rocky Point pump station near Balboa Bay Club & Resort. Construction is scheduled in 2009.

06-17 District 6 Trunk Sewer Relief. This project would increase the capacity of the District 6 Trunk which serves the Cities of Costa Mesa and Newport Beach. The existing 3,700-foot sewer ranges from 12 to 18 inches in diameter and extends along Pomona Avenue in Costa Mesa and along Newport Boulevard to Coast Highway in Newport Beach. Construction is scheduled in 2009.

06-18 Fairview Road Trunk Sewer Relief. This project would increase the capacity of the Fairview Trunk sewer in the City of Costa Mesa. The deficient 9,800-foot sewer ranges from 21 to 30 inches in diameter and extends along Fairview Avenue between Newport Boulevard and Baker Street. Alternatives for addressing existing capacity deficiencies will be considered prior to design of proposed trunk improvements. Construction is scheduled in 2009.

07-60 Browning Subtrunk Sewer Relief. This project would increase the capacity of the Browning Subtrunk sewer in the City of Tustin and in unincorporated Orange County. The existing 7,800-foot sewer ranges from 8 to 12 inches in diameter and extends along Browning Avenue between Rainbow Drive and Mitchell Avenue. Construction is scheduled in 2009.

07-62 Von Karman Trunk Sewer Relief. This project would increase the capacity of the Von Karman Trunk sewer in the City of Irvine. The deficient 700-foot section of 12-inch sewer extends along Campus Drive west of Martin Avenue. Alternatives for addressing existing capacity deficiencies would be considered prior to design of proposed trunk improvements. Construction is scheduled in 2011.

11-25 Edinger-Bolsa Chica Trunk Improvements. This project would increase the capacity of the Edinger-Bolsa Chica Trunk sewer in the City of Huntington Beach. The deficient 4,000-foot section of 12-inch diameter sewer extends along Bolsa Chica Street between Bolsa Avenue and Robinwood Drive. Alternatives for projected capacity deficiencies would be considered prior to design of proposed trunk improvements. Construction is scheduled in 2013.

11-31 Lake Avenue Interceptor Sewer Relief. This project would increase the capacity of the Lake Avenue Trunk sewer in the City of Huntington Beach. The existing trunk sewer ranges from 15 to 18 inches in diameter and extends along Lake Avenue between Adams Avenue and Pacific Coast Highway. Simulated deficiencies would be confirmed and alternatives considered prior to design of proposed trunk improvements. Construction is scheduled in 2008.

1.5 Discussion of Potential Impacts

The PEIR will focus on potential impacts associated with the proposed Sanitation District service area annexations and proposed improvements to the collection system. The proposed Plan could have potentially significant impacts to the following environmental areas: air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, and transportation and traffic. Potentially significant impacts associated with these environmental areas will be evaluated in the PEIR. The Environmental Checklist and Environmental Evaluation are provided in the following sections.

2.0 Environmental Checklist Form

1. Project Title:

Service Area Annexation and Collection System Improvement Plan (Plan)

2. Lead Agency Name and Address:

Orange County Sanitation District (Sanitation District)
10844 Ellis Avenue
Fountain Valley, CA 92708

3. Contact Person and Phone Number:

Jim Burror: (714) 593-7335

4. Project Location:

Sanitation District Collection System Service Area

5. Project Sponsor's Name and Address:

Orange County Sanitation District (Sanitation District)
10844 Ellis Avenue
Fountain Valley, CA 92708

6. General Plan Designation:

The collection system service area is largely designated as residential, commercial, and industrial.

7. Zoning:

The collection system service area is largely zoned to reflect residential, commercial, and industrial use designations.

8. Description of Project:

The Sanitation District proposes to annex unincorporated property in Orange County that is directly adjacent to or surrounded by the current Sanitation District service area. This annexation would facilitate abandonment of existing septic tanks in residential areas and provide an alternative to installation of new septic tanks in vacant areas. The Sanitation District also proposes to make improvements to the regional collection system to accommodate existing and planned growth in northern and central Orange County.

9. Surrounding Land Uses and Setting:

The collection system service area is highly urbanized and primarily consists of residential, commercial, and industrial uses, with more limited recreational, agricultural, and open space uses.

10. Other Public Agencies Whose Approval is Required:

The Sanitation District may be required to obtain approvals from the County of Orange, LAFCO, resource agencies, and the various cities that fall within its service area. Such approvals may include encroachment permits, easements, traffic lane closure agreements, and construction storm water permits.

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.

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

Determination: (To be completed by the 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

Evaluation of Environmental Impacts:

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Less Than Significant With Mitigation Incorporation” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, “Earlier Analyses,” may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Incorporation,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a) the significance criteria or threshold, if any, used to evaluate each question; and
 - b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. GEOLOGY AND SOILS – Would the project:

- | | | | | |
|--|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

- | | | | | |
|---|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VIII. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level, which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XI. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XII. POPULATION AND HOUSING – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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:				
a) Fire protection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XV. TRANSPORTATION/TRAFFIC – Would the project:				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVI. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively 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)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3.0 Environmental Evaluation

The following evaluation provides responses to the questions in the Environmental Checklist. A brief explanation for each question in the Environmental Checklist is provided to adequately support each impact determination. All responses consider the whole of the action involved, including construction and operational impacts as well as direct and indirect impacts. Environmental factors potentially affected by the proposed project are presented below and organized according to the format of the Environmental Checklist.

I. Aesthetics

Would the project:

- a) Have a substantial adverse effect on a scenic vista?

No Impact – All construction would occur within developed areas and within the existing collection system right-of-way. The proposed annexations would have no effect on a scenic vista. This issue will not be addressed in the PEIR.

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

No Impact – The proposed Plan would not affect a state scenic highway designated by the California Department of Transportation (Caltrans) under the California Scenic Highways Program (Caltrans, 2000). This issue will not be addressed in the PEIR.

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact – The proposed Plan would include the construction of collection system improvements. All construction would occur within developed areas and within existing collection system rights-of-way. Temporary impacts associated with construction activity would be less than significant. These impacts would not substantially degrade the existing visual character or quality of the site and its surroundings because they would occur within developed areas and within existing collection system rights-of-way. Collection system improvements would primarily be located below ground surface and their operation would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed annexations would have no impact on the existing visual character or quality of the site and its surroundings. This issue will not be addressed in the PEIR.

- 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 proposed Plan would include the construction and operation of collection system improvements. Construction activities would primarily occur during the day and would not create a new source of substantial light or glare that

would adversely affect daytime views in the area. Construction activities would occasionally occur at nighttime to minimize potential daytime traffic impacts. However, nighttime construction would be infrequent and night lighting would be focused to areas where activities are occurring and all light sources would be directed away from any residential areas or open areas frequented by wildlife. Because night lighting would be infrequent and would occur within developed areas, within existing collection system rights-of-way, it would not create a new source of substantial light or glare that would adversely affect nighttime views in the area. Collection system improvements would primarily be located below ground surface and their operation would not create a new source of substantial light or glare that would adversely affect nighttime views in the area. The proposed annexations would have no impact on day or nighttime views in the area. This issue will not be addressed in the PEIR.

II. Agricultural 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 (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- 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?

No Impact - The proposed Plan is not located in any areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Additionally, the proposed Plan does not involve converting farmland to non-agricultural use. The proposed Plan would have no impact on any areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. This issue will not be addressed in the PEIR.

- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. These areas are not zoned for agricultural use and are not under a Williamson Act contract. The proposed annexations would not conflict with zoning for agricultural use, or a Williamson Act contract. This issue will not be addressed in the PEIR.

- 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?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. The proposed annexations would not result in the conversion of Farmland to non-agricultural use. This issue will not be addressed in the PEIR.

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.

Significance Criteria

Thresholds of significance for air emissions have been established by the South Coast Air Quality Management District (SCAQMD) and are set forth in the SCAQMD CEQA Air Quality Handbook, November 1993 Revision. These thresholds are provided below.

Thresholds of Significance for Construction Emissions:

- 75 pounds per day of reactive organic compounds (ROC)
- 100 pounds per day of nitrogen oxides (NO_x)
- 550 pounds per day of carbon monoxide (CO)
- 150 pounds per day of particulate matter less than 10 microns in diameter (PM₁₀)
- 150 pounds per day of sulfur oxides (SO_x)

Projects in the South Coast Air Basin with construction related emissions that exceed any of the emissions thresholds may be considered to have significant air quality impacts.

Thresholds of Significance for Operational Emissions:

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

Projects in the South Coast Air Basin with construction related emissions that exceed any of the emissions thresholds may be considered to have significant air quality impacts.

Would the project:

- a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact - The proposed Plan would not conflict with or obstruct implementation of the Air Quality Management Plan (AQMP) prepared by the SCAQMD. This issue will not be addressed in the PEIR.

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact - The proposed Plan is located in the SCAQMD South Coast Air Basin. Potential air quality impacts associated with the proposed Plan would result from temporary construction activities and ongoing operations activities. Emissions associated with construction and operations could exceed thresholds of significance. The PEIR will evaluate potential emissions impacts and recommend mitigation measures, if needed.

- 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 that exceed quantitative thresholds for ozone precursors)?

Potentially Significant Impact – Potential air quality impacts associated with the proposed Plan would result from temporary construction activities and ongoing operations activities. As described in Response III. B, the proposed Plan could result in the exceedence of a threshold of significance. The proposed Plan may result in a cumulatively considerable net increase of a criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. The PEIR will evaluate potential impacts associated with cumulatively considerable net increases of criteria pollutants and recommend mitigation measures, if needed.

- d) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact - Sensitive receptors include schools, hospitals, and convalescent homes. Children, elderly people, and the infirm are considered to be more sensitive than others to criteria air pollutants. Criteria air pollutants are those that are associated with numerous effects on human health. As described in Response III. B, the proposed Plan could result in the exceedence of a threshold of significance. This may result in the exposure of sensitive receptors to substantial pollutant concentrations. The PEIR will evaluate potential impacts associated with exposure of sensitive receptors to substantial pollutant concentrations and recommend mitigation measures, if needed.

- e) Create objectionable odors affecting a substantial number of people?

Potentially Significant Impact – The proposed Plan activities could create a minimal amount of objectionable odors resulting from the use of heavy equipment. Collection system improvements could also result in potential exposure to the environment of odorous gases associated with wastewater systems. The PEIR will evaluate potential impacts associated with objectionable odors and recommend mitigation measures, if needed.

IV. Biological Resources

Would the project:

- 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?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way, and generally would not affect habitat or identified species. However, there may be limited segments that could potentially have an adverse effect on habitat or identified species. The PEIR will evaluate potential impacts to habitat or identified species and will recommend mitigation measures, if needed.

- 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 US Fish and Wildlife Service?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way, and generally would not support riparian habitat or other sensitive natural communities. However, there may be limited segments that could potentially have an adverse effect on riparian habitat or other sensitive natural communities. The PEIR will evaluate potential impacts to riparian habitat or other sensitive natural communities and will recommend mitigation measures, if needed.

- 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?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way, and generally do not contain any federally protected wetlands; nor are the proposed annexations located near any federally protected wetlands. However, there may be limited segments that could potentially have an adverse effect on federally protected wetlands. The PEIR will evaluate potential impacts to federally protected wetlands and will recommend mitigation measures, if needed.

- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way, and would not support native habitat or any migratory fish or wildlife species. The proposed annexations would have no effect on biological resources. No impacts to these resources are anticipated as a result of the proposed Project. This issue will not be addressed in the PEIR.

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way, and would not conflict with any local policies or ordinances protecting biological resources. The proposed annexations would have no effect on biological resources. No impact with any local policies or ordinances protecting biological resources would occur. This issue will not be addressed in the PEIR.

- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact - The proposed collection system improvements are outside of the Orange Coastal/Central Natural Community Conservation Plan (NCCP), which is a special area

management plan established to protect prime habitat and state-listed species in Orange County. The proposed annexations would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. This issue will not be addressed in the PEIR.

V. Cultural Resources

Would the project:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way, and would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5. The proposed annexations would have no effect on historical resources. The proposed Plan would have no impact on a historic resource as defined in Section 15064.5. This issue will not be addressed in the PEIR.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. As such, the proposed improvements would primarily impact areas that have already been disturbed. However, construction could involve excavation into undeveloped lands. The PEIR will evaluate potential impacts to archaeological resources and will recommend mitigation measures, if needed.

- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. As such, the proposed improvements would primarily impact areas that have already been disturbed. However, construction could involve excavation into undeveloped lands. The PEIR will evaluate potential impacts to paleontological resources and will recommend mitigation measures, if needed.

- d) Disturb any human remains, including those interred outside of formal cemeteries?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. As such, the proposed improvements would primarily impact areas that have already been disturbed. However, construction could involve excavation into undeveloped lands. The PEIR will evaluate potential impacts to human remains and will recommend mitigation measures, if needed.

VI. Geology and Soils

Would the project:

- 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.

Potentially Significant Impact – The proposed Plan falls within several earthquake fault zones, as delineated on the Alquist-Priolo Earthquake Fault Zoning Map. The proposed collection system improvements are to an existing system and would be designed and constructed in conformance with the Uniform Building Code and California Building Code seismic engineering standards (UBC, 1997 and CBC, 2001, respectively) and other applicable building codes. The proposed annexations would result in no change to the exposure of people or structures to adverse effects associated with rupture of a known earthquake fault. Exposure of people or structures to potential substantial adverse effects, including risk of loss, injury, or death, from the rupture of a known earthquake fault as a result of the proposed collection system improvements could occur. The PEIR will evaluate potential impacts associated with rupture of a known earthquake fault and will recommend mitigation measures, if needed.

- ii) Strong seismic ground shaking?

Potentially Significant Impact – The proposed Plan is located in a seismically active area, as is much of Southern California, and there is the potential for strong seismic ground shaking. Part of the Newport-Inglewood Fault is within the proposed Plan area. Other notable faults that are outside the proposed Plan area, but within the regional vicinity, include: the Palos Verdes Fault, Elsinore-Whittier Fault, and the San Andreas Fault. The proposed collection system improvements are to an existing system and would be designed and constructed in conformance with the Uniform Building Code and California Building Code seismic engineering standards (UBC, 1997 and CBC, 2001, respectively) and other applicable building codes. The proposed annexations would result in no change to the exposure of people or structures to adverse effects associated with strong seismic ground shaking. Exposure of people or structures to potential substantial adverse effects, including risk of loss, injury, or death, from strong seismic ground shaking as a result of the proposed collection system improvements could occur. The PEIR will evaluate potential impacts associated with strong seismic ground shaking and will recommend mitigation measures, if needed.

- iii) Seismic-related ground failure, including liquefaction?

Potentially Significant Impact – The potential for seismic-related ground failure is associated with the probability of severe ground shaking as a result of an earthquake or a nearby active fault. Liquefaction is the phenomenon where saturated granular

soils develop high pore water pressures during seismic shaking and behave like a heavy fluid. This phenomenon generally occurs in areas of high seismicity where groundwater is shallow and loose granular soils or hydraulic fill soils subject to liquefaction are present. For liquefaction to develop loose granular sediments below the groundwater table must be present and shaking of sufficient magnitude and duration must occur. Parts of the proposed collection system improvements would occur in areas that may be vulnerable to liquefaction. In these areas appropriate design considerations would be made to ensure the proposed collection system improvements do not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death, from seismic-related ground failure, including liquefaction. The proposed annexations would result in no change to the exposure of people or structures to adverse effects associated with seismic-related ground failure, including liquefaction. Exposure of people or structures to potential substantial adverse effects, including risk of loss, injury, or death, from seismic-related ground failure, including liquefaction, as a result of the proposed collection system improvements could occur. The PEIR will evaluate potential impacts associated with strong seismic-related ground failure, including liquefaction, and will recommend mitigation measures, if needed.

iv) Landslides?

Less Than Significant Impact – The proposed collection system improvements are to an existing system and would not result in a new exposure of people or structures to adverse effects associated with landslides. The proposed annexations would result in no change to the exposure of people or structures to adverse effects associated with landslides. Exposure of people or structures to potential substantial adverse effects, including risk of loss, injury, or death, associated with landslides as a result of the proposed collection system improvements and proposed annexations is considered to be a less than significant impact. This issue will not be addressed in the PEIR.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact – The proposed collection system improvements would require excavation of earthen material and, where suitable, on-site soils would be reused as fill. Excavation spoil would be watered or stored within contained areas to limit loss of topsoil due to wind erosion. Additionally, the proposed collection system improvements would be to an existing system and would occur within developed areas and within existing collection system rights-of-way. In this regard, exposure of topsoil to loss due to wind erosion would be limited to areas where collection system improvements occur. The proposed annexations would have no impact to soil erosion or loss of topsoil. The proposed Plan would result in a less than significant impact associated with substantial soil erosion or loss of topsoil. This issue will not be addressed in the PEIR.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Potentially Significant Impact – Evaluation of liquefaction and landslides is provided in responses VI a. iii and iv. The proposed collection system improvements would be designed and constructed in conformance with the Uniform Building Code and California Building Code seismic engineering standards (UBC, 1997 and CBC, 2001, respectively) and other applicable building codes. Backfill would be placed to meet standard engineering design requirements and local grading practices. The proposed annexations would not result in a new impact associated with being located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. Potential impacts due to an unstable geologic unit or soil, including on-or offsite landslides, lateral spreading, subsidence, liquefaction, or collapse could occur. The PEIR will evaluate potential impacts associated with on-or off-site lateral spreading, subsidence, or collapse, and will recommend mitigation measures, if needed.

- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact – Section 1803.2 of the Uniform Building Code pertains to foundations and requires special design considerations for structures resting on soils with an expansion index greater than 20, as defined by Table 18-1-B of the UBC. The proposed collection system improvements would be to an existing system and would be designed in compliance with requirements of governing jurisdictions and applicable building codes. The proposed annexations would not result in a new impact associated with expansive soils. The proposed Plan would not result in a significant adverse impact from expansive soils, as defined in Table 18-1-B of the UBC, creating substantial risk to life or property. This issue will not be addressed in the PEIR.

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

No Impact – No septic tanks or alternative wastewater disposal systems would be installed as part of the proposed Plan. The proposed Plan would not result in impacts related to septic tanks or alternative wastewater disposal systems. Further, this effort would allow for the removal of existing septic tanks in the annexation areas. This issue will not be addressed in the PEIR.

VII. Hazards and Hazardous Materials

Would the project:

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

Potentially Significant Impact – The proposed collection system improvements could use construction material that could be considered hazardous. Operation of the proposed collection system improvements could involve the transport and use of material similar to that could be considered hazardous. The PEIR will evaluate potential impacts associated with routine transport, use, or disposal of hazardous materials and will recommend mitigation measures, if needed.

- 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?

Potentially Significant Impact – Refer to response VII. a. The proposed collection system improvements could generate hazardous materials. The PEIR will evaluate potential impacts associated with upset and accident conditions involving the release of hazardous materials into the environment and will recommend mitigation measures, if needed.

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

Potentially Significant Impact – Construction and operation of the proposed collection system improvements could potentially emit hazardous emissions, or handle hazardous or acutely hazardous materials or waste within one-quarter mile of an existing or proposed school. The PEIR will evaluate potential impacts associated with hazardous emissions or handling hazardous materials within one-quarter mile of an existing or proposed school and will recommend mitigation measures, if needed.

- 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?

No Impact – The proposed Plan would have no impacts associated with hazards to the public or environment that could result from being located on a site on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. This issue will not be addressed in the PEIR.

- 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?

No Impact – The proposed Plan would have no safety hazard impacts on people associated with activities within an airport land use plan. This issue will not be addressed in the PEIR.

- 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?

No Impact – The proposed Plan would have no safety hazard impacts on people associated with activities within the vicinity of a private airstrip. This issue will not be addressed in the PEIR.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Potentially Significant Impact - Construction of collection system improvements within existing collection system rights-of-way could encroach on traffic lanes along arterial roadways and could hinder emergency evacuation. The PEIR will evaluate potential traffic impacts and recommend mitigation measures, if needed.

- 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 proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. The proposed annexations would have no impact associated with wildland fires. The proposed Plan is not anticipated to have an adverse impact related to the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. This issue will not be addressed in the PEIR.

VIII. Hydrology and Water Quality

Would the project:

- a) Violate any water quality standards or waste discharge requirements?

Potentially Significant Impact – During construction of proposed collection system improvements, activities such as excavation and structure construction would result in the disturbance of soil. During storm events, stormwater runoff could carry sediments and other substances from construction activities, resulting in stormwater pollution discharges to the storm drain system and, ultimately, nearby receiving waters. The PEIR will evaluate potential water quality impacts and recommend mitigation measures, if needed.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No Impact – Construction of proposed collection system improvements would not result in a depletion of groundwater supplies and operation would not interfere with groundwater recharge. The proposed annexations would have no affect on groundwater supplies or recharge. This issue will not be addressed in the PEIR.

- 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?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way and would not substantially alter the existing drainage pattern of the site or area. The proposed annexations would not affect the existing drainage pattern of the site or area, would not alter the course of a river or stream, and would not result in substantial erosion or siltation on- or offsite. This issue will not be addressed in the PEIR.

- 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?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way and would not affect the existing drainage pattern of the site or area, would not alter the course of a river or stream, and would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. The proposed annexations would not affect the existing drainage pattern of the site or area, would not alter the course of a river or stream, and would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. This issue will not be addressed in the PEIR.

- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact - The proposed collection system improvements would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. All construction dewatering associated with excavation would be discharged to the sanitary sewer. The proposed annexations would not affect the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. This issue will not be addressed in the PEIR.

- f) Otherwise substantially degrade water quality?

Potentially Significant Impact - Refer to Response VIII. a, which addresses impacts to water quality. The PEIR will evaluate potential water quality impacts and recommend mitigation measures, if needed.

- 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?

No Impact - The proposed Plan does not include housing. This issue will not be addressed in the PEIR.

- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact - The proposed collection system improvements would primarily occur below ground surface and would not impede or redirect flood flows. Limited above ground improvements consist of upgrades to existing facilities and would not result in the impediment or redirection of flood flows. The proposed annexations do not include the placement of structures. This issue will not be addressed in the PEIR.

- 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?

No Impact - The proposed Plan would not 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. This issue will not be addressed in the PEIR.

- j) Inundation by seiche, tsunami, or mudflow?

No Impact – The proposed Plan would not likely have impacts related to seiche, tsunami, or mudflow. This issue will not be addressed in the PEIR.

IX. Land Use and Planning

Would the project:

- a) Physically divide an established community?

No Impact – The proposed Plan would include the construction of collection system improvements. All construction would occur within developed areas and within existing collection system rights-of-way and would not physically divide an established community. Additionally, the proposed annexations would have no effect on an established community. This issue will not be addressed in the PEIR.

- 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?

Potentially Significant Impact – The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. Construction of collection system improvements may conflict with an existing plan or regulation. The PEIR will evaluate potential land use and planning impacts associated with conflicts with applicable land use plans, policies, or regulations and recommend mitigation measures, if needed.

As described in the project description, annexation to the Sanitation District service area is coordinated with the LAFCO, local cities, and local sewerage agencies before service is initiated. Property is annexed by the Sanitation District in accordance with Ordinance No. OCSD-29. The ordinance stipulates that the property be annexed to an appropriate local sewerage agency, or that written approval is obtained from the designated local sewerage agency, such as a city, for the purpose of obtaining access to and use of the local sewer system that connects to the Sanitation District's system. Because the proposed annexations would be coordinated with LAFCO and in accordance with existing ordinances, and because the proposed annexations would not change the existing land use of the areas, the proposed Plan would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This issue will not be addressed in the PEIR.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact – The proposed collection system improvements are outside of the NCCP, which is a special area management plan established to protect prime habitat and state-listed species in Orange County. The proposed annexations would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. This issue will not be addressed in the PEIR.

X. Mineral Resources

Would the project:

- 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?

No Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way and would not 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. The proposed annexations would have no affect on mineral resources. This issue will not be addressed in the PEIR.

- 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 collection system improvements and annexations would have no affect on mineral resources. This issue will not be addressed in the PEIR.

XI. Noise

Would the project result in:

- 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?

Potentially Significant Impact – Temporary noise increases along collection system improvement areas would occur during construction. Additionally, system improvements could result in equipment upgrades that could affect the noise environment. The PEIR will evaluate potential noise impacts, including 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, and recommend mitigation measures, if needed.

- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact – Construction of collection system improvements could result in the exposure of persons to or generation of groundborne vibration or noise. The PEIR will evaluate potential noise exposure impacts and recommend mitigation measures, if needed.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact – System improvements could result in equipment upgrades that produce a substantial permanent increase in ambient noise levels. The PEIR will evaluate potential noise impacts and recommend mitigation measures, if needed.

- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact – System improvements could result in equipment upgrades that produce a substantial temporary or periodic increase in ambient noise levels. The PEIR will evaluate potential noise impacts and recommend mitigation measures, if needed.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Potentially Significant Impact – Construction of a segment of the collection system improvements would occur within the vicinity of a public airport and could result in the exposure of people residing or working in the area to excessive noise levels. The PEIR will evaluate potential noise exposure impacts and recommend mitigation measures, if needed.

- 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?

Potentially Significant Impact – Construction of a segment of the collection system improvements would occur within the vicinity of a private airstrip and could result in the exposure of people residing or working in the area to excessive noise levels. The PEIR will evaluate potential noise exposure impacts and recommend mitigation measures, if needed.

XII. Population and Housing

Would the project:

- 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)?

Potentially Significant Impact – The proposed collection system improvements are part of the Sanitation District's CIP and were identified in the Sanitation District's April 2006 Strategic Plan Update, which included capacity analysis of the trunk sewer system. In particular, the proposed collection system improvements were identified to address existing and projected deficiencies in the regional trunk sewer system.

The purpose of the proposed annexations is to reduce the potential for groundwater contamination from failing septic tanks. Annexation to the Sanitation District service area occurs in accordance with Ordinance No. OCSD-29, and is coordinated with the LAFCO, local cities, and local sewerage agencies before service is initiated. Annexation to the Sanitation District means that property owners could access regional sewerage and wastewater treatment services. However, sewer connection and septic tank abandonment for the proposed annexation areas are not part of the proposed Plan.

Where an adjacent city has a sphere of influence encompassing an unincorporated area, the city's CEQA documentation for its General Plan should identify sewerage service

facilities or policies for eventual sewer service of the sphere area. As shown in Table 1, local sewer agencies have been identified for the six areas. For the proposed annexations, local sewer system planning is currently the responsibility of the County of Orange. (Refer to County of Orange General Plan, Board of Supervisors Resolution 04-106, April 20, 2004). Although the proposed annexations would not change the land use and planning policies of an approved General Plan, it nonetheless could potentially induce population growth by removing an obstacle to growth. The PEIR will evaluate potential growth inducing impacts and will recommend mitigation measures, if needed.

- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact - The proposed Plan would have no impact associated with displacing existing housing or necessitating the construction of replacement housing. This issue will not be addressed in the PEIR.

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact - The proposed Project would have no impact associated with displacing people or necessitating the construction of replacement housing. This issue will not be addressed in the PEIR.

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?

Potentially Significant Impact - The proposed collection system improvements could result in temporary construction impacts associated with disruption of fire and emergency services. The PEIR will evaluate potential public services impacts and will recommend mitigation measures, if needed.

Sewer connection and septic tank abandonment for the proposed annexation areas are not part of the proposed Plan. However, in the future sewer connection and septic tank abandonment could occur in these areas; evaluation of such impacts would be completed by a responsible agency prior to their occurrence. Therefore, the proposed annexations would not result in an adverse impact or additional need for fire protection,

police protection, schools, parks, or other public facilities. This issue will not be addressed in the PEIR.

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?

No Impact - The proposed collection system improvements and annexations would not increase the use of existing neighborhood and regional parks or other recreational facilities. This issue will not be addressed in the PEIR.

- 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 collection system improvements and annexations do not include recreational facilities or require the construction or expansion of recreational facilities. This issue will not be addressed in the PEIR.

XV. Transportation/Traffic

Would the project:

- 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)?

Potentially Significant Impact - The proposed collection system improvements would occur within developed areas and within existing collection system rights-of-way. The existing collection system rights-of-way are generally located within arterial roadways. Construction of collection system improvements could encroach on traffic lanes along arterial roadways and could result in a short-term increase in roadway and intersection congestion. The PEIR will evaluate potential traffic impacts and recommend mitigation measures, if needed.

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

Potentially Significant Impact - Construction of collection system improvements within existing collection system rights-of-way could encroach on traffic lanes along arterial roadways on a short-term basis, and could result in a level of surface impact. The PEIR will evaluate potential traffic impacts and recommend mitigation measures, if needed.

- 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?

No Impact - The proposed Plan would have no impact on air traffic patterns. This issue will not be addressed in the PEIR.

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

No Impact – The proposed Plan would not increase hazards due to design features or incompatible uses. This issue will not be addressed in the PEIR.

- e) Result in inadequate emergency access?

Potentially Significant Impact - Construction of collection system improvements within existing collection system rights-of-way could encroach on traffic lanes along arterial roadways and could hinder emergency access on a short-term basis. The PEIR will evaluate potential traffic impacts and recommend mitigation measures, if needed.

- f) Result in inadequate parking capacity?

Less Than Significant Impact – A small amount of curbside parking in front of proposed collection system improvements may be blocked off for construction vehicles and trucks. This would be temporary, during construction activities, and is not anticipated to result in inadequate parking. Operation of the proposed collection system improvements would not require parking spaces. The proposed annexations would have no impact to parking capacity. This issue will not be addressed in the PEIR.

- g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact – The proposed Plan would not impact adopted policies, plans, or programs supporting alternative transportation. This issue will not be addressed in the PEIR.

XVI. Utilities and Service Systems

Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact – The proposed collection system improvements are part of the Sanitation District's CIP and were identified in the Sanitation District's April 2006 Strategic Plan Update, which included capacity analysis of the trunk sewer system. In particular, the proposed collection system improvements were identified to address existing and projected deficiencies in the regional trunk sewer system. Because the collection system improvements are specific to existing and projected deficiencies in the regional trunk sewer system, they would not result in an unanticipated increase in the Sanitation District's treatment capacity. The proposed annexations would have no impact associated with an exceedence of wastewater treatment requirements. This issue will not be addressed in the PEIR.

- 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?

No Impact – The proposed collection system improvements are part of the Sanitation District’s CIP and were identified in the Sanitation District’s April 2006 Strategic Plan Update, which included capacity analysis of the trunk sewer system. In particular, the proposed collection system improvements were identified to address existing and projected deficiencies in the regional trunk sewer system. Because the collection system improvements are specific to existing and projected deficiencies in the regional trunk sewer system, they would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities above what is included in the proposed Plan. The proposed annexations would have no impact associated with construction of new water or wastewater treatment facilities or expansion of existing facilities. This issue will not be addressed in the PEIR.

- 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?

No Impact – No new or expansion of existing of existing storm water drainage facilities would result or be required as part of the proposed Plan. This issue will not be addressed in the PEIR.

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

No Impact – The proposed Plan would not require the provision of new water supplies. Water entitlements and resources would not be impacted by the proposed Plan. This issue will not be addressed in the PEIR.

- 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?

No Impact – The proposed collection system improvements are part of the Sanitation District’s CIP and were identified in the Sanitation District’s April 2006 Strategic Plan Update, which included capacity analysis of the trunk sewer system. In particular, the proposed collection system improvements were identified to address existing and projected deficiencies in the regional trunk sewer system. Because the collection system improvements are specific to existing and projected deficiencies in the regional trunk sewer system, they would not result in an impact associated with wastewater treatment capacity. The proposed annexations would have no impact associated with wastewater treatment capacity. This issue will not be addressed in the PEIR.

- f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?

Less Than Significant Impact – Small amounts of debris or solid waste may be generated during construction of the proposed collection system improvements and would be transported to an approved solid waste disposal facility. Based on the small quantity of material, the proposed collection system improvements are not expected to affect the capacity of existing landfills. The proposed annexations would have no impact to the capacity of existing landfills. This issue will not be addressed in the PEIR.

- g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact – Solid waste produced by the proposed Plan would be disposed of at a properly permitted facility in accordance with federal and state laws. This issue will not be addressed in the PEIR.

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?

Potentially Significant Impact – The proposed Plan could potentially degrade air quality or have an environmental effect associated with biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, and transportation/traffic.

- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively 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)?

Potentially Significant Impact – The proposed Plan could result in impacts that are individually limited, but cumulatively considerable. The combination of Plan-specific impacts with the impacts of past, present, and reasonably foreseeable future projects could result in a significant impact.

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

Potentially Significant Impact – The proposed Plan could have significant environmental effects that could cause substantial adverse effects on human beings, either directly or indirectly.

4.0 Preparers and Contributors

Orange County Sanitation District

John Linder - Engineering Manager

Jim Burror - Engineering Supervisor

Ann Tobin - Engineer

CH2M HILL

Matt Gordon - Project Manager

Jennifer Scholl - Senior Technical Oversight

blank page

5.0 References

California Building Standards Commission. 2001. *California Building Code*.

California Building Standards Commission. 1997. *Uniform Building Code*.

California Department of Conservation, Division of Mines and Geology. 1999. *Special Publication 42, Fault-Rupture Hazard Zones in California*.

California Department of Transportation (Caltrans). 2000. *California Scenic Highway Program. Officially Designated State Scenic Highways*. December.

County of Orange. 2004. *General Plan. Resources and Development Management Department. Board of Supervisors Resolution 04-106*. April.

County of Orange. 1996. *Southern Subregion Natural Community Conservation Plan. Resources and Development Management Department*.

Orange County Sanitation District. 2006. *Budget Book Fiscal Years 2006-07 & 2007-08*.

Orange County Sanitation District. 2006. *Collection System Model and Strategic Plan Update Job No. J-101*. April.

Orange County Sanitation District. 1999. *Program Environmental Impact Report. Orange County Sanitation District 1999 Strategic Plan*. June.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*.

blank page

Attachment A

Notice of Preparation Response Form

This form is provided to assist in responding to the Notice of Preparation. If more space is required, or if you prefer a different format, please feel free to deviate from this form as necessary. If you have input, please complete the form and return; otherwise, it will be assumed that you do not wish to be retained on this distribution list to receive the Draft EIR.

Date of Response _____

Agency _____
Mailing Address _____
City _____ State _____ Zip _____
Telephone _____
Contact Person _____

Level of Interest in Proposed Facilities:

- No interest (delete from distribution list)
- Minor interest (retain name on distribution list)
- Major interest (state key areas of your concern):

Permit/Review Requirements

Do you or your agency have statutory permit authority or advisory review authority over actions within the PROJECT AREA? If so, please list.

Area of Concern	Authority	Applicability Within Project Area
-----------------	-----------	-----------------------------------

Environmental Issue Categories

Please indicate your interests and items that should be addressed in the proposed EIR.

Air Quality

Biological Resources

Cultural Resources

Geology and Soils

Hazards and Hazardous Materials

Hydrology and Water Quality

Land Use and Planning

Noise

Population and Housing

Public Services

Transportation and Traffic

B2 Notification and Mailing List

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA,)
) ss.
County of Orange)

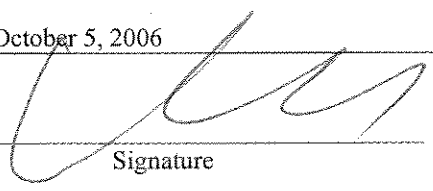
I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of **The Orange County Register**, a newspaper of general circulation, published in the city of Santa Ana, County of Orange, and which newspaper has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, under the date of 1/18/52, Case No. A-21046, that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

October 5, 2006

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct":

Executed at Santa Ana, Orange County, California, on

Date: October 5, 2006


Signature

The Orange County Register
625 N. Grand Ave.
Santa Ana, CA 92701
(714) 796-7000 ext. 2209

PROOF OF PUBLICATION

This space is for the County Clerk's Filing Stamp

RECEIVED
2006 OCT 11 PM 1:35
OCSD
Receptionist

Proof of Publication of

NOTICE OF PREPARATION
ENVIRONMENTAL IMPACT REPORT
(State Guidelines 915375)

The Orange County Sanitation District (Sanitation District or OCSD) is the lead agency under the California Environmental Quality Act (CEQA) for preparation of a Program Environmental Impact Report (PEIR) for proposed annexations to the Sanitation District's service area and improvements to its wastewater collection system. The proposed actions constitute the Sewer Area Annexation and Collection System Improvement Plan (Plan). The Sanitation District is soliciting the views of interested persons and agencies as to the scope and content of the environmental information to be evaluated in the PEIR. In accordance with CEQA, agencies are requested to review the information provided in this Notice of Preparation (NOP), and enclosed Initial Study, and provide comments on environmental issues related to the statutory responsibilities of the agency. The PEIR will address written comments submitted during this initial review period.

PUBLIC REVIEW PERIOD: In accordance with the time limit mandated by CEQA, responses to the NOP must be received by the Sanitation District no later than 30 days after receipt of this NOP. We request that comments to this NOP be received no later than November 6, 2006. Please send your comments to John Linder, Engineering Manager, at the address shown below using the NOP Response Form provided as Attachment A of the NOP, or in a letter addressed to Mr. Linder, include a return address and contact name with your comments. The Sanitation District will also accept comments on the scope of the proposed Plan at a public meeting to be held on October 17, 2006 at 1:30 PM at the address identified below.

Address: Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708
Attn: John Linder
Telephone: (714) 893-7350

The NOP and Initial Study are available for public viewing at www.ocsd.com. To access, go to Information Center and click on Environmental Impact Reports. Copies of the NOP and Initial Study are also available for public review at the following location:

Orange County Sanitation District, Administrative Office
880 - Engineering Department, 10844 Ellis Avenue, Fountain Valley, CA 92708
Public Orange County Register, Oct. 5, 2006, PG000000000000

Electronic Transmission

Orange County Sanitation District

Date: September 27, 2006

To: Public Notices
Orange County Register
FAX (714) 796-6059
Email: lily_montes@notes.freedom.com

From: John Linder, Engineering Manager
(714) 593-7350
FAX (714) 962-5018
Email: jlinder@ocsd.com

Please publish the following one time, on October 5, 2006.

NOTICE OF PREPARATION
ENVIRONMENTAL IMPACT REPORT
(State Guidelines §15375)

The Orange County Sanitation District (Sanitation District or OCSD) is the lead agency, under the California Environmental Quality Act (CEQA), for preparation of a Program Environmental Impact Report (PEIR) for proposed annexations to the Sanitation District's service area and improvements to its wastewater collection system. The proposed actions constitute the Service Area Annexation and Collection System Improvement Plan (Plan). The Sanitation District is soliciting the views of interested persons and agencies as to the scope and content of the environmental information to be evaluated in the PEIR. In accordance with CEQA, agencies are requested to review the information provided in this Notice of Preparation (NOP), and enclosed Initial Study, and provide comments on environmental issues related to the statutory responsibilities of the agency. The PEIR will address written comments submitted during this initial review period.

PUBLIC REVIEW PERIOD: In accordance with the time limits mandated by CEQA, responses to the NOP must be received by the Sanitation District no later than 30 days after receipt of this NOP. We request that comments to this NOP be received no later than November 6, 2006. Please send your comments to John Linder, Engineering Manager, at the address shown below using the NOP Response Form provided as Attachment A of the NOP, or in a letter addressed to Mr. Linder. Include a return address and contact name with your comments. The Sanitation District will also accept comments on the scope of the proposed Plan at a public scoping meeting to be held on October 17, 2006 at 1:30 PM at the address identified below.

Address: Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708
Attn: John Linder

Telephone: (714) 593-7350

The NOP and Initial Study are available for public viewing at www.ocsd.com. To access, go to Information Center and click on Environmental Impact Reports. Copies of the NOP and Initial Study are also available for public review at the following location:

- Orange County Sanitation District, Administrative Office Bldg., Engineering Department, 10844 Ellis Avenue, Fountain Valley, CA 92708

CityTitle(Source)	Name(Source)	Title(Source)	Address(Source)	City(Source)	State(Source)	Zip_code(So)
City of Anaheim	Gary E. Johnson	Public Works Director	200 South Anaheim Blvd.	Anaheim,	CA	92805
City of Anaheim	Sheri Vander Dussen	Planning Director	200 South Anaheim Blvd.	Anaheim,	CA	92805
City of Buena Park	James Biery	Public Works Director	P O Box 5009	Buena Park,	CA	90622-5009
City of Buena Park	Rick Warsinski	Community Development Director	P O Box 5009	Buena Park,	CA	90622-5009
City of Costa Mesa	Allan Roeder	City Manager	P O Box 1200	Costa Mesa,	CA	92628-1200
City of Costa Mesa	Donald Lamm	Development Services Director	P O Box 1200	Costa Mesa,	CA	92628-1200
Costa Mesa Sanitary District	Robin Hamers	Manager/District Engineer	628 W. 19th Street	Costa Mesa,	CA	92627
City of Cypress	Doug Dancs	Public Works Director	P O Box 609	Cypress,	CA	90630
City of Cypress	David Belmar	Community Development Director	P O Box 609	Cypress,	CA	90630
City of Fountain Valley	Bill Ault	Public Works Director	10200 Slater Avenue	Fountain Valley,	CA	92708
City of Fountain Valley	Andy Perea	Planning Director	10200 Slater Avenue	Fountain Valley,	CA	92708
City of Fullerton	Don Hoppe	Director of Engineering	303 W. Commonwealth	Fullerton,	CA	92832
City of Fullerton	Joel W. Rosen	Acting Director Community Development	303 W. Commonwealth	Fullerton,	CA	92832
City of Garden Grove	Keith Jones	Public Works Director	P O Box 3070	Garden Grove,	CA	92842
City of Garden Grove	Susan Emery	Community Development Director	P O Box 3070	Garden Grove,	CA	92842
City of Garden Grove/Garden Grove Sanitary Dist.	Matt Fertal	General Manager	P O Box 3070	Garden Grove,	CA	92842
City of Huntington Beach	Robert Beardsley	Public Works Director	P O Box 190	Huntington Beach,	CA	92648
City of Huntington Beach	Howard Zelefski	Planning Director	P O Box 190	Huntington Beach,	CA	92648
City of Irvine	Marty Bryant	Public Works Director	P.O. Box 19575	Irvine,	CA	92623-9575
City of Irvine	Tina Christiansen	Community Development Director	P.O. Box 19575	Irvine,	CA	92623-9575
Irvine Ranch Water District	Paul D. Jones	General Manager	P O Box 57000	Irvine,	CA	92619-7000
City of La Palma	Ismile Noorbaksh	Public Works Director	7822 Walker Street	La Palma,	CA	90623
City of La Palma	Dominic Lazzaretto	Community Development Director	7822 Walker Street	La Palma,	CA	90623
City of Los Alamitos	Lawrence Jackson	Public Works Director	3191 Katella Avenue	Los Alamitos,	CA	90720-5600
Rossmoor/Los Alamitos Area Sewer Dist.	Susan E. Bell	General Manager	P.O. Box 542	Los Alamitos,	CA	90720
Midway City Sanitary District	William Nakasone	General Manager	14451 Cedarwood Avenue	Westminster,	CA	92683
City of Newport Beach	Steve Badum	Public Works Director	P O Box 1768	Newport Beach,	CA	92658-8915
City of Newport Beach	Mike Sinacori	Deputy Director Utilities Department	P O Box 1768	Newport Beach,	CA	92658-8915
City of Newport Beach	Patricia Temple	Planning Director	P O Box 1768	Newport Beach,	CA	92658-8915
City of Orange	John Sibley	City Manager	300 E. Chapman Ave	Orange,	CA	92866-1591
City of Orange	Gail Faber	Public Works Director	300 E. Chapman Ave	Orange,	CA	92866-1591
City of Orange	Alice Angus	Community Development Director	300 E. Chapman Ave	Orange,	CA	92866-1591
City of Santa Ana	James Ross	Public Works Director	P.O. Box 1988	Santa Ana,	CA	92701
City of Santa Ana	Pat Whitaker	Community Development Director	P.O. Box 1988	Santa Ana,	CA	92701
City of Seal Beach	Mark Vukojevic, P.E.	Public Works Director	211 8th Street	Seal Beach,	CA	90740-6379
City of Seal Beach	Lee Whittenberg	Development Services Director	211 8th Street	Seal Beach,	CA	90740-6379
City of Stanton	Robert H. Doss	City Engineer	7800 Katella Avenue	Stanton,	CA	90680
City of Stanton	Steve Harris	Community Development Director	7800 Katella Avenue	Stanton,	CA	90680
City of Tustin	Tim Serlet	City Engineer	300 Centennial Way	Tustin,	CA	92780
City of Tustin	Elizabeth Binsack	Community Development Director	300 Centennial Way	Tustin,	CA	92780
City of Westminster	Marwan Yonssef	Public Works Director	8200 Westminster Boulevard	Westminster,	CA	92863
City of Westminster	Donald S. Anderson	Community Development Director	8200 Westminster Boulevard	Westminster,	CA	92863
County of Orange	Bryan Speegle, Director	Resources & Dev. Management Dept.	P.O. Box 4048	Santa Ana,	CA	92702-4048
Orange County Health Care Agency	Larry Honeybourne	Environmental Health Dept.	2009 E. Edinger	Santa Ana,	CA	92705
LAFCO	Kim Koeppen		12 Civic Center Plaza, Room 235	Santa Ana,	CA	92701
LAFCO	Joyce Crosthwaite		12 Civic Center Plaza, Room 235	Santa Ana,	CA	92701
Woodruff, Spradlin & Smart	Jason Retterer		701 S. Parker Street, Suite 8000	Orange	CA	92868-4760
State Clearinghouse						
OCSD	John Linder					
OCSD	Jim Burror					
OCSD	Ann Tobin					
OCSD	Jennifer Cabral					
OCSD	Extras for counter, meeting					
CH2MHill	Jennifer Scholl					
CH2MHill	Matt Gordon					

B3 Public Meeting Sign-in Sheet

B4 Comment Letters

City of Anaheim
PLANNING DEPARTMENT



November 8, 2006

John D. Linder, Engineering Manager
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

**Re: Notice of Preparation of a Program Environmental Impact
Report for the Orange County Sanitation District (OCSD)
Service Area Annexation and Collection System Improvement
Plan**

Dear Mr. Linder:

Thank you for the opportunity to review and comment on the above-referenced environmental document. City of Anaheim staff offers the following comments on the submitted Notice of Preparation:

PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION

1. Section 1.4.2, "Collection System Improvements:

This section indicates that collection system improvements on both State College Boulevard and Magnolia Avenue will span the entire length of these arterial roadways from the southern city limit to the northern city limit. According to Table 2, Page 1-9, improvements are scheduled to occur on Magnolia Avenue between 2010 and 2012 and between 2015 and 2017 for State College Boulevard.

Staff recommends that OCSD coordinate closely with the City's Public Works Department so that any improvements are scheduled to occur with the City's planned improvements on these roadways.

Specifically, the City plans construction of a railroad undercrossing on State College Boulevard, north of Katella Avenue within the next seven (7) years and median improvements on State College Boulevard from Katella Avenue to Orangewood Avenue within the next five (5) years.

Any removal by OCSD of street improvement, structures or landscaping on State College Boulevard and Magnolia Avenue,

200 South Anaheim Boulevard
P.O. Box 3222
Anaheim, California 92803

TEL (714) 765-5139

would need to be replaced in conformance with applicable City Standard details or as agreed to by the City.

Additionally, a City Right-of-Way permit will be required and construction schedules and traffic control plans will need to be submitted to the Public Works Department for approval when the project has entered the Plans, Specification & Estimate phase so that activity can be coordinated with Stadium events and any public/private improvement projects.

2. Page 1-5, Table 1, Proposed Annexation:

Table 1 indicates that the County/City of Orange is the Local Sewer Agency for the Anaheim Hills location. Please change this to state that the City of Anaheim is the Local Sewer Agency.

3. Page 3-17, Section XV. Transportation/Traffic:

The Traffic Engineering Division emphasizes the need for traffic impact studies to be included in the project's Draft EIR. Construction-related impacts relative to State College Boulevard, Magnolia Avenue and adjacent corridors will need to be analyzed and mitigated in order to avoid associated increases in traffic due to lane closures during project construction.

4. Page 1-6, Euclid Relief Improvements:

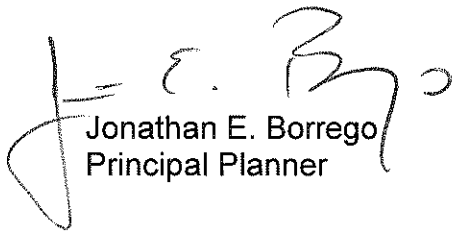
This section discusses completed improvements at this location will accommodate "projected increase in flow from planned developments such as Platinum Triangle in Anaheim." Please note that City staff is currently evaluating the potential for adding more intensity to the Platinum Triangle mixed use and office districts and has previously shared preliminary information with OCSD staff. We will forward a proposed project description once the project becomes further defined in the coming months.

5. General Comment on Document

Staff also recommends that the Draft EIR consistently address any impacts resulting from both the proposed annexations in the Anaheim Hills area as well as impacts occurring as a result of the proposed collection system improvements.

We would again like to thank you for the opportunity to comment on the Notice of Preparation/Initial Study. Please forward any further environmental documentation relative to this project to the attention at the address indicated on the bottom of this page. Please forward any questions relative to these comments to Marie Newland, Planner, (714) 765-5139, Extension 5739.

Sincerely,



Jonathan E. Borrego
Principal Planner

C: Natalie Meeks, Deputy City Engineer
John Lower, Traffic/Transportation Manager
James Ling, Acting Development Services Manager
David Kennedy, Associate Transportation Planner
Linda Johnson, Principal Planner
Khanh Chu, Associate Engineer

OCSDAnnex.doc



Arnold Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Notice of Preparation

October 3, 2006

OCS
Receptionist
Engineering SA

To: Reviewing Agencies

Re: Service Area Annexation and Collection System Improvement Plan (Plan)
SCH# 2006101018

Attached for your review and comment is the Notice of Preparation (NOP) for the Service Area Annexation and Collection System Improvement Plan (Plan) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

John Linder
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708-7018

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Senior Planner, State Clearinghouse

Attachments
cc: Lead Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2006101018
Project Title Service Area Annexation and Collection System Improvement Plan (Plan)
Lead Agency Orange County Sanitation District

Type **NOP** Notice of Preparation
Description The Orange County Sanitation District (Sanitation District or OCSD) proposes to annex unincorporated property in Orange County which is directly adjacent or surrounded by the current Sanitation District service area. This annexation would facilitate abandonment of existing septic tanks in residential areas and provide an alternative to installation of new septic tanks in vacant areas. The Sanitation District also proposes to make improvements to the regional collection system

Lead Agency Contact

Name John Linder
Agency Orange County Sanitation District
Phone 714-593-7350 **Fax**
email
Address 10844 Ellis Avenue
City Fountain Valley **State** CA **Zip** 92708-7018

Project Location

County Orange
City
Region
Cross Streets
Parcel No.

Township	Range	Section	Base

Proximity to:

Highways 405, 55, 73, 57, 5, 22, 91
Airports John Wayne
Railways
Waterways San Diego CRreek, Santa Ana River, Coyote Creek, Newport Back Bay
Schools
Land Use The collection system service area is highly urbanized and primarily consists of residential, commercial, and industrial uses, with more limited recreational, agricultural and open space uses. The collection system service area is largely zoned to reflect residential, commercial, and industrial use designations.

Project Issues Agricultural Land; Aesthetic/Visual; Air Quality; Archaeologic-Historic; Forest Land/Fire Hazard; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Public Services; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Wildlife; Wetland/Riparian; Water Supply; Water Quality; Vegetation; Growth Inducing

Reviewing Agencies Resources Agency; California Coastal Commission; Department of Conservation; Department of Parks and Recreation; Department of Fish and Game, Region 5; Department of Fish and Game, Marine Region; Department of Health Services; Native American Heritage Commission; State Lands Commission; Caltrans, District 12; Integrated Waste Management Board; State Water Resources Control Board, Division of Loans and Grants; State Water Resources Control Board, Division of Water Quality; Department of Toxic Substances Control

Date Received 10/03/2006 **Start of Review** 10/03/2006 **End of Review** 11/01/2006

Note: Blanks in data fields result from insufficient information provided by lead agency.

Resources Agency

- Resources Agency
Nadell Gayou
- Dept. of Boating & Waterways
David Johnson
- California Coastal Commission
Elizabeth A. Fuchs
- Colorado River Board
Gerald R. Zimmerman
- Dept. of Conservation
Roseanne Taylor
- California Energy Commission
Paul Richins
- Dept. of Forestry & Fire Protection
Allen Robertson
- Office of Historic Preservation
Wayne Donaldson
- Dept of Parks & Recreation
Environmental Stewardship Section
- Reclamation Board
DeeDee Jones
- S.F. Bay Conservation & Dev't. Comm.
Steve McAdam
- Dept. of Water Resources
Resources Agency
Nadell Gayou

- Fish & Game Region 3
Robert Floerke
- Fish & Game Region 4
Julie Vance
- Fish & Game Region 5
Don Chadwick
Habitat Conservation Program
- Fish & Game Region 6
Gabrina Gatchel
Habitat Conservation Program
- Fish & Game Region 6 I/M
Tammy Allen
Inyo/Mono, Habitat Conservation Program
- Dept. of Fish & Game M
George Isaac
Marine Region

Other Departments

- Food & Agriculture
Steve Shaffer
Dept. of Food and Agriculture
- Depart. of General Services
Public School Construction
- Dept. of General Services
Robert Sleppy
Environmental Services Section
- Dept. of Health Services
Veronica Malloy
Dept. of Health/Drinking Water

Independent Commissions, Boards

- Delta Protection Commission
Debby Eddy
- Office of Emergency Services
Dennis Castrillo
- Governor's Office of Planning & Research
State Clearinghouse
- Native American Heritage Comm.
Debbie Treadway

Fish and Game

- Depart. of Fish & Game
Scott Flint
Environmental Services Division
- Fish & Game Region 1
Donald Koch
- Fish & Game Region 2
Banky Curtis

- Public Utilities Commission
Ken Lewis
- State Lands Commission
Jean Sarino
- Tahoe Regional Planning Agency (TRPA)
Chery Jacques

Business, Trans & Housing

- Caltrans - Division of Aeronautics
Sandy Hesnard
- Caltrans - Planning
Terri Pencovic
- California Highway Patrol
Shirley Kelly
Office of Special Projects
- Housing & Community Development
Lisa Nichols
Housing Policy Division

Dept. of Transportation

- Caltrans, District 1
Rex Jackman
- Caltrans, District 2
Marcelino Gonzalez
- Caltrans, District 3
Jeff Pulverman
- Caltrans, District 4
Tim Sable
- Caltrans, District 5
David Murray
- Caltrans, District 6
Marc Birnbaum
- Caltrans, District 7
Cheryl J. Powell

- Caltrans, District 8
Dan Kopulsky
- Caltrans, District 9
Gayle Rosander
- Caltrans, District 10
Tom Dumas
- Caltrans, District 11
Mario Orso
- Caltrans, District 12
Bob Joseph

Cal EPA

Air Resources Board

- Airport Projects
Jim Lerner
- Transportation Projects
Ravi Ramalingam
- Industrial Projects
Mike Tollstrup

California Integrated Waste Management Board
Sue O'Leary

State Water Resources Control Board
Jim Hockenberry
Division of Financial Assistance

State Water Resources Control Board
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality

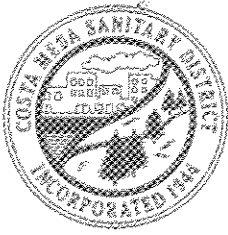
State Water Resources Control Board
Steven Herrera
Division of Water Rights

Dept. of Toxic Substances Control
CEQA Tracking Center

Department of Pesticide Regulation

Regional Water Quality Control Board (RWQCB)

- RWQCB 1
Cathleen Hudson
North Coast Region (1)
- RWQCB 2
Environmental Document Coordinator
San Francisco Bay Region (2)
- RWQCB 3
Central Coast Region (3)
- RWQCB 4
Teresa Rodgers
Los Angeles Region (4)
- RWQCB 5S
Central Valley Region (5)
- RWQCB 5F
Central Valley Region (5)
Fresno Branch Office
- RWQCB 5R
Central Valley Region (5)
Redding Branch Office
- RWQCB 6
Lahontan Region (6)
- RWQCB 6V
Lahontan Region (6)
Victorville Branch Office
- RWQCB 7
Colorado River Basin Region (7)
- RWQCB 8
Santa Ana Region (8)
- RWQCB 9
San Diego Region (9)
- Other _____



Costa Mesa Sanitary District

... an Independent Special District

Board of Directors

James Ferryman
Greg Woodside
Art Perry
Arlene Schafer
Dan Worthington

Staff

Robin B. Hamers
Manager
District Engineer
(949) 631-1731

Thomas A. Fauth
Assistant Manager

Joan Revak
Board Secretary
Program Manager
Clerk of the District

Alan R. Burns
Legal Counsel

Wendy Hooper Davis
Treasurer

Phone
(949) 645-8400
Fax
(949) 650-2253

Address
628 W. 19th Street
Costa Mesa, CA
92627-2716

October 10, 2006

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

Re: **Program EIR for Service Area Annexations and Collection System Improvements**

Dear John:

Thank you for the opportunity to review and comment on the NOP for the Program EIR for the annexation program and the collection system improvement plan.

The Costa Mesa Sanitary District Board of Directors and Staff are in strong support of the well-written and comprehensive proposal. The proposal provides substantial benefits to the residents of Orange County and the environment by proposing the following:

- Annexing areas to the Sanitation District so property owners may connect to the sewer system and abandon old and failing septic systems that are harming the soil environment and possibly the groundwater.
- Provide a sewer system that alleviates the need for new septic systems.
- Improve the collection system in 20 locations to accommodate existing and planned growth in Orange County.

The Orange County Sanitation District has historically been very strong in advance planning and construction to handle the changing conditions and continuing growth in Orange County. This requires comprehensive management due to the magnitude of flows received, large pipeline sizes, numbers of pumps, and advanced treatment plant facilities.



Printed on
Recycled Paper

WB012007001SCO/070580018

Protecting our community's health by providing solid waste and sewer collection services.

cmsdca.gov

The following three minor comments are also made regarding the proposal:

1. The proposed pipe replacement size of 24-inch in project 01-101, Raitt and Bristol Sewer Extension should be clarified since it is only slightly larger than the existing 21-inch sewer.
2. Project 06-18, Fairview Road Trunk Sewer Relief mentions new sewer inside the CMSD in Fairview Road from Newport Blvd to Baker Street. This project appears to have been completed.
3. The CMSD appreciates project 06-17, which is the upsizing of the OCSD Pomona Avenue sewer located in the CMSD.

The residents of Orange County are fortunate that the Orange County Sanitation District retains a proactive staff of intelligent and well-qualified engineers and managers. This is something local sewer system managers have known for quite sometime.

Sincerely,



Robin B. Hamers
Manager/District Engineer

cc: Board
Staff

DEPARTMENT OF TRANSPORTATION

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



*Flex your power!
Be energy efficient!*

October 23, 2006

John Linder
Orange County Sanitation District (OCSD)
10844 Ellis Avenue
Fountain Valley, CA 92708-7018

IGR/CEQA
SCH#2006101018
NOP/PEIR
Log# 1786
I-405, 5, SR55, 73, 57, 22, 91

Dear Mr. Linder:

Subject: OCSD Service Area Annexation and Collection System Improvement Plan

Thank you for the opportunity to review and comment on the **Notice of Preparation (NOP) for a Program Environmental Impact Report (PEIR) for the Orange County Sanitation District (OCSD) Service Area Annexation and Collection System Improvement Plan**. OCSD proposes to annex unincorporated property in Orange County which is directly adjacent or surrounded by the current service area. The district proposes to annex approximately 7,816 acres to its service area in six locations: Naval Weapon Station in Seal Beach, Bolsa Chica, Upper Blind Canyon, Yorba Regional Park, Crest De Ville Road Area, and Anaheim Hills.

Caltrans District 12 is a commenting agency and has the following comments:

1. The document states that there will be some type of traffic impact(s) due to the proposed project. Please identify these traffic impacts to State Highway facilities; specifically at intersections where State Highway ramps connect to city streets. The traffic study that will identify potential impacts to traffic on State Highway facilities shall be conducted in conformance with Caltrans "Guide for the Preparation of Traffic Studies". Also, will there be any impact to traffic during the construction phase regarding the stated improvements to the collection systems?
2. If any construction activity is to occur within the Caltrans Right-of-way, the applicant must apply for an Encroachment Permit. As a condition of the application process, the applicant will be required to submit either a Storm Water Pollution Prevention Plan (SWPPP) or a Water Pollution Control Program (WPCP) pursuant to the Caltrans Storm Water Quality Handbook. In addition, biological and cultural impacts will have to be assessed to meet Caltrans standards.
3. Any runoff draining into the Caltrans Right-of-way from construction operations or from the resulting project must fully conform to the Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ, NPDES No. CAS000003) and the current discharge requirements of the Santa Ana Regional Water Quality Control Board to avoid impacting water quality.

"Caltrans improves mobility across California"

Mr. John Linder
October 23, 2006
Page 2

4. Controls must be implemented to contain all vehicle loads and avoid any tracking of materials that may fall or blow onto Caltrans roadways or facilities.

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

Sincerely,



Ryan P. Chamberlain, Branch Chief
Local Development/Intergovernmental Review

cc: Terry Roberts, OPR

Mr. John Linder
October 23, 2006
Page 2

Bcc: Praveen Gupta, Environmental Planning
Raouf Moussa, Traffic Operations
Gale McIntyre, Deputy District Director for Planning and Local Assistance

DEPARTMENT OF TRANSPORTATION

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



*Flex your power!
 Be energy efficient!*

October 26, 2006

John Linder
 Orange County Sanitation District (OCSD)
 10844 Ellis Avenue
 Fountain Valley, CA 92708-7018

IGR/CEQA
 SCH#2006101018
 NOP/PEIR
 Log# 1786
 I-405, 5,SR55, 73,57,22,91

Dear Mr. Linder:

Subject: OCSD Service Area Annexation and Collection System Improvement Plan

Thank you for the opportunity to review and comment on the **Notice of Preparation (NOP) for a Program Environmental Impact Report (PEIR) for the Orange County Sanitation District (OCSD) Service Area Annexation and Collection System Improvement Plan**. OCSD proposes to annex unincorporated property in Orange County which is directly adjacent or surrounded by the current service area. The district proposes to annex approximately 7,816 acres to its service area in six locations: Naval Weapon Station in Seal Beach, Bolsa Chica, Upper Blind Canyon, Yorba Regional Park, Crest De Ville Road Area, and Anaheim Hills.

Caltrans District 12 is a commenting agency and has the following comments *in addition to our October 23, 2006 comment letter*:

1. Each project implemented to accomplish goals set out in the PEIR will have subsequent environmental documentation that addresses mitigation, cumulative impacts, traffic studies, etc. in relation to Caltrans Right-of-way.
2. Any minor project work (e.g. street widening, emergency access improvements, sewer connections, sound walls, stormdrain construction, street connections lighting and signage, etc.) proposed in Caltrans Right-of-way, would require coordination with Caltrans, an encroachment permit and all environmental concerns must be adequately addressed. If the environmental documentation for the project does not meet Caltrans requirements, additional documentation would be required before approval of the encroachment permits. Please coordinate with Caltrans to meet requirements for any work within or near Caltrans Right-of-way. (**See Attachment: Environmental Review Requirements for Encroachment Permit**).
3. All work within the State Right-of-way must conform to Caltrans Standard Plans and Standard Specifications for Water Pollution Control, including production of a Water Pollution Control Program (WPCP) or Storm Water Pollution Prevention Plan (SWPPP) as required. Any runoff draining into Caltrans Right-of-way from construction operations, or from the resulting project, must fully conform to the current discharge requirements of the Regional Water Quality Control Board to avoid impacting water quality. Measures must be

"Caltrans improves mobility across California"

Mr. John Linder
October 26, 2006
Page 2

incorporated to contain all vehicle loads and avoid any tracking of materials, which may fall or blow onto Caltrans roadways or facilities. Please note that all projects involving soil disturbance activities should apply extra attention to storm water pollution control during the "Rainy Season" (October 1st – April 30th) and follow the Water Pollution Control BMPs to minimize impact to the receiving waters.

4. Any runoff draining into the Caltrans Right-of-way from construction operations or from the resulting project must fully conform to the Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ, NPDES No. CAS000003) and the current discharge requirements of the Santa Ana Regional Water Quality Control Board to avoid impacting water quality.
5. Controls must be implemented to contain all vehicle loads and avoid any tracking of materials that may fall or blow onto Caltrans roadways or facilities.

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

Sincerely,



Ryan P. Chamberlain, Branch Chief
Local Development/Intergovernmental Review

Attachment

cc: Terry Roberts, OPR

ENVIRONMENTAL REVIEW REQUIREMENTS FOR ENCROACHMENT PERMITS

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

A complete application for environmental review includes the following:

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

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

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

EXAMPLE WPCP CONTRACT LANGUAGE

The CONTRACTOR shall be responsible for complying with all requirements of Caltrans Standard Specifications Section 7-1.01G, "Water Pollution," and the "Caltrans Storm Water Quality Handbook, Construction Contractor's Guide and Specifications," effective November 2000 and subsequent revisions, for development and implementation of the Water Pollution Control Program (WPCP).

The Contractor is hereby notified that specific construction practices in the Caltrans Standard Specifications, Section 7, "Responsibilities of the Contractor," are considered to be the Best Management Practices. Applicable construction practices in the Standard Specifications shall be incorporated into the WPCP. Additionally, the Contractor's work will be in compliance with the National Pollution Discharge Elimination System (NPDES) Permit for Storm Water Discharges for the State of California Department of Transportation (Caltrans) Properties, Facilities, and Activities, Order No.99-06-DWQ, CAS000003.

Included within these specifications, for the CONTRACTOR's information, is a copy of the attachment to the Encroachment Permit (Water Pollution Control Provisions) and Caltrans Storm Water Quality Handbook, Construction Contractor's Guide and Specifications Section 2, "Specifications for Preparing a WPCP."

The lead agency will obtain a Caltrans Encroachment Permit for work in the State right-of-way. The CONTRACTOR, within seven (7) days of award of the contract, must submit to Caltrans a WPCP for review and approval, along with the application for a rider to the Encroachment Permit.

At the time of the pre-construction meeting the CONTRACTOR must have the WPCP completed and approved by Caltrans.

The CONTRACTOR shall be responsible for conducting all required monitoring inspections and shall file copies of the inspections and all other reports, certifications or records as required by the WPCP with the lead agency. All fines levied as a result of the CONTRACTOR's failure to comply with the requirements of the Permit Rider and the WPCP, shall be the CONTRACTOR's responsibility.

Time extensions will not be allowed for any suspension of work as a result of the CONTRACTOR's noncompliance with the Permit Rider or WPCP.

Payment for complying with the Permit Rider, completing the WPCP, and implementation of the WPCP shall be deemed to be included in the lump sum price bid for the WPCP. Payment during the contract period shall be made as follows:

- a). 25% (less retention) on the 1st monthly progress payment.
- b). The remainder (less retention) shall be paid in equal amounts based upon the length of the contract.

Failure to comply with the Permit Rider, completing the WPCP, and implementing and maintaining the WPCP may cause a reduction in amounts paid for Items a & b.



CITY OF FOUNTAIN VALLEY

10200 SLATER AVENUE • FOUNTAIN VALLEY, CA 92708-4736 • (714) 593-4400, FAX: (714) 593-4498

*Received
11-6-06*

November 3, 2006

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

OCSD
C

SUBJECT: Service Area Annexation and Collection System Improvement Plan

Dear Mr. Linder:

The City of Fountain Valley appreciates the opportunity to review and comment on the Notice of Preparation for the subject project. The City has concerns regarding the following matters:

- Impacts to traffic, roadway conditions, and infrastructure related to proposed Collection System Improvements on Euclid Street, Magnolia Street, and any other street that may be affected by the proposed CIP especially CIP Nos. 01-17, 02-52, and 03-58.
- The potential for impacts on rates to agencies and constituents within the existing OCSD service area due to annexation. Any and all costs associated with the additional infrastructure and services required to serve the proposed annexation areas should be borne entirely by the annexation areas and not distributed within the existing service area.

The City looks forward to a complete address of the above concerns and review of the EIR.

Very truly yours,

CITY OF FOUNTAIN VALLEY

A handwritten signature in black ink, appearing to read "Mark Lewis".

Mark Lewis
City Engineer

c: Director of Public Works
Planning Director
City Manager

From: Tobin, Ann [ATOBIN@OCSD.COM]
Sent: Thursday, October 12, 2006 1:30 PM
To: Burror, Jim; Linder, John
Cc: Gordon, Matthew/SCO
Subject: Service Area Annexation and Collection System Improvement Plan - Fullerton Inquiry

The Notice Of Preparation for the Service Area Annexation and Collection System Improvement Plan was forwarded to Bill Roseberry of Fullerton Maintenance Services Department by Fullerton's Community Development Director.

Bill is familiar with OCSD. He meets with Nick Arhontes from time to time, attends the WDR meetings, and follows through on OCSD Cooperative Project grants.

Bill called 10/11/06 about our Collection System Improvement Plan and expressed following questions/comments/concerns:

- 1.. Fullerton is/may be doing work in areas adjacent to our proposed work (ref. projects 2-65, 3-58, 3-59).
- 2.. Bill is not aware of any local problem in vicinity of 2-71, but will discuss details with us when we are ready.
- 3.. Bill is working with City of Brea on problem sewer line under reservoir in Craig Park. Some question about ownership of line (has asked Nick).
- 4.. Bill asked for update on grade separation project on State College. (Is this part of 2-65 or separate?)
- 5.. Bill will CCTV lines adjacent to Magnolia Trunk in Fullerton (any opportunities for coordination, ref. project 3-58)?
- 6.. Bill is interested in learning more about pipe bursting and would appreciate seeing demo or getting any contractual information.

I asked Bill to submit comments/concerns/questions so we could respond better to specific coordination issues.

Bill doesn't appear to have any comments relating to environmental impacts, just questions about the proposed work.

Ann

WB012007001SCO/TOBIN-EMAIL.DOC/070580030



RECEIVED

www.ci.irvine.ca.us

City of Irvine, One Civic Center Plaza, Box 1875, Irvine, California 92623-9575 (949) 724-6000

2006 OCT 20 AM 9:22

ENGINEERING

October 16, 2006

Mr. John D. Linder
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

Subject: Notice of Preparation (NOP) of a Program Environmental Impact Report for the Orange County Sanitation District Service Area Annexation and Collection System Improvement Plan

Dear Mr. Linder:

The City of Irvine wants to ensure that the OCSD sanitary sewer system has sufficient capacity to serve the portion of our City that's within your service area. OCSD has identified portions of the collection system with potential capacity deficiencies through 2030. The Von Karman Trunk Sewer in Irvine has been identified as having potential capacity deficiencies.

According to the NOP, the proposed Von Karman Trunk Sewer on Campus Drive is in the City of Irvine. We'd like a confirmation that the proposed sewer is, in fact, in Irvine since Campus Drive is the boundary between the Cities of Irvine and Newport Beach.

Please give me a call if you have any questions.

Sincerely,

MIKE LOVING
Water Quality Administrator

c: Marty Bryant, Director of Public Works
Manuel Gomez, Deputy Director of Public Works
Mark Carroll, P.E., City Engineer
Marcia Beckett, Fiscal & Environmental Administrator



October 11, 2006

ORANGE COUNTY SANITATION DISTRICT
10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CA 92728-8127
ENGINEERING DEPARTMENT
PLANNING DIVISION
10/17/06

CHAIR
ROBERT BOUER
Councilmember
City of Laguna Woods

VICE CHAIR
BILL CAMPBELL
Supervisor
Third District

PETER HERZOG
Councilmember
City of Lake Forest

ARLENE SCHAFER
Director
Costa Mesa
Sanitary District

SUSAN WILSON
Representative of
General Public

TOM WILSON
Supervisor
Fifth District

JOHN WITHERS
Director
Irvine Ranch Water District

ALTERNATE
PATSY MARSHALL
Councilmember
City of Buena Park

ALTERNATE
RHONDA MCCUNE
Representative of
General Public

ALTERNATE
JAMES W. SILVA
Supervisor
Second District

ALTERNATE
CHARLEY WILSON
Director
Santa Margarita
Water District

JOYCE CROSTHWAITE
Executive Officer

John Linder
Engineering Manager
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

SUBJECT: Notice of Preparation for a Program Environmental Impact Report—Orange County Sanitation District (OCSD) Service Area Annexation and Collection System Improvements

Dear Mr. Linder:

Thank you for this opportunity to comment on the Orange County Sanitation District's Notice of Preparation (NOP) for a Draft Program Environmental Impact Report (PEIR) for the OCSD Service Area Annexation and Collection System Improvements. As a responsible agency for the future annexation of these areas to OCSD, the Local Agency Formation Commission (LAFCO) has reviewed the NOP and makes the following comments as OCSD begins preparation of the Draft EIR.

Acronyms

Please correct the following acronym on page VII to read as follows:

LAFCO Local Agency Formation Commission

Additionally all references within the NOP to Local Agency Formation "Committee" should be corrected to read Local Agency Formation "Commission."

Introduction

The NOP states that the "Sanitation District proposes to annex unincorporated territory in Orange County which is directly adjacent to or surrounded by the current Sanitation District service area." Over the past few years, LAFCO, OCSD and other agencies have had continuing discussions regarding a "blanket" annexation of areas not included in OCSD's service area. These areas include, but are not limited to, Cowan Heights, Lemon Heights and Orange Park Acres. It is our understanding that OCSD has prepared draft improvement plans for some or all of these areas.

The PEIR should address the impacts resulting from the annexation of all areas not currently in OCSD. State CEQA Guidelines Section 15378 states that a "project means the whole of an action which has a potential for either a direct physical change or a reasonably foreseeable indirect physical change in the environment." Because OCSD, LAFCO and other parties have previously discussed a "blanket" annexation of other unserved areas, a PEIR which does not address *all* unserved areas may be perceived as single project and, for the purposes of CEQA, be considered part of the "whole of the action."

Additionally, CEQA prohibits the splitting of a project into two or more segments. This prohibition ensures that "environmental considerations do not become submerged by chopping a large project into many little ones, each with a potential impact on the environment, which cumulatively may have disastrous consequences" (Burbank-Glendale-Pasadena Airport Authority v. Hensler (1991) 233 CA3d 577). Accordingly, one environmental document (i.e., the PEIR) should consider the annexation of all unserved areas.

Purpose of PEIR

The "Purpose of PEIR" section of the NOP refers to coordination of the OCSD annexation process with LAFCO and local sewerage agencies. It is important to point out that, while cities and special districts coordinate with LAFCO on issues and the processes of the annexation of areas, the Commission is responsible for providing final approval for all annexations to cities and special districts within Orange County. The Draft PEIR should clearly identify the roles of each of the agencies, as well as the steps in the annexation process for the unserved portions of OCSD. The Draft PEIR should also discuss the timing of the annexation(s) relative to timing of the proposed sewer improvement plans.

Project Description

Service Area Annexation

The NOP states that annexation to OCSD is *coordinated* with the Orange County Local Agency Formation *Committee (sic)*. As stated previously, the Commission is responsible for providing final approval for all annexations to cities and special districts within Orange County.

Within the descriptions of the project areas, the NOP identifies the County of Orange as a local sewer agency. Historically and presently, the County of Orange does not provide local sewer service to the unincorporated areas or any areas otherwise.

Additionally, the NOP references local sewer agencies throughout this section. In the cases where sewer service is not currently being provided by a local agency, the NOP should state that the agency is a "potential" local sewer agency for the respective area. Current language indicates and makes the assumption that the local agency has assessed the respective area and agreed to provide local sewer service.

Next, although the NOP references in the introduction the purpose of the project, there should be further discussion specific to each project that addresses the purpose for annexation for each area. In particular, it is unclear why the District would seek to annex open spaces areas with no development potential.

Specifically, under "Service Area Annexation," the NOP references "the purpose of the proposed annexation is to reduce the potential for groundwater contamination from failing septic systems in these six locations." LAFCO has had several discussions regarding a blanket annexation of *all areas* within Orange County not currently in OCSD's service territory to facilitate future conversion from septic system use to public sewer. The PEIR should reference all areas currently outside the District's boundary that contain a substantial number of septic systems, including but not limited to Orange Park Acres, Lemon Heights and Cowan Heights.

Bolsa Chica

The NOP states that local sewer agencies for this area include the County of Orange and the City of Huntington Beach. As previously mentioned, the County of Orange does not presently provide sewer service, nor has it in the past.

Additionally, while the Commission has identified the City of Huntington Beach as the logical provider of municipal services for the Bolsa Chica area (its sphere of influence was originally adopted in 1973), at present LAFCO has only authorized Huntington Beach to provide local sewer service to the Signal Landmark project area, which includes approximately 103 acres, an issue that will be further explored in the "Local Sewer Service Provider" section to follow. The Commission approved a portion of this project area, approximately 71 acres, for annexation to the Sanitation District on July 12, 2006. The total acreage referenced in the NOP (1,680 acres) should be changed to reflect and include this recent annexation.

2.0 Environmental Checklist Form

Other Public Agencies Whose Approval is Required

The NOP states that the Sanitation District may be required to obtain approval from County of Orange and LAFCO. Such approvals may include encroachment permits, easements, etc. The Local Agency Formation Commission must consider and approve all proposed reorganizations involving boundary changes to cities and special districts within Orange County. This is not discretionary; hence, the NOP should state that the Sanitation District is required to obtain Orange County LAFCO's approval for proposed annexation and/or boundary reorganizations. Further, annexations, boundary reorganizations and adjustments should be added to those items listed in the NOP needing approval.

Other LAFCO Actions

In addition to the annexation process, the PEIR should adequately address all other related changes of organization affecting any public agencies in the project area that may result from the project.

The PEIR should also note that a municipal service review report (MSR) and sphere of influence update should be completed prior to applying to LAFCO for any jurisdictional boundary change. Although MSRs, as studies required pursuant to Government Code Section 56430, on their own do not require environmental review under CEQA, LAFCO discretionary actions to update and amend spheres of influence are subject to CEQA. The PEIR should adequately

address any future updates or amendments to OCSD's sphere of influence that will or may accompany the proposed plans.

Local Sewer Service Providers

The NOP lists the County of Orange as a local sewer service provider. Again, the County does not currently provide local sewer service.

Further, the NOP lists the City of Orange as a local sewer service provider. The City has recently informed OCSD and LAFCO that it will no longer extend sewer service through out-of-area service agreements. Therefore, in order to have the City serve as the local sewer service provider, the City of Orange would have to annex the areas.

As mentioned in an earlier section of this response, the City of Huntington Beach has only been authorized as the local sewer service provider for a portion of the unincorporated Bolsa Chica area. In order for Huntington Beach to be formally identified as the local sewer agency for the remaining Bolsa Chica area, the City would have to annex the area in its entirety. Further, prior to annexation, the City of Huntington Beach would need to assess the impacts of such annexation, if any.

Since the remaining Bolsa Chica area, for which there are currently no proposals to annex, includes open space with no plans for development, the NOP should discuss the need and reasoning to annex this open space area to the District, since sewer service may not be required.

The PEIR should address these issues in-depth and include a comprehensive discussion of the services the County is required to provide by law. The analysis should also include an examination of service provision options if the respective cities do not agree to provide local sewer service.

Open Space Annexations

The NOP identifies several areas designated for permanent open space as areas to be annexed into OCSD. The PEIR should address the need for sewer service in these areas, the cost of annexation, and the party responsible for paying OCSD annexation fees. The PEIR should also identify and evaluate these service providers' plans, if any, for the extension and delivery of sewer services to the project areas.

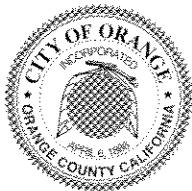
If you have any questions or concerns, please contact me either by phone at (714) 834-2556 or by e-mail at jcrosthwaite@ornage.lafco.ca.gov.

Sincerely,



Joyce Crosthwaite
Executive Officer

cc: Local Agency Formation Commission



CITY OF ORANGE

DEPARTMENT OF COMMUNITY DEVELOPMENT

www.cityoforange.org

ADMINISTRATION
(714) 744-7240
fax: (714) 744-7222

PLANNING DIVISION
(714) 744-7220
fax: (714) 744-7222

BUILDING DIVISION
(714) 744-7200
fax: (714) 744-7245

CODE ENFORCEMENT DIVISION
(714) 744-7244
fax: (714) 744-7245

October 7, 2006

Mr. John D. Linder
Engineering Manager
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

#41-06

Subject: Notice of Preparation (NOP) of a Program Environmental Impact Report (PEIR) for the Orange County Sanitation District (OCSD) Service Area Annexation and Collection System Improvement Plan.

Dear Mr. Linder,

Thank you for the Notice of Preparation for the PEIR and the opportunity to review the PEIR for the Orange County Sanitation District Service (OCSD) Area Annexation and Collection System Improvement Plan. The proposed project proposes to annex approximately 7,816 acres to its service area in six locations including the Upper Blind Canyon and Crest De Ville Road Area located in the City of Orange (City). In addition, the project would increase the size of a section of the Taft Branch sewer to provide additional capacity for approved developments such as the East Orange Development. The project would upsize approximately 1,200 feet of 15-inch diameter pipe along East Taft Avenue between Shaffer Street and Glassell Street in the City of Orange.

The City of Orange (City) would appreciate consideration of the following comments regarding the PEIR:

1. Currently, Orange Park Acres is not a part of the Orange County Sanitation District and is in the sphere of influence for the City of Orange. The City requests OCSD include Orange Park Acres as part of their proposed annexations to the Sanitation District's service area since OCSD is a single service agency in Orange County that handles sewers and Orange Park Acres already has several properties that have been individually annexed into the District. The annexation would be beneficial to the residences in Orange Park Acres by providing all property owners with the option to abandon septic tanks and limit new septic tank installations in the future. The annexation would also fill in gaps within Orange Park Acres with the properties annexed/not annexed into the OCSD.

Mr. John D. Linder
November 7, 2006
Page 2

2. Prior to construction for the Taft Branch Improvements in the City of Orange, the OCSD shall obtain an encroachment permit from the City of Orange. The OCWD should contact Assistant City Engineer, Roger Hohnbaum, at (714) 744-5544 to coordinate these efforts.

Thank you for the opportunity to review the NOP. The City looks forward to reviewing the Draft EIR.

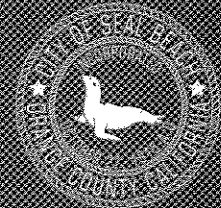
Sincerely,

A handwritten signature in black ink, appearing to read "Alice Angus". The signature is fluid and cursive, with a large initial "A" and "A".

Alice Angus
Community Development Director
City of Orange

cc: Roger Hohnbaum, Assistant City Engineer
Irma Hernandez, Senior Assistant to the City Manager
Anna Pehoushek, Principal Planner
Jennifer McDonald Le, Senior Planner/Environmental Review Coordinator
Sharon Baik Song, Planning Aide

City of Seal Beach



CITY HALL 211 EIGHTH STREET
SEAL BEACH CALIFORNIA 90740
(562) 431-2527 • www.ci.seal-beach.ca.us

October 25, 2006

Received
10/25/06

Orange County Sanitation District
Attn: John D. Linder
10844 Ellis Avenue
Fountain Valley, CA 92708

SUBJECT: *City of Seal Beach Comments re: "Notice of Preparation – Program Environmental Impact Report for the Orange County Sanitation District Service Area Annexation and Collection System Improvement Plan"*

Dear Mr. Linder:

The Environmental Quality Control Board of the City of Seal Beach has reviewed the above referenced "Notice of Preparation." The City of Seal Beach wishes to clarify for the record that the Seal Beach Naval Weapons Station is within the corporate boundaries of the City. The City of Seal Beach will provide sewer services to the area encompassed by the Seal Beach Naval Weapons Station if it is ever determined to be excess by the Federal government and closed under the Base Realignment and Closure process. The City recognizes that this annexation into the service area of the Orange County Sanitation District will have no impacts on the use of base property, as it is owned and controlled by the Department of Navy.

The City of Seal Beach is primarily concerned with the potential environmental impacts during construction of Project 11-25, Edinger-Bolsa Chica Trunk Improvements, particularly related to impacts related to "Transportation and Traffic."

The City has no additional comments on the "Notice of Preparation", but looks forward to reviewing the Draft Program Environmental Impact Report on this project and may determine to provide additional comments during the public review period on that document.

The Environmental Quality Control Board (EQCB) considered and discussed the subject document on October 25, 2006, and authorized the Chairman to sign this letter indicating the official comments of the City of Seal Beach.

*City of Seal Beach Environmental Quality Control Board Comment Letter re:
"Notice of Preparation – Program Environmental Impact Report
for the Orange County Sanitation District
Service Area Annexation and Collection System Improvement Plan"
October 25, 2006*

Thank you for your consideration of the comments of the City of Seal Beach. Please do not hesitate to contact Mr. Lee Whittenberg, Director of Development Services, City Hall, 211 Eighth Street, Seal Beach, 90740, by telephone at (562) 431-2527, extension 313, or by e-mail at lwhittenberg@ci.seal-beach.ca.us if you have any questions regarding this matter.

Sincerely,



Mario Voce
Chairman, Environmental Quality Control Board
City of Seal Beach

Distribution:

Seal Beach City Council
Seal Beach Archaeological Advisory Committee

Seal Beach Planning Commission

City Manager
Director of Development Services



Community Development Department

RECEIVED

2006 OCT 23 PM 2:42

ENGINEERING City of Tustin

October 18, 2006

300 Centennial Way
Tustin, CA 92780
714.573.3100

John Linder
Engineering Manager
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

SUBJECT: REVIEW OF NOP - OCSD ANNEXATION/IMPROVEMENTS PEIR

Dear Mr. Linder:

Thank you for the opportunity to provide comments on the Notice of Preparation (NOP) and Initial Study (IS) of a Program Environmental Impact Report (PEIR) for proposed annexations to the Sanitation District's service area and improvements to its wastewater collection system. None of the proposed annexations is directly adjacent to the City of Tustin. However, one of the proposed improvement projects is the Browning Subtrunk Sewer Relief project ("Project"), which would increase the capacity of 7,800 feet of sewer line beneath Browning Avenue between Rainbow Drive and Mitchell Avenue. A portion of the sewer line is located in the City of Tustin.

The City of Tustin has significant concerns regarding the proposed project on Browning Avenue and has identified the following issues to be addressed in the PEIR.

1. Alternative Project construction methods need to be considered and analyzed in the PEIR document. The analyses must address the environmental impacts of the construction options, irrespective of costs.
2. There have been significant impacts generated by previous OCSD sewer construction projects in the City of Tustin. The previously experienced impacts have included, but have not been limited to, damage to City infrastructure (e.g., roadways, water lines, etc.), traffic impacts, traffic control issues, inadequate notifications, impacts to adjacent private development, depletion of City of Tustin inspection resources, etc. These potential impacts must be discussed and addressed in the PEIR.
3. Mitigation measures must be identified in the PEIR to reduce any potential Project impacts to a level of insignificance.

4. There are schools located along Browning Avenue that will require special considerations. It is essential that the Tustin Unified School District ("TUSD") be kept apprised of each stage of the construction project. The TUSD should be included in the distribution list for the PEIR.
5. Development, notification, installation, and maintenance of adequate traffic control by OCSD and the contractor are essential.
6. The Project mitigation measures must assure that adequate City inspection of the Project can be provided at all times throughout the duration of the Project.
7. Sufficient mitigation measures and/or funding must be required of the Project to assure that any Project related impacts in the City of Tustin can be reduced to a level of insignificance. The City of Tustin is not likely to support any construction alternative that would result in unmitigated impacts that would require a statement of overriding considerations in the PEIR.
8. To be consistent with the City of Tustin Noise Ordinance and mitigate any potential noise impacts to Tustin residents, there should be a mitigation measure in the PEIR that requires significant noise-generating construction activities and construction-related traffic near Tustin residential areas to be limited to 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. Construction activities shall be prohibited during all hours on Sunday and City-observed federal holidays.
9. Construction-related traffic should be specifically addressed and mitigated in the PEIR. The PEIR should identify truck routes for construction vehicles and include appropriate mitigation measures. There are several residential neighborhoods adjacent to Browning Avenue in the City of Tustin that would be impacted by construction traffic; therefore, appropriate mitigation measures are necessary.
10. Any proposed staging area for materials or equipment within the City of Tustin may require the approval of a Temporary Use Permit by the Community Development Department.
11. According to the Notice of Preparation, construction activities on the Browning Subtrunk Sewer Relief project are anticipated to occur between 2009 and 2011. To minimize disruption in the public right-of-way and potentially coordinate the construction activities with other roadway projects, the City of Tustin requests that the Orange County Sanitation District provide a precise construction schedule for work in the City of Tustin for our review and approval.

Mr. John Linder
OCSD NOP
October 18, 2006
Page 3

12. The City of Tustin strongly encourages the Orange County Sanitation District to solicit input on the Browning Subtrunk Sewer Relief project from the residents of neighborhoods adjacent to the proposed project, including the Villa Valencia Mobile Home Park and the homeowners associations of Bellwick, Monterey, and Shadow Brook. Input should be considered during the planning process through construction to ensure that any concerns are mitigated. The homeowners associations of these neighborhoods may be desirous of hosting informational meetings with representatives from the Orange County Sanitation District.

Please provide me with a copy of the PEIR when it becomes available and any and all public notices relating to the Orange County Sanitation District's consideration of the PEIR. If you have any questions regarding the City's comments, please call me at (714) 573-3016.

Sincerely,



Scott Reekstin
Senior Planner

cc: Elizabeth A. Binsack
Tim Serlet
Dana Kasdan
Doug Anderson
Terry Lutz
Steve Sasaki

SR:environmental/OCSD Annexation and Improvements NOP Letter.doc

Appendix C
Construction Emissions Calculations

Table C-1: Project NOx Emission Estimates (lbs/day)

CIP No.	Title	Location	Project Year	Excavation	Sewer Installation	Paving	Maximum Daily Emissions
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008	NA	23.74	NA	23.74
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	2008	39.93	23.74	37.75	39.93
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008	40.90	23.74	37.75	40.90
05-61	Bayside Drive Improvement	Newport Beach	2008	NA	23.74	NA	23.74
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009	37.74	22.24	35.85	37.74
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	2009	38.07	22.24	35.85	38.07
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	2009	38.39	22.24	35.85	38.39
05-XX	Newport Beach Force Main Condition Assessment	Newport Beach	2010, 2011	NA	21.02	NA	21.02
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010	35.01	21.02	34.05	35.01
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	2010	NA	21.02	NA	21.02
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010	37.33	21.02	34.05	37.33
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	2010	36.04	21.02	34.05	36.04
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2011	33.51	19.71	32.29	33.51
03-55	Westside Relief Interceptor	Cypress, La Palma	2011	33.51	19.71	32.29	33.51
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Orange	2012	31.48	18.44	30.55	31.48
02-49	Taft Branch Improvements	Irvine, Newport Beach	2012	31.10	18.44	30.55	31.10
07-62	Von Darman Trunk Sewer Relief	Huntington Beach	2013	28.83	17.25	28.88	28.88
1125	Edinger/Bolsa Chica Trunk Improvement	Anaheim, Fullerton	2014, 2015	29.11	17.25	28.88	29.11
02-65	Newhope Placentia and Cypress Trunk Replacement	Westminster	2015, 2016	31.65	18.44	30.55	31.65

Table C-2: Project VOC Emission Estimates (lbs/day)

CIP No.	Title	Location	Project Year	Excavation	Sewer Installation	Paving	Maximum Daily Emissions
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008	NA	3.29	NA	3.29
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	2008	6.27	3.29	7.08	7.08
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008	6.30	3.29	7.57	7.57
05-61	Bayside Drive Improvement	Newport Beach	2008	NA	3.29	NA	3.29
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009	5.88	3.08	6.67	6.67
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	2009	5.89	3.08	8.51	8.51
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	2009	5.91	3.08	9.41	9.41
05-XX	Newport Beach Force Main Condition Assessment	Newport Beach	2010, 2011	NA	2.89	NA	2.89
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010	5.50	2.89	5.54	5.54
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	2010	NA	2.89	NA	2.89
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010	5.58	2.89	10.49	10.49
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	2010	5.53	2.89	9.08	9.08
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2011	5.16	2.71	8.04	8.04
03-55	Westside Relief Interceptor	Cypress, La Palma	2011	5.16	2.71	7.90	7.90
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Orange	2012	4.82	2.54	8.93	8.93
02-49	Taft Branch Improvements	Irvine, Newport Beach	2012	4.80	2.54	5.35	5.35
07-62	Von Darman Trunk Sewer Relief	Huntington Beach	2013	4.46	2.38	4.88	4.88
1125	Edinger/Bolsa Chica Trunk Improvement	Anaheim, Fullerton	2014, 2015	4.81	2.54	3.77	4.81
02-65	Newhope Placentia and Cypress Trunk Replacement	Westminster	2015, 2016	4.83	2.54	16.15	16.15

Table C-3: Project SOx Emission Estimates (lbs/day)

CIP No.	Title	Location	Project Year	Excavation	Sewer Installation	Paving	Maximum Daily Emissions
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008	NA	0.02	NA	0.02
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	2008	0.04	0.02	0.03	0.04
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008	0.04	0.02	0.03	0.04
05-61	Bayside Drive Improvement	Newport Beach	2008	NA	0.02	NA	0.02
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009	0.04	0.02	0.03	0.04
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	2009	0.04	0.02	0.03	0.04
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	2009	0.04	0.02	0.03	0.04
05-XX	Newport Beach Force Main Condition Assessment	Newport Beach	2010, 2011	NA	0.02	NA	0.02
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010	0.04	0.02	0.03	0.04
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	2010	NA	0.02	NA	0.02
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010	0.04	0.02	0.03	0.04
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	2010	0.04	0.02	0.03	0.04
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2011	0.04	0.02	0.03	0.04
03-55	Westside Relief Interceptor	Cypress, La Palma	2011	0.04	0.02	0.03	0.04
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Orange	2012	0.04	0.02	0.03	0.04
02-49	Taft Branch Improvements	Irvine, Newport Beach	2012	0.04	0.02	0.03	0.04
07-62	Von Darman Trunk Sewer Relief	Huntington Beach	2013	0.04	0.02	0.03	0.04
1125	Edinger/Bolsa Chica Trunk Improvement	Anaheim, Fullerton	2014	0.04	0.02	0.03	0.04
02-65	Newhope Placentia and Cypress Trunk Replacement	Westminster	2015	0.04	0.02	0.03	0.04

Table C-4: Project CO Emission Estimates (lbs/day)

CIP No.	Title	Location	Project Year	Excavation	Sewer Installation	Paving	Maximum Daily Emissions
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008	NA	12.70	NA	12.70
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	2008	21.62	12.70	21.29	21.62
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008	21.77	12.70	21.29	21.77
05-61	Bayside Drive Improvement	Newport Beach	2008	NA	12.70	NA	12.70
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009	21.01	12.11	20.76	21.01
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	2009	21.05	12.11	20.76	21.05
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	2009	21.10	12.11	20.76	21.10
05-XX	Newport Beach Force Main Condition Assessment	Newport Beach	2010, 2011	NA	11.60	NA	11.60
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010	20.35	11.60	20.28	20.35
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	2010	NA	11.60	NA	11.60
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010	20.74	11.60	20.28	20.74
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	2010	20.52	11.60	20.28	20.52
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2011	20.47	11.60	20.28	20.47
03-55	Westside Relief Interceptor	Cypress, La Palma	2011	20.47	11.60	20.28	20.47
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Orange	2012	20.47	11.60	20.28	20.47
02-49	Taft Branch Improvements	Irvine, Newport Beach	2012	20.50	11.60	20.28	20.50
07-62	Von Darman Trunk Sewer Relief	Huntington Beach	2013	20.42	11.60	20.28	20.42
1125	Edinger/Bolsa Chica Trunk Improvement	Anaheim, Fullerton	2014, 2015	20.38	11.60	20.28	20.38
02-65	Newhope Placentia and Cypress Trunk Replacement	Westminster	2015, 2016	20.45	11.60	20.28	20.45

Table C-5: Project PM₁₀ Emission Estimates (lbs/day)

CIP No.	Title	Location	Project Year	Excavation	Sewer Installation	Paving	Maximum Daily Emissions
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008	NA	5.49	NA	5.49
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	2008	15.35	5.49	6.39	15.35
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008	26.62	5.49	6.39	26.62
05-61	Bayside Drive Improvement	Newport Beach	2008	NA	5.49	NA	5.49
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009	14.45	5.41	6.26	14.45
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	2009	18.64	5.41	6.26	18.64
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	2009	22.78	5.41	6.26	22.78
05-XX	Newport Beach Force Main Condition Assessment	Newport Beach	2010, 2011	NA	5.34	NA	5.34
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010	6.13	5.34	6.13	6.13
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	2010	NA	5.34	NA	5.34
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010	43.36	5.34	6.13	43.36
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	2010	22.65	5.34	6.13	22.65
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2011	18.43	5.27	6.00	18.43
03-55	Westside Relief Interceptor	Cypress, La Palma	2011	18.38	5.27	6.00	18.38
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Orange	2012	22.41	5.18	5.83	22.41
02-49	Taft Branch Improvements	Irvine, Newport Beach	2012	14.04	5.18	5.83	14.04
07-62	Von Darman Trunk Sewer Relief	Huntington Beach	2013	9.78	5.09	5.66	9.78
1125	Edinger/Bolsa Chica Trunk Improvement	Anaheim, Fullerton	2014, 2015	17.82	5.01	5.49	17.82
02-65	Newhope Placentia and Cypress Trunk Replacement	Westminster	2015, 2016	34.31	4.93	5.32	34.31

Table C-6: Project PM_{2.5} Emission Estimates (lbs/day)

CIP No.	Title	Location	Project Year	Excavation	Sewer Installation	Paving	Maximum Daily Emissions
01-17	Santa Ana Trunk Sewer Rehabilitation	Fountain Valley, Santa Ana	2008	NA	2.11	NA	2.11
01-101	Raitt and Bristol Street Sewer Extension	Santa Ana	2008	5.08	2.11	3.26	5.08
06-17	District 6 Trunk Sewer Relief	Costa Mesa, Newport Beach	2008	7.46	2.11	3.26	7.46
05-61	Bayside Drive Improvement	Newport Beach	2008	NA	2.11	NA	2.11
02-71	Fullerton-Brea Interceptor Sewer Relief	Fullerton	2009	4.80	2.04	3.15	4.80
05-63	Dover Drive Trunk Sewer Relief	Newport Beach	2009	5.69	2.04	3.15	5.69
06-18	Fairview Road Trunk Sewer Relief	Costa Mesa	2009	6.56	2.04	3.15	6.56
05-XX	Newport Beach Force Main Condition Assessment	Newport Beach	2010, 2011	NA	1.98	NA	1.98
03-58	Magnolia Trunk Rehabilitation	Fountain Valley, Westminster, Garden Grove, Stanton, Anaheim	2010	2.96	1.98	3.04	3.04
05-47	Balboa Trunk Sewer Rehabilitation	Newport Beach	2010	NA	1.98	NA	1.98
02-52	Euclid Relief Improvements	Fountain Valley, Santa Ana	2010	10.81	1.98	3.04	10.81
03-59	Miller-Holder Trunk Sewer Relief	Buena Park	2010	6.44	1.98	3.04	6.44
07-60	Browning Subtrunk Sewer Relief	Tustin, Unincorporated Orange County	2011	5.46	1.91	2.94	5.46
03-55	Westside Relief Interceptor	Cypress, La Palma	2011	5.45	1.91	2.94	5.45
03-60	Beach Trunk/Knott Interceptor Sewer Relief	Orange	2012	6.18	1.83	2.80	6.18
02-49	Taft Branch Improvements	Irvine, Newport Beach	2012	4.41	1.83	2.80	4.41
07-62	Von Darman Trunk Sewer Relief	Huntington Beach	2013	3.39	1.75	2.66	3.39
1125	Edinger/Bolsa Chica Trunk Improvement	Anaheim, Fullerton	2014, 2015	4.96	1.67	2.52	4.96
02-65	Newhope Placentia and Cypress Trunk Replacement	Westminster	2015, 2016	8.32	1.59	2.39	8.32

Table C-7: Dump Truck Trips - Excavation Phase

CIP No.	Title	Year	Duration (month)	Duration (day)	Disposable Volume (yd ³)	Estimated Total Truck Trips	Estimated Truck Round Trips per day	Estimated Truck Trips per day	Estimated miles per trip	Total miles per day	Roadway Fugitive		Truck Loading Fugitive ¹		ROG	CO	NOx	SOx	PM	PM _{2.5} ²	
											PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}							
01-17	Santa Ana Trunk Sewer Rehabilitation	2008	3	60	-	-	0	0	10	0.0	-	-	-	-	-	-	-	-	-	-	-
01-101	Raitt and Bristol Street Sewer Extension	2008	6	120	6,119	102	1	2	10	20.0	8	1.68	0.951	0.20	0.023	0.102	0.649	9E-04	0.012	0.011	
06-17	District 6 Trunk Sewer Relief	2008	9	180	1,919	384	2	5	10	50.0	20	4.2	0.199	0.04	0.057	0.256	1.622	0.002	0.03	0.028	
05-61	Bayside Drive Improvement	2008	6	120	-	-	0	0	10	0.0	-	-	-	-	-	-	-	-	-	-	
02-71	Fullerton-Brea Interceptor Sewer Relief	2009	6	120	1,141	76	1	2	10	20.0	8	1.68	0.177	0.04	0.021	0.095	0.649	9E-04	0.011	0.01	
05-63	Dover Drive Trunk Sewer Relief	2009	12	240	4,731	315	1	3	10	30.0	12	2.52	0.368	0.08	0.031	0.142	0.973	0.001	0.017	0.015	
06-18	Fairview Road Trunk Sewer Relief	2009	12	240	6,352	424	2	4	10	40.0	16	3.36	0.494	0.10	0.042	0.19	1.298	0.002	0.022	0.021	
05-xx	Newport Beach Force Main Condition Assessment	2010, 2011	6	120	-	-	0	0	10	0.0	-	-	-	-	-	-	-	-	-	-	
03-58	Magnolia Trunk Rehabilitation	2010	12	240	-	-	0	0	10	0.0	-	-	-	-	-	-	-	-	-	-	
05-47	Balboa Trunk Sewer Rehabilitation	2010	12	240	-	-	0	0	10	0.0	-	-	-	-	-	-	-	-	-	-	
02-52	Euclid Relief Improvements	2010	18	360	22,833	1,522	4	9	10	90.0	36	7.56	1.183	0.25	0.085	0.39	2.322	0.004	0.046	0.042	
03-59	Miller-Holder Trunk Sewer Relief	2010	12	240	6,352	424	2	4	10	40.0	16	3.36	0.494	0.10	0.038	0.173	1.032	0.002	0.02	0.019	
07-60	Browning Subtrunk Sewer Relief	2011	9	180	4,045	270	2	3	10	30.0	12	2.52	0.419	0.09	0.027	0.122	0.664	0.001	0.014	0.013	
03-55	Westside Relief Interceptor	2011	12	240	4,796	320	1	3	10	30.0	12	2.52	0.373	0.08	0.027	0.122	0.664	0.001	0.014	0.013	
03-60	Beach Trunk/Knott Interceptor Sewer Relief	2012	12	240	7,195	480	2	4	10	40.0	16	3.36	0.559	0.12	0.033	0.151	0.775	0.002	0.018	0.016	
02-49	Taft Branch Improvements	2012	3	60	622	42	1	2	10	20.0	8	1.68	0.193	0.04	0.016	0.076	0.388	9E-04	0.009	0.008	
07-62	Von Karman Trunk Sewer Relief	2013	3	60	363	24	0	1	10	10.0	4	0.84	0.113	0.02	0.007	0.036	0.171	5E-04	0.004	0.004	
1125	Edinger/Bolsa Chica Trunk Improvement	2014, 2015	6	120	2,074	138	1	3	10	30.0	12	2.52	0.322	0.07	0.021	0.101	0.453	0.001	0.011	0.011	
02-65	Newhope Placentia and Cypress Trunk Replacement	2015, 2016	24	480	24,824	1,655	3	7	10	70.0	28	5.88	0.965	0.20	0.046	0.225	0.941	0.003	0.025	0.023	

1. Calculation assumes a soil density of 1.45 grams per cubic centimeter (g/cm³)

Table C-8: Construction Emission Estimates

Phase	Equipment	hours/day	2008							2009							2010							2011							2012						
			ROG	CO	NOx	SOx	PM	PM _{2.5} ²	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}					
Excavation	Pavement Saw	8	1.17	3.53	5.81	0.01	0.49	0.45	1.09	3.47	5.52	0.01	0.46	0.43	1.02	3.42	5.25	0.01	0.44	0.41	0.94	3.37	4.99	0.01	0.42	0.39	0.87	3.32	4.73	0.01	0.39	0.36					
	Jack Hammer	8	1.17	3.53	5.81	0.01	0.49	0.45	1.09	3.47	5.52	0.01	0.46	0.43	1.02	3.42	5.25	0.01	0.44	0.41	0.94	3.37	4.99	0.01	0.42	0.39	0.87	3.32	4.73	0.01	0.39	0.36					
	Air Compressor	8	0.99	3.03	6.38	0.01	0.45	0.41	0.94	2.96	6.13	0.01	0.44	0.40	0.90	2.89	5.86	0.01	0.42	0.39	0.84	2.82	5.54	0.01	0.40	0.37	0.79	2.76	5.19	0.01	0.38	0.35					
	Excavator	8	1.36	4.66	10.60	0.01	0.58	0.54	1.27	4.56	9.87	0.01	0.54	0.50	1.19	4.47	9.20	0.01	0.51	0.47	1.11	4.39	8.51	0.01	0.47	0.44	1.04	4.32	7.85	0.01	0.43	0.39					
	Front End Loader	8	1.30	4.30	10.41	0.01	0.58	0.54	1.22	4.17	9.80	0.01	0.55	0.51	1.15	4.06	9.23	0.01	0.52	0.48	1.08	3.97	8.62	0.01	0.49	0.45	1.02	3.88	8.03	0.01	0.45	0.41					
	Excavation Phase Total		5.98	19.04	39.02	0.04	2.59	2.38	5.62	18.63	36.86	0.04	2.46	2.27	5.27	18.26	34.79	0.04	2.34	2.15	4.92	17.91	32.65	0.04	2.20	2.02	4.59	17.60	30.53	0.04	2.04	1.87					
Sewer Installation	Concrete Truck	4	0.59	1.85	3.94	0.00	0.27	0.25	0.56	1.82	3.76	0.00	0.26	0.24	0.53	1.79	3.59	0.00	0.25	0.23	0.51	1.77	3.41	0.00	0.24	0.22	0.48	1.75	3.25	0.00	0.23	0.21					
	Backhoe	8	0.96	3.25	6.20	0.01	0.48	0.44	0.89	3.19	5.78	0.01	0.45	0.41	0.82	3.14	5.40	0.01	0.42	0.38	0.75	3.10	5.02	0.01	0.39	0.35	0.69	3.06	4.65	0.01	0.35	0.32					
	Crane	8	1.42	4.81	12.88	0.01	0.57	0.53	1.35	4.56	12.23	0.01	0.54	0.50	1.28	4.35	11.61	0.01	0.51	0.47	1.21	4.14	10.89	0.01	0.48	0.44	1.14	3.96	10.20	0.01	0.44	0.41					
	Sewer Installation Phase Total		2.98	9.91	23.02	0.02	1.32	1.22	2.80	9.58	21.78	0.02	1.25	1.15	2.63	9.28	20.59	0.02	1.18	1.09	2.46	9.01	19.33	0.02	1.11	1.02	2.31	8.76	18.10	0.02	1.02	0.94					
Paving	Backhoe	8	0.96	3.25	6.20	0.01	0.48	0.44	0.89	3.19	5.78	0.01	0.45	0.41	0.82	3.14	5.40	0.01	0.42	0.38	0.75	3.10	5.02	0.01	0.39	0.35	0.69	3.06	4.65	0.01	0.35	0.32					
	Asphalt Truck	8	1.18	3.69	7.89	0.01	0.55	0.50	1.12	3.63	7.52	0.01	0.52	0.48	1.07	3.58	7.17	0.01	0.50	0.46	1.01	3.53	6.83	0.01	0.48	0.44	0.96	3.49	6.49	0.01	0.46	0.42					
	Compactor	8	1.18	3.69	7.89	0.01	0.55	0.50	1.12	3.63	7.52	0.01	0.52	0.48	1.07	3.58	7.17	0.01	0.50	0.46	1.01	3.53	6.83	0.01	0.48	0.44	0.96	3.49	6.49	0.01	0.46	0.42					
	Paving Machine	8	1.57	4.70	8.64	0.01	0.62	0.57	1.49	4.60	8.26	0.01	0.59	0.54	1.42	4.52	7.89	0.01	0.57	0.52	1.35	4.43	7.54	0.01	0.54	0.50	1.28	4.36	7.18	0.01	0.51	0.47					
	Roller	8	1.06	3.47	6.89	0.01	0.48	0.44	1.00	3.42	6.53	0.01	0.46	0.42	0.94	3.37	6.20	0.01	0.44	0.40	0.88	3.33	5.87	0.01	0.42	0.38	0.83	3.29	5.55	0.01	0.39	0.36					
	Paving Phase Total		5.96	18.81	37.49	0.03	2.67	2.45	5.63	18.49	35.61	0.03	2.55	2.34	5.31	18.19	33.83	0.03	2.43	2.23	5.01	17.93	32.09	0.03	2.31	2.13	4.72	17.68	30.37	0.03	2.17	1.99					

Table C-8 cont: Construction Emission Estimates

Phase	Equipment	hours/day	2013							2014							2015							2016								
			ROG	CO	NOx	SOx	PM	PM _{2.5} ²	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}
Excavation	Pavement Saw	8	0.80	3.27	4.46	0.01	0.36	0.33	0.73	3.23	4.21	0.01	0.33	0.30	0.67	3.19	3.94	0.01	0.30	0.28	0.61	3.15	3.67	0.01	0.27	0.25	0.61	3.15	3.67	0.01	0.27	0.25
	Jack Hammer	8	0.80	3.27	4.46	0.01	0.36	0.33	0.73	3.23	4.21	0.01	0.33	0.30	0.67	3.19	3.94	0.01	0.30	0.28	0.61	3.15	3.67	0.01	0.27	0.25	0.61	3.15	3.67	0.01	0.27	0.25
	Air Compressor	8	0.73	2.70	4.85	0.01	0.35	0.32	0.67	2.65	4.51	0.01	0.32	0.29	0.62	2.61	4.14	0.01	0.29	0.26	0.56	2.57	3.78	0.01	0.25	0.23	0.56	2.57	3.78	0.01	0.25	0.23
	Excavator	8	0.98	4.27	7.25	0.01	0.38	0.35	0.91	4.23	6.63	0.01	0.34	0.32	0.85	4.20	5.92	0.01	0.30	0.28	0.79	4.17	5.27	0.01	0.27	0.24	0.79	4.17	5.27	0.01	0.27	0.24
	Front End Loader	8	0.96	3.81	7.47	0.01	0.41	0.37	0.90	3.75	6.89	0.01	0.37	0.34	0.84	3.69	6.26	0.01	0.33	0.31	0.79	3.65										

Table C-9: On-Road Vehicle Emission Estimates

Phase	Equipment	No.	trips/vehicle	miles/trip	Total Miles	Fugitive		2008						2009						2010						2011					
						PM ₁₀	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5} ²	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}
Excavation	Contractor Truck	1	2	5	10	0.18	0.0378	0.013	0.118	0.012	0.000	0.001	0.001	0.012	0.108	0.011	0.000	0.001	0.001	0.011	0.100	0.010	0.000	0.001	0.001	0.010	0.093	0.010	0.000	0.001	0.001
	Worker Commute	10	2	10	200	3.6	0.756	0.255	2.360	0.249	0.002	0.016	0.015	0.236	2.170	0.228	0.002	0.016	0.015	0.217	1.991	0.208	0.002	0.016	0.015	0.203	1.854	0.190	0.002	0.017	0.015
	Total for Excavation					3.78	0.7938	0.26817	2.47758	0.261	0.002	0.017	0.016	0.248	2.278	0.239	0.002	0.017	0.016	0.228	2.09	0.218	0.002	0.017	0.016	0.213	1.946	0.2	0.002	0.017	0.016
Sewer Installation	Delivery Truck	1	2	10	20	0.36	0.0756	0.049	0.319	0.464	0.001	0.008	0.001	0.024	0.217	0.023	0.000	0.002	0.001	0.022	0.199	0.021	0.000	0.002	0.002	0.020	0.185	0.019	0.000	0.002	0.002
	Contractor Truck	1	2	5	10	0.18	0.0378	0.013	0.118	0.012	0.000	0.001	0.004	0.023	0.145	0.215	0.000	0.004	0.004	0.021	0.132	0.193	0.000	0.004	0.003	0.020	0.121	0.170	0.000	0.004	0.003
	Worker Commute	10	2	10	200	3.6	0.756	0.255	2.360	0.249	0.002	0.016	0.015	0.236	2.170	0.228	0.002	0.016	0.015	0.217	1.991	0.208	0.002	0.016	0.015	0.203	1.854	0.190	0.002	0.017	0.015
	Total for Sewer Installation					4.140	0.869	0.317	2.796	0.725	0.003	0.025	0.020	0.282	2.532	0.465	0.002	0.022	0.020	0.261	2.322	0.422	0.002	0.022	0.020	0.244	2.160	0.380	0.002	0.022	0.020
Paving	Contractor Truck	1	2	5	10	0.18	0.0378	0.013	0.118	0.012	0.000	0.001	0.001	0.012	0.108	0.011	0.000	0.001	0.001	0.011	0.100	0.010	0.000	0.001	0.001	0.010	0.093	0.010	0.000	0.001	0.001
	Worker Commute	10	2	10	200	3.6	0.756	0.255	2.360	0.249	0.002	0.016	0.015	0.236	2.170	0.228	0.002	0.016	0.015	0.217	1.991	0.208	0.002	0.016	0.015	0.203	1.854	0.190	0.002	0.017	0.015
	Total for Paving Phase					3.78	0.7938	0.26817	2.47758	0.261	0.002	0.017	0.016	0.248	2.278	0.239	0.002	0.017	0.016	0.228	2.09	0.218	0.002	0.017	0.016	0.213	1.946	0.2	0.002	0.017	0.016

Table C-9 cont: On-Road Vehicle Emission Estimates

Phase	Equipment	No.	trips/vehicle	miles/trip	Total Miles	2012						2013						2014						2015						2016					
						ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}
Excavation	Contractor Truck	1	2	5	10	0.009	0.085	0.009	0.000	0.001	0.001	0.009	0.078	0.008	0.000	0.001	0.001	0.008	0.072	0.007	0.000	0.001	0.001	0.008	0.066	0.007	0.000	0.001	0.001	0.007	0.061	0.006	0.000	0.001	0.001
	Worker Commute	10	2	10	200	0.188	1.702	0.174	0.002	0.017	0.015	0.175	1.564	0.158	0.002	0.017	0.015	0.163	1.437	0.144	0.002	0.017	0.016	0.152	1.322	0.132	0.002	0.017	0.016	0.142	1.218	0.120	0.002	0.017	0.016
	Total for Excavation					0.19761	1.78752	0.18228	0.00189	0.017	0.016	0.184	1.642	0.166	0.002	0.017	0.016	0.171	1.509	0.151	0.002	0.018	0.016	0.159	1.388	0.138	0.002	0.018	0.016	0.149	1.279	0.126	0.002	0.018	0.016
Sewer Installation	Delivery Truck	1	2	10	20	0.019	0.170	0.017	0.000	0.002	0.002	0.017	0.156	0.016	0.000	0.002	0.002	0.016	0.144	0.014	0.000	0.002	0.002	0.015	0.132	0.013	0.000	0.002	0.002	0.014	0.122	0.012	0.000	0.002	0.002
	Contractor Truck	1	2	5	10	0.019	0.110	0.153	0.000	0.003	0.003	0.018	0.100	0.137	0.000	0.003	0.003	0.017	0.093	0.124	0.000	0.003	0.003	0.016	0.086	0.112	0.000	0.003	0.003	0.016	0.080	0.101	0.000	0.003	0.003
	Worker Commute	10	2	10	200	0.188	1.702	0.174	0.002	0.017	0.015	0.175	1.564	0.158	0.002	0.017	0.015	0.163	1.437	0.144	0.002	0.017	0.016	0.152	1.322	0.132	0.002	0.017	0.016	0.142	1.218	0.120	0.002	0.017	0.016
	Total for Sewer Installation					0.226	1.982	0.344	0.002	0.022	0.020	0.210	1.820	0.311	0.002	0.022	0.020	0.196	1.674	0.282	0.002	0.021	0.020	0.183	1.540	0.257	0.002	0.021	0.020	0.172	1.419	0.234	0.002	0.021	0.020
Paving	Contractor Truck	1	2	5	10	0.009	0.085	0.009	0.000	0.001	0.001	0.009	0.078	0.008	0.000	0.001	0.001	0.008	0.072	0.007	0.000	0.001	0.001	0.008	0.066	0.007	0.000	0.001	0.001	0.007	0.061	0.006	0.000	0.001	0.001
	Worker Commute	10	2	10	200	0.188	1.702	0.174	0.002	0.017	0.015	0.175	1.564	0.158	0.002	0.017	0.015	0.163	1.437	0.144	0.002	0.017	0.016	0.152	1.322	0.132	0.002	0.017	0.016	0.142	1.218	0.120	0.002	0.017	0.016
	Total for Paving Phase					0.19761	1.78752	0.18228	0.00189	0.017	0.016	0.184	1.642	0.166	0.002	0.017	0.016	0.171	1.509	0.151	0.002	0.018	0.016	0.159	1.388	0.138	0.002	0.018	0.016	0.149	1.279	0.126	0.002	0.018	0.016

Table C-10: Asphalt Paving Emissions - Paving Phase

CIP No.	Title	Length of Pipeline (ft)	Width of excavated area (ft)	Total area to be paved (acre) ¹	ROG Emissions (lbs/day)
01-17	Santa Ana Trunk Sewer Rehabilitation	0	6	0.000	0.000
01-101	Raitt and Bristol Street Sewer Extension	2360	6	0.325	0.852
06-17	District 6 Trunk Sewer Relief	3700	6	0.510	1.335
05-61	Bayside Drive Improvement	0	6	0.000	0.000
02-71	Fullerton-Brea Interceptor Sewer Relief	2200	6	0.303	0.794
05-63	Dover Drive Trunk Sewer Relief	7300	6	1.006	2.634
06-18	Fairview Road Trunk Sewer Relief	9800	6	1.350	3.537
05-xx	Newport Beach Force Main Condition Assessment	0	6	0.000	0.000
03-58	Magnolia Trunk Rehabilitation	0	6	0.000	0.000
05-47	Balboa Trunk Sewer Rehabilitation	0	6	0.000	0.000
02-52	Euclid Relief Improvements	13700	6	1.887	4.944
03-59	Miller-Holder Trunk Sewer Relief	9800	6	1.350	3.537
07-60	Browning Subtrunk Sewer Relief	7800	6	1.074	2.815
03-55	Westside Relief Interceptor	7400	6	1.019	2.671
03-60	Beach Trunk/Knott Interceptor Sewer Relief	11100	6	1.529	4.006
02-49	Taft Branch Improvements	1200	6	0.165	0.433
07-62	Von Karman Trunk Sewer Relief	700	6	0.096	0.253
1125	Edinger/Bolsa Chica Trunk Improvement	4000	6	0.551	1.444
02-65	Newhope Placentia and Cypress Trunk Replacement	38300	6	5.275	13.822

1. Assumes a 6-foot width of trench to lay the pipelines.

Table C-11: Off-Road Construction Equipment Emissions Factors (lb/hr)

Equipment ¹	2008						2009						2010						2011					
	ROG	CO	NOx	SOx	PM	PM _{2.5} ²	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}
Air Compressors Composite	0.1232	0.3782	0.7980	0.0007	0.0563	0.0518	0.1180	0.3699	0.7664	0.0007	0.0547	0.0503	0.1120	0.3613	0.7320	0.0007	0.0526	0.0484	0.1054	0.3524	0.6923	0.0007	0.0501	0.0461
Excavators Composite	0.1695	0.5828	1.3249	0.0013	0.0727	0.0669	0.1584	0.5697	1.2340	0.0013	0.0681	0.0627	0.1483	0.5581	1.1502	0.0013	0.0638	0.0587	0.1388	0.5482	1.0633	0.0013	0.0592	0.0544
Rollers Composite	0.1328	0.4341	0.8607	0.0008	0.0601	0.0553	0.1250	0.4272	0.8166	0.0008	0.0574	0.0528	0.1176	0.4212	0.7749	0.0008	0.0547	0.0503	0.1106	0.4157	0.7341	0.0008	0.0521	0.0480
Concrete/Industrial Saws Composite	0.1460	0.4411	0.7263	0.0007	0.0610	0.0561	0.1363	0.4340	0.6906	0.0007	0.0581	0.0534	0.1270	0.4273	0.6566	0.0007	0.0552	0.0508	0.1179	0.4209	0.6240	0.0007	0.0525	0.0483
Rubber Tired Loaders Composite	0.1626	0.5369	1.3014	0.0012	0.0728	0.0669	0.1530	0.5214	1.2255	0.0012	0.0688	0.0633	0.1440	0.5078	1.1537	0.0012	0.0651	0.0599	0.1354	0.4959	1.0770	0.0012	0.0608	0.0559
Tractors/Loaders/Backhoes Composite	0.1204	0.4063	0.7746	0.0008	0.0599	0.0551	0.1109	0.3993	0.7227	0.0008	0.0559	0.0514	0.1021	0.3930	0.6747	0.0008	0.0521	0.0479	0.0938	0.3874	0.6275	0.0008	0.0482	0.0444
Paving Equipment Composite	0.1479	0.4616	0.9857	0.0008	0.0681	0.0627	0.1405	0.4544	0.9400	0.0008	0.0655	0.0603	0.1336	0.4478	0.8963	0.0008	0.0629	0.0579	0.1269	0.4418	0.8536	0.0008	0.0603	0.0555
Pavers Composite	0.1963	0.5874	1.0796	0.0009	0.0769	0.0707	0.1867	0.5756	1.0321	0.0009	0.0739	0.0680	0.1774	0.5644	0.9868	0.0009	0.0709	0.0652	0.1684	0.5541	0.9421	0.0009	0.0679	0.0625
Cranes Composite	0.1778	0.6011	1.6100	0.0014	0.0715	0.0658	0.1683	0.5705	1.5293	0.0014	0.0678	0.0624	0.1594	0.5431	1.4515	0.0014	0.0642	0.0591	0.1507	0.5179	1.3616	0.0014	0.0599	0.0551

1. Off-road diesel emission factors from SCAB fleet average.

2. PM_{2.5} emission rates assume 92 percent of PM emissions are PM_{2.5}. *Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds*. October 2006. SCAQMD

Table C-11 cont: Off-Road Construction Equipment Emissions Factors (lb/hr)

Equipment ¹	2012						2013						2014						2015						2016					
	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}	ROG	CO	NOx	SOx	PM	PM _{2.5}
Air Compressors Composite	0.0984	0.3445	0.6493	0.0007	0.0469	0.0432	0.0913	0.3376	0.6064	0.0007	0.0434	0.0399	0.0842	0.3313	0.5633	0.0007	0.0396	0.0364	0.0773	0.3257	0.5173	0.0007	0.0357	0.0329	0.0704	0.3207	0.4726	0.0007	0.0318	0.0293
Excavators Composite	0.1300	0.5401	0.9813	0.0013	0.0536	0.0493	0.1220	0.5338	0.9062	0.0013	0.0481	0.0442	0.1143	0.5289	0.8287	0.0013	0.0428	0.0394	0.1064	0.5248	0.7400	0.0013	0.0379	0.0349	0.0988	0.5213	0.6583	0.0013	0.0332	0.0306
Rollers Composite	0.1038	0.4107	0.6936	0.0008	0.0488	0.0449	0.0973	0.4060	0.6545	0.0008	0.0453	0.0417	0.0912	0.4018	0.6163	0.0008	0.0419	0.0385	0.0851	0.3979	0.5705	0.0008	0.0386	0.0355	0.0792	0.3944	0.5272	0.0008	0.0353	0.0325
Concrete/Industrial Saws Composite	0.1090	0.4148	0.5910	0.0007	0.0491	0.0452	0.1002	0.4088	0.5572	0.0007	0.0452	0.0416	0.0917	0.4031	0.5267	0.0007	0.0413	0.0380	0.0835	0.3982	0.4921	0.0007	0.0374	0.0345	0.0756	0.3936	0.4589	0.0007	0.0336	0.0309
Rubber Tired Loaders Composite	0.1272	0.4855	1.0032	0.0012	0.0558	0.0513	0.1195	0.4763	0.9342	0.0012	0.0508	0.0467	0.1122	0.4683	0.8614	0.0012	0.0461	0.0424	0.1050	0.4615	0.7830	0.0012	0.0416	0.0383	0.0983	0.4557	0.7104	0.0012	0.0375	0.0345
Tractors/Loaders/Backhoes Composite	0.0862	0.3824	0.5814	0.0008	0.0435	0.0401	0.0792	0.3782	0.5389	0.0008	0.0387	0.0356	0.0728	0.3747	0.4974	0.0008	0.0341	0.0313	0.0666	0.3716	0.4496	0.0008	0.0298	0.0274	0.0610	0.3689	0.4064	0.0008	0.0258	0.0237
Paving Equipment Composite	0.1204	0.4365	0.8114	0.0008	0.0570	0.0525	0.1142	0.4316	0.7709	0.0008	0.0536	0.0493	0.1082	0.4273	0.7312	0.0008	0.0502	0.0462	0.1023	0.4234	0.6842	0.0008	0.0469	0.0431	0.0965	0.4198	0.6393	0.0008	0.0436	0.0401
Pavers Composite	0.1596	0.5445	0.8979	0.0009	0.0642	0.0591	0.1511	0.5357	0.8541	0.0009	0.0603	0.0555	0.1429	0.5277	0.8110	0.0009	0.0564	0.0519	0.1347	0.5203	0.7606	0.0009	0.0526	0.0484	0.1269	0.5135	0.7126	0.0009	0.0489	0.0450
Cranes Composite	0.1425	0.4946	1.2751	0.0014	0.0553	0.0509	0.1348	0.4737	1.1930	0.0014	0.0508	0.0468	0.1276	0.4553	1.1060	0.0014	0.0466	0.0429	0.1204	0.4395	1.0191	0.0014	0.0426	0.0392	0.1137	0.4263	0.9377	0.0014	0.0388	0.0357

1. Off-road diesel emission factors from SCAB fleet average.

2. PM_{2.5} emission rates assume 92 percent of PM emissions are PM_{2.5}. *Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds*. October 2006. SCAQMD

Table C-12: On-Road Gasoline Vehicle Emission Rates (lb/mile)

Pollutant ¹	1965-2008		1965-2009		1965-2010		1965-2011		1965-2012		1965-2013		1965-2014		1965-2015		1965-2016	
	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks	Passenger Vehicles	Delivery Trucks
CO	0.011798	0.015942	0.010849	0.01454	0.009954	0.013168	0.009268	0.012065	0.008512	0.010982	0.007818	0.010047	0.007186	0.009273	0.006611	0.008582	0.006089	0.00799
NOx	0.001245	0.023199	0.001138	0.021501	0.001038	0.019339	0.000952	0.01704	0.000868	0.01529	0.000791	0.013737	0.000721	0.012369	0.000659	0.01116	0.000602	0.010108
ROG	0.001277	0.00245	0.001179	0.002295	0.001087	0.002141	0.001015	0.002031	0.000941	0.001909	0.000874	0.001803	0.000813	0.001712	0.000759	0.001635	0.00071	0.001568
SOx	0.000009	0.000033	0.000009	0.000033	0.000009	0.000033	0.000009	0.000033	0.000009	0.000034	0.000009	0.000034	0.000009	0.000034	0.000009	0.000034	0.000009	0.000035
PM ₁₀	0.000080	0.000419	0.000081	0.000400	0.000081	0.000374	0.000083	0.000357	0.000083	0.000337	0.000083	0.000318	0.000084	0.000303	0.000084	0.000289	0.000084	0.000278
PM _{2.5} ²	0.000075	0.000389	0.000075	0.000371	0.000075	0.000347	0.000077	0.000332	0.000077	0.000313	0.000077	0.000295	0.000078	0.000281	0.000078	0.000268	0.000078	0.000258

1. EMFAC 2002 (Version 2.2) Emission Factors for On-Road Gasoline Vehicles

2. PM_{2.5} emission rates assume 92.8 percent of PM emissions are PM_{2.5}. *Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds*. October 2006. SCAQMD

Table C-13: On-Road Heavy Duty Diesel Vehicle Emission Rates (lb/mile)

Pollutant ¹	1965-2008	1965-2009	1965-2010	1966-2011	1967-2012	1968-2013	1969-2014	1970-2015	1971-2016
CO	0.0051169	0.004738	0.0043346	0.004069	0.0037825	0.003551	0.0033645	0.003217	0.0031015
NOx	0.0324425	0.029455	0.0258019	0.022117	0.0193803	0.017054	0.0151001	0.013437	0.0120379
ROG	0.0011331	0.001042	0.0009481	0.000888	0.000813	0.000749	0.0006955	0.000651	0.0006152
SOx	4.601E-05	4.61E-05	4.607E-05	4.61E-05	4.627E-05	4.66E-05	4.71E-05	4.62E-05	4.697E-05
PM ₁₀	0.0005982	0.000559	0.0005068	0.000475	0.0004379	0.000408	0.0003831	0.000362	0.0003439
PM _{2.5} ²	0.0005503	0.000514	0.0004663	0.000437	0.0004029	0.000376	0.0003524	0.000333	0.0003164

1. EMFAC 2002 Version 2.2 April 23, 2003. Emission Factors for On-Road Heavy Duty Diesel Trucks

2. PM_{2.5} emission rates assume 92 percent of PM emissions are PM_{2.5}. *Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds*. October 2006. SCAQMD

Table C-14: Vehicular Fugitive Dust Emission Rates (uncontrolled)

Source	PM ₁₀	PM _{2.5}	Unit
Passenger vehicle on Paved roadway (street cleaning)	0.018	0.00378	lbs/mile
Trucks on Paved Roadways (street cleaning)	0.4	0.084	lbs/mile
Truck Filling	0.02205	0.004631	lbs/ton

1. CEQA Air Quality Handbook. November 1993. SCAQMD

Table C-15: Asphalt Paving ROG Emission Rate

Source	ROG Emission Rate	Unit
Asphalt Paving	2.62	lbs/acre paved

1. URBEMIS default emission rate

Appendix D
Special-Status Species

Scientific Name	Common Name	Federal Status	State Status	CDFG Status	CNPS Status	Documented Occurrence	General Habitat and Location	Specific Habitat Requirements
Amphibians								
Taricha torosa torosa	Coast Range newt	--	--	SC		X2	Coastal drainages from Mendocino County to San Diego County.	Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs, and slow-moving streams.
Bufo californicus	arroyo toad	FE	--	SC			Semiarid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc.	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.
Scaphiopus hammondi	western spadefoot	SC	--	SC		X1	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands.	Vernal pools are essential for breeding and egg-laying.
Rana aurora draytonii	California red-legged frog	FT	--	SC			Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Requires 11 to 20 weeks of permanent water for larval development. Must have access to estivation habitat.
Birds								
Aechmophorus occidentalis	western grebe	--	--			X2	Summer: breeding colonies on certain lakes, chiefly at high altitudes in northeastern plateau region.	Lakes where colonies nest characterized by fair depth of open water, adequate fish fauna, and growth of rushes/tules.
Pelecanus erythrorhynchos	American white pelican	--	--	SC			(Nesting colony) colonial nester on large interior lakes.	Nests on large lakes, providing safe roosting and breeding places in the form of well-sequestered islets.
Pelecanus occidentalis californicus	California brown pelican	FE	SE			X2	(Nesting colony) colonial nester on coastal islands just outside the surf line.	Nests on coastal islands of small to moderate size that afford immunity from attack by ground-dwelling predators.
Phalacrocorax auritus	double-crested cormorant	--	--	SC		X2	(Rookery site) colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state.	Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.
Botaurus lentiginosus	American bittern	SC	--				Freshwater and slightly brackish marshes. Also in coastal salt marshes.	Dense reed beds.
Ixobrychus exilis	least bittern	SC	--	SC			Colonial nester in marshlands and borders of ponds and reservoirs, which provide ample cover.	Nests usually placed low in tules, over water.
Ardea herodias	great blue heron	--	--			X1	(Rookery) colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, and wet meadows.
Ardea alba	great egret	--	--			X2	(Rookery) colonial nester in large trees.	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.
Egretta thula	snowy egret	SC	--			X2	(Rookery) colonial nester, with nest sites situated in protected beds of dense tules.	Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.
Egretta rufescens	reddish egret	--	--					
Nycticorax nycticorax	black-crowned night heron	--	--			X2	(Rookery) colonial nester, usually in trees, occasionally in tule patches.	Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, and marshy spots.
Plegadis chihi	white-faced ibis	SC	--	SC			(Rookery site) shallow freshwater marsh.	Dense tule thickets for nesting interspersed with areas of shallow water for foraging.
Pandion haliaetus	osprey	--	--	SC		X2	(Nesting) ocean shore, bays, freshwater lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.
Elanus leucurus	white-tailed kite	SC	--			X2	(Nesting) rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.
Circus cyaneus	northern harrier	--	--	SC		X2	(Nesting) coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to Mount Cienagas.	Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.
Accipiter striatus	sharp-shinned hawk	--	--	SC		X2	(Nesting) ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas.	North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 feet of water.
Accipiter cooperii	Cooper's hawk	--	--	SC		X2	(Nesting) woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.
Buteo swainsoni	Swainson's hawk	SC	ST				(Nesting) breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah.	Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.
Aquila chrysaetos	golden eagle	--	--	SC		X2	(Nesting and wintering) rolling foothills, mountain areas, sage-juniper flats, desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
Falco columbarius	merlin	--	--	SC		X2	(Wintering) seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms, and ranches.	Clumps of trees or windbreaks are required for roosting in open country.
Falco mexicanus	prairie falcon	--	--	SC		X2	(Nesting) inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
Laterallus jamaicensis coturniculus	California black rail	SC	ST				Mainly inhabits salt marshes bordering larger bays.	Occurs in tidal salt marsh heavily grown to pickleweed; also in freshwater and brackish marshes, all at low elevation.
Rallus longirostris levipes	light-footed clapper rail	FE	SE			X1	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation.	Requires dense growth of either pickleweed or cordgrass for nesting or escape cover; feeds on molluscs and crustaceans.

Scientific Name	Common Name	Federal Status	State Status	CDFG Status	CNPS Status	Documented Occurrence	General Habitat and Location	Specific Habitat Requirements
Rallus longirostris obsoletus	California clapper rail	FE	SE				Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco bay.	Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.
Charadrius alexandrinus nivosus	western snowy plover	FT	--	SC		X1	(Nesting) federal listing applies only to the Pacific coastal population.	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.
Charadrius montanus	mountain plover	PT	--	SC			(Wintering) short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.
Numenius americanus	long-billed curlew	SC	--	SC		X2	(Nesting) breeds in upland shortgrass prairies and wet meadows in northeastern California.	Habitats on gravelly soils and gently rolling terrain are favored over others.
Larus californicus	California gull	--	--	SC		X2	(Nesting colony) littoral waters, sandy beaches, waters and shorelines of bays, tidal mud-flats, marshes, lakes, etc.	Colonial nester on islets in large interior lakes, either fresh or strongly alkaline.
Sterna caspia	Caspian tern	--	--				(Nesting colony) nests in small colonies inland and along the coast.	Inland freshwater lakes and marshes; also, brackish or salt waters of estuaries and bays.
Sterna forsteri	Forster's tern	--	--				(Nesting colony) nests on salt-pond levees and islands in lakes, salt ponds, lagoons, and bays. Nests <330 feet from open water.	Isolation of colony is important for protection. Need abandoned pilings, low boardwalks, or exposed beaches for roosting.
Sterna antillarum browni	California least tern	FE	SE			X1	(Nesting colony) nests along the coast from San Francisco bay south to northern Baja California.	Colonial breeder on bare or sparsely vegetated flat substrates: sand beaches, alkali flats, land fills, or paved areas.
Rynchops niger	black skimmer	--	--	SC		X1	(Nesting colony) nests along the north and south ends of the Salton sea; also, on salt pond dikes of south San Diego bay.	Nests on gravel bars, low islets, and sandy beaches in unvegetated sites. Nesting colonies usually less than 200 pairs.
Athene cunicularia	burrowing owl	SC	--	SC		X1	(Burrow sites) open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Strix occidentalis occidentalis	California spotted owl	SC	--	SC			Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods. Canopy closure >40 percent.	Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.
Asio otus	long-eared owl	--	--	SC		X1	(Nesting) riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses.	Requires adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.
Asio flammeus	short-eared owl	--	--	SC			(Nesting) found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields.	Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.
Empidonax traillii extimus	southwestern willow flycatcher	FE	--				(Nesting) riparian woodlands in Southern California.	
Eremophila alpestris actia	California horned lark	--	--	SC		X2	Coastal regions, chiefly from Sonoma County to San Diego County. Also, main part of San Joaquin valley and east to foothills.	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, or alkali flats.
Campylorhynchus brunneicapillus couesi	coastal cactus wren	--	--	SC		X1	Southern California coastal sage scrub.	Wrens require tall opuntia cactus for nesting and roosting.
Polioptila californica	coastal California gnatcatcher	FT	--	SC		X1	Obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California.	Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.
Lanius ludovicianus	loggerhead shrike	SC	--	SC		X2	(Nesting) broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands; also, desert oases, scrub, and washes.	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
Vireo bellii pusillus	least bell's vireo	FE	SE			X1	(Nesting) summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, and mesquite.
Dendroica petechia brewsteri	yellow warbler	--	--	SC		X2	(Nesting) riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	Also nests in montane shrubbery in open conifer forests.
Agelaius tricolor	tricolored blackbird	FC	--	SC		X2	(Nesting colony) highly colonial species, most numerous in central valley and vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.
Icteria virens	yellow-breasted chat	--	--	SC		X1	(Nesting) summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses.	Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.
Aimophila ruficeps canescens	Southern California rufous-crowned	--	--	SC		X1	Resident in Southern California coastal sage scrub and sparse mixed chaparral.	Frequents relatively steep, often rocky hillsides with grass and forb patches.
Amphispiza belli belli	Bell's sage sparrow	SC	--	SC		X2	(Nesting) nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Nest located on the ground beneath a shrub or in a shrub 6 to 18 inches above ground. Territories about 50 yards apart.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	--	SE			X1	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County.	Nests in salicornia on and about margins of tidal flats.
Ammodramus savannarum	grasshopper sparrow	--	--			X2	(Nesting) dense grasslands on rolling hills, lowland plains, in valleys, and on hillsides on lower mountain slopes.	Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.
Fish								
Oncorhynchus mykiss irideus	southern steelhead - Southern California	FE	--	SC			Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County).	Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.

Scientific Name	Common Name	Federal Status	State Status	CDFG Status	CNPS Status	Documented Occurrence	General Habitat and Location	Specific Habitat Requirements
<i>Gila orcutti</i>	arroyo chub	--	--	SC			Los Angeles basin south coastal streams.	Slow water stream sections with mud or sand bottoms. Feed heavily on aquatic vegetation and associated invertebrates.
<i>Catostomus santaanae</i>	Santa Ana sucker	FT	--	SC		X1	Endemic to Los Angeles basin south coastal streams.	Habitat generalist, but prefers sand-rubble-boulder bottoms, cool, clear water, and algae.
<i>Eucyclogobius newberryi</i>	tidewater goby	FE	--	SC			Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River.	Found in shallow lagoons and lower stream reaches; they need fairly still but not stagnant water and high oxygen levels.
Mammals								
<i>Sorex ornatus salicornicus</i>	Southern California salt marsh shrew	--	--	SC			Coastal marshes in Los Angeles, Orange, and Ventura counties.	Requires dense vegetation and woody debris for cover.
<i>Macrotus californicus</i>	California leaf-nosed bat	--	--	SC			Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub, and palm oasis habitats.	Needs rocky, rugged terrain with mines or caves for roosting.
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	--	--	SC			Occasionally found in San Diego County, which is on the periphery of their range.	Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves, as well as in and around buildings.
<i>Myotis lucifugus occultus</i>	occult little brown bat	--	--	SC			Lowlands of the Colorado River and adjacent mountain ranges.	Needs roosting areas in tree hollows, rock crevices, under bridges, etc.
<i>Myotis yumanensis</i>	Yuma myotis	SC	--				Optimal habitats are open forests and woodlands with sources of water over which to feed.	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings, or crevices.
<i>Myotis velifer</i>	cave myotis	--	--	SC			Lowlands of the Colorado River and adjacent mountain ranges.	Requires caves or mines for roosting.
<i>Myotis evotis</i>	long-eared myotis	SC	--				Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet. Prefers coniferous woodlands and forests.	Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.
<i>Myotis thysanodes</i>	fringed myotis	SC	--				In a wide variety of habitats; optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer.	Uses caves, mines, buildings, or crevices for maternity colonies and roosts.
<i>Myotis volans</i>	long-legged myotis	SC	--				Most common in woodland and forest habitats above 4,000 feet. Trees are important day roosts; caves and mines are night roosts.	Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.
<i>Myotis ciliolabrum</i>	small-footed myotis	SC	--					
<i>Lasiurus blossevillii</i>	western red bat	--	--					
<i>Antrozous pallidus</i>	pallid bat	--	--	SC		X1	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
<i>Eumops perotis californicus</i>	western mastiff bat	SC	--	SC			Many open, semiarid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	Roosts in crevices in cliff faces, high buildings, trees, and tunnels.
<i>Nyctinomops femorasaccus</i>	pocketed free-tailed bat	--	--	SC			Variety of arid areas in Southern California: pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc.	Rocky areas with high cliffs.
<i>Nyctinomops macrotis</i>	big free-tailed bat	--	--	SC			Low-lying arid areas in Southern California.	Needs high cliffs or rocky outcrops.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	--	--	SC			Intermediate canopy stages of shrub habitats and open shrub / herbaceous and tree / herbaceous edges.	Coastal sage scrub habitats in Southern California.
<i>Perognathus longimembris</i>	Los Angeles pocket mouse	--	--	SC			Lower elevation grasslands and coastal sage communities in the Los Angeles basin.	Open ground with fine sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE	--	SC			Inhabits the narrow coastal plains from the Mexican border north to El Segundo, Los Angeles County.	Seems to prefer soils of fine alluvial sands near the ocean, but much remains to be learned.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	--	--	SC		X2	Coastal Southern California from San Diego County to San Luis Obispo County.	Moderate to dense canopies preferred. They are particularly abundant in rock outcrops and rocky cliffs and slopes.
<i>Taxidea taxus</i>	American badger	--	--				Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Need sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.
<i>Puma concolor</i>	mountain lion	--	--	FP		X2	Wide-ranging, chaparral, open grassland, woodlands, deserts.	Dense bottomland vegetation, also found in adjacent, rocky uplands, scrub, and woodland.
Reptiles								
<i>Clemmys marmorata pallida</i>	southwestern pond turtle	SC	--	SC		X2	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6,000-foot elevation.	Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks. Needs suitable nesting sites.
<i>Lampropeltis zonata parvirubra</i>	San Bernardino mountain kingsnake	--	--	SC			Bigcone spruce and chaparral at lower elevation. Black oak, incense cedar, Jeffrey pine, and ponderosa pine at higher elevations.	Well-lit canyons with rocky outcrops or rocky talus.
<i>Anniella pulchra pulchra</i>	silvery legless lizard	SC	--	SC			Sandy or loose loamy soils under sparse vegetation.	Soil moisture is essential. They prefer soils with a high moisture content.

Scientific Name	Common Name	Federal Status	State Status	CDFG Status	CNPS Status	Documented Occurrence	General Habitat and Location	Specific Habitat Requirements
<i>Phrynosoma coronatum blainvillei</i>	San Diego horned lizard	--	--	SC		X1	Inhabits coastal sage scrub and chaparral in arid and semiarid climate conditions.	Prefers friable, rocky, or shallow sandy soils.
<i>Cnemidophorus hyperythrus</i>	orange-throated whiptail	--	--	SC		X1	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats.	Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food, termites.
<i>Aspidoscelis tigris stejnegeri</i>	coastal western whiptail	--	--			X1	Found in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland and riparian areas.	Ground may be firm soil, sandy, or rocky.
<i>Charina trivirgata</i>	rosy boa	SC	--			X1	Desert and chaparral from the coast to the Mojave and Colorado deserts. Prefers moderate to dense vegetation and rocky cover.	Habitats with a mix of brushy cover and rocky soil such as coastal canyons and hillsides, desert canyons, washes and mountains.
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	--	--				Most common in open, relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams.	Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous vegetation.
<i>Salvadora hexalepis virgultea</i>	coast patch-nosed snake	--	--	SC		X1	Brushy or shrubby vegetation in coastal Southern California.	Requires small mammal burrows for refuge and overwintering sites.
<i>Thamnophis hammondi</i>	two-striped garter snake	--	--	SC			Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000-foot elevation.	Highly aquatic, found in or near permanent freshwater. Often along streams with rocky beds and riparian growth.
<i>Crotalus exsul</i>	northern red-diamond	--	--	SC		X1	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains.	Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects.
Invertebrates								
<i>Cicindela hirticollis grvida</i>	sandy beach tiger beetle	SC	--			X1	Inhabits areas adjacent to nonbrackish water along the coast of California from San Francisco Bay to northern Mexico.	Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.
<i>Panoquina errans</i>	wandering (=salt marsh) skipper	--	--			X1	Southern California coastal salt marshes.	Requires moist saltgrass for larval development.
<i>Danaus plexippus</i>	monarch butterfly	--	--			X1	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico.	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.
<i>Trigonoscuta dorothea</i>	Dorothy's El Segundo Dune	--	--			X1	Coastal sand dunes in Los Angeles County.	
<i>Tryonia imitator</i>	mimic tryonia (=California brackish water)	--	--			X1	Inhabits coastal lagoons, estuaries, and salt marshes from Sonoma County south to San Diego County.	Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.
Plants								
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	--	--		1A	X1	Marshes and swamps (coastal salt and freshwater). Historical from Southern California.	5 to 1,675 meters.
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant	--	--		1B	X1	Marshes and swamps (margins), valley and foothill grassland, vernal pools. From Southern California and Baja California.	Often in disturbed sites near the coast; also in alkaline soils sometimes with saltgrass; also vernal pools. 0 to 425 meters.
<i>Centromadia pungens</i> ssp. <i>laevis</i>	smooth tarplant	--	--		1B		Valley and foothill grassland, chenopod scrub, meadows, playas, riparian woodland.	Alkali meadow, alkali scrub; also in disturbed places. 0 to 480 meters.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	--	--		1B	X1	Coastal salt marshes, playas, valley and foothill grassland, vernal pools.	Usually found on alkaline soils in playas, sinks, and grasslands. 1 to 1,400 meters.
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	FE	SE		1B		Chaparral, valley and foothill grassland.	Edges of clearings in chaparral, usually at the ecotone between grassland and chaparral or edges of firebreaks. 30 to 630 meters.
<i>Berberis nevinii</i>	Nevin's barberry	FE	SE		1B		Chaparral, cismontane woodland, coastal scrub, riparian scrub.	On steep, north-facing slopes or in low-grade sandy washes. 290 to 1,575 meters.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	--	--		4		Chaparral, coastal scrub, valley and foothill grassland.	Clay soils; open grassy areas within shrubland. 15 to 830 meters.
<i>Caulanthus simulans</i>	Payson's jewel-flower	--	--		4		Chaparral, coastal scrub. Only known from Riverside and San Diego counties.	Frequently in burned areas, or in disturbed sites such as streambeds; also on rocky, steep slopes. 90 to 2,200 meters.
<i>Caulanthus stenocarpus</i>	slender-pod jewel-flower	--	SR				Chaparral. Often in recent burns.	This species was lumped w/c. <i>Heterophyllus heterophyllus</i> in the Jepson manual, a common taxon. It is CA-Rare in Title 14.
<i>Dithyrea maritima</i>	beach spectaclepod	SC	ST		1B		Coastal dunes, coastal scrub. Formerly more widespread in coastal habitats in Southern California.	Seashores, on sand dunes, and sandy places near the shore. 3 to 50 meters.
<i>Erysimum ammophilum</i>	coast wallflower	SC	--		1B		Chaparral (maritime), coastal dunes, coastal scrub.	Sandy openings. 0 to 130 meters.
<i>Rorippa gambelii</i>	Gambel's water cress	FE	ST		1B		Marshes and swamps.	Freshwater and brackish marshes at the margins of lakes and along streams, in or just above the water level. 5 to 1,305 meters.
<i>Caulanthus californicus</i>	California jewel-flower	FE	SE		1B		Chenopod scrub, valley and foothill grassland, pinyon juniper woodland.	Historical from various valley habitats in both central valley and Carrizo plain. 65 to 900 meters.

Scientific Name	Common Name	Federal Status	State Status	CDFG Status	CNPS Status	Documented Occurrence	General Habitat and Location	Specific Habitat Requirements
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	--	--		1B		Chaparral, Joshua tree woodland, mohavean desert scrub, pinyon juniper woodland, riparian woodland.	Sandy soil or coarse, granitic loam. 425 to 1,800 meters.
<i>Atriplex coronata</i> var. <i>coronata</i>	crownscale	--	--		4		Chenopod scrub, valley and foothill grassland, vernal pools.	Fine, alkaline soils, and clay soils. 1 to 200 meters.
<i>Atriplex coulteri</i>	Coulter's saltbush	--	--		1B		Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland.	Ocean bluffs and ridgetops, as well as alkaline low places. 10 to 440 meters.
<i>Atriplex pacifica</i>	South Coast saltscale	--	--		1B		Coastal scrub, coastal bluff scrub, playas, chenopod scrub.	Alkali soils. 1 to 500 meters.
<i>Atriplex parishii</i>	Parish's brittlescale	--	--		1B	X1	Alkali meadows, vernal pools, chenopod scrub, playas. Plant collected only once in California since 1974 (in 1993).	Usually on drying alkali flats with fine soils. 4 to 140 meters.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	--	--		1B	X1	Coastal bluff scrub, coastal scrub.	Alkaline soil. 3 to 250 meters.
<i>Suaeda californica</i>	California seablite	FE	--		1B		Marshes and swamps.	Margins of coastal salt marshes. 0 to 5 meters.
<i>Suaeda esteroa</i>	estuary seablite	--	--		1B	X1	Marshes and swamps.	Coastal salt marshes in clay, silt, and sand substrates. 0 to 5 meters.
<i>Suaeda taxifolia</i>	woolly seablite	--	--		4		Coastal bluff scrub, marshes, and swamps.	Margins of salt marshes. 0 to 15 meters.
<i>Calystegia peirsonii</i>	Peirson's morning-glory	--	--		4		Chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest.	Often in disturbed areas or along roadsides or in grassy, open areas. 390 to 1,470 meters.
<i>Calystegia sepium</i> ssp. <i>binghamiae</i>	Santa Barbara morning-glory	--	--		1A	X1	Coastal marshes. Formerly known from Southern California marshes; may be extinct.	0 to 30 meters.
<i>Dudleya multicaulis</i>	many-stemmed dudleya	--	--		1B	X1	Chaparral, coastal scrub, valley and foothill grassland. Endemic to Southern California.	In heavy, often clayey soils or grassy slopes. 0 to 790 meters.
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	--	--		1B		Chaparral, coastal scrub.	Stony, decomposed gabbro soil. 150 to 1,000 meters.
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	FE	--		1B		Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland.	Recent burns or disturbed areas; in stiff gravelly clay soils overlying granite or limestone. 4 to 640 meters.
<i>Astragalus pycnostachyus</i> var.	Ventura Marsh milk-vetch	FE	SE		1B	X1	Coastal salt marsh. Historically in coastal Southern California; now known at one site in Ventura County.	Within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs. 1 to 35 meters.
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	--	--		1B	X1	Riparian woodland.	Salix swales in riparian habitats. 60 to 305 meters.
<i>Nama stenocarpum</i>	mud nama	--	--		2	X1	Marshes and swamps.	Lake shores, river banks, intermittently wet areas. 5 to 500 meters.
<i>Phacelia stellaris</i>	Brand's phacelia	--	--		1B	X1	Coastal scrub, coastal dunes. Southern California and Baja.	Open areas. 5 to 1,515 meters.
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	--	--		2	X1	Alkali playas, brackish marshes, chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub.	Alkali springs and marshes. 0 to 1,500 meters.
<i>Abronia villosa</i> var. <i>aurita</i>	chaparral sand-verbena	--	--		1B	X1	Chaparral, coastal scrub.	Sandy areas. 80 to 1,600 meters.
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	C	SE		1B	X1	Coastal scrub. Formerly known from Southern California.	Sandy soils. 3 to 1,035 meters.
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	C	SE		1B	X1	Coastal scrub. Formerly known from Southern California.	Sandy soils. 3 to 1,035 meters.
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	--	--		3		Coastal scrub, chaparral.	Dry slopes and flats; sometimes at interface of two vegetation types, such as chaparral and oak woodland; dry, sandy soils. 40 to 1,705 meters.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast woolly-heads	--	--		1B	X1	Coastal dunes.	0 to 100 meters.
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woollystar	FE	SE		1B	X1	Coastal scrub, chaparral. Formerly known from Orange and San Bernardino counties; now known from one extended population.	In sandy soils on river floodplains or terraced fluvial deposits. 150 to 610 meters.
<i>Navarretia prostrata</i>	prostrate navarretia	SC	--		1B	X1	Coastal scrub, valley and foothill grassland, vernal pools.	Alkaline soils in grassland, or in vernal pools. 15 to 700 meters.
<i>Horkelia cuneata</i> ssp. <i>puberula</i>	mesa horkelia	--	--		1B	X1	Chaparral, cismontane woodland, coastal scrub.	Sandy or gravelly sites. 70 to 810 meters.
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	salt marsh bird's-beak	FE	SE		1B	X1	Coastal salt marsh, coastal dunes.	Limited to the higher zones of the salt marsh habitat. 0 to 30 meters.

Scientific Name	Common Name	Federal Status	State Status	CDFG Status	CNPS Status	Documented Occurrence	General Habitat and Location	Specific Habitat Requirements
Sagittaria sanfordii	Sanford's arrowhead	SC	--		1B	X1	Marshes and swamps.	In standing or slow-moving freshwater ponds, marshes, and ditches. 0 to 610 meters.
Calochortus weedii var. intermedius	intermediate mariposa lily	--	--		1B	X1	Coastal scrub, chaparral, valley and foothill grassland.	Dry, rocky open slopes and rock outcrops. 120 to 850 meters.
Orcuttia californica	California orcutt grass	FE	SE		1B	X1	Vernal pools. Known only from Southern California and Baja.	15 to 660 meters.

Codes:

Federal Status

FE – Federal Endangered
 FT – Federal Threatened
 PE – Federal Proposed Endangered
 PT – Federal Proposed Threatened
 C – Federal Candidate Species
 SC – Federal Species of Concern

State Status

SE – State Endangered
 ST – State Threatened
 SR – State Rare

CDFG Status

SC – Species of Special Concern
 FP – Fully Protected

CNPS Status

(1A) Presumed extinct in California;
 (1B) Rare, threatened, or endangered in California and elsewhere;
 (2) Rare, threatened, or endangered in California, but more common elsewhere;
 (3) More information is needed;
 (4) Limited distribution

Documented Occurrence

X1 – Documented in Study Area in California Natural Diversity Database (CNDDDB), 2005
 X2 – No documentation encountered in preparing this report, but high likelihood of occurrence

Appendix E
Material Safety Data Sheets

MATERIAL SAFETY DATA SHEET
Ferrous Chloride

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

	<u>USA</u>	<u>CANADA</u>
Supplier:	Kemira Water Solutions, Inc. 316 Bartow Municipal Airport Bartow, Florida 33830	Kemira Water Solutions, Inc of Canada 3405 Blvd. Marie Victorin Varennes, Quebec J3X 1T6
Telephone:	(800) 879-6353 - Sales (785) 842-7424 (800-450-7352 – Polymers)	(800) 465-6171 (450) 652-0665

Emergency Contacts (24 hr.)

FOR EMERGENCIES INVOLVING CHEMICAL SPILL OR RELEASE, CALL

CHEMTREC (800) 424-9300	USA (TOLL FREE)
CANUTEC (613) 996-6666	CANADA (CALL COLLECT)

Product Name:	Ferrous Chloride
Chemical Family:	Inorganic Salts
Formula:	FeCl ₂
Synonym:	Iron (II) Chloride
Acceptable Product Uses:	Water and wastewater treatment, odor removal, adhesive for dye, textile impression pigment, ink and photoengraving.

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number #</u>	<u>Concentration</u>
Ferrous Chloride	7758-94-3	18-28%
Hydrochloric Acid	7647-01-0	<5 %

WHMIS Classification: Class E

3. HAZARDS IDENTIFICATION

Emergency Overview: Irritating to skin, eyes, and mucous membranes.

Potential Effects on Health: Acute and chronic.

Carcinogenicity: Does not contain any known carcinogens or potential carcinogens.

4. FIRST AID MEASURES

General: If you feel unwell, seek medical attention (show the label or this MSDS if possible). Effects of exposure (inhalation, ingestion, or skin contact)

MATERIAL SAFETY DATA SHEET

Ferrous Chloride

to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Skin Contact: Remove all contaminated clothing, jewelry, and shoes. Wash affected area with soap or mild detergent and running water for at least 15 minutes. If irritation persists, seek medical attention.

Eye Contact: Flush immediately with water for at least 15 minutes, occasionally lifting upper and lower lids. Obtain medical attention immediately.

Inhalation: Move to fresh air. Give artificial respiration ONLY if breathing has stopped. Do not use mouth-to-mouth method if victim has ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention immediately.

Ingestion: *If conscious*, give two (2) glasses of water. **DO NOT INDUCE VOMITING.** Do not give anything by mouth to an unconscious person. Obtain immediate medical attention.

5. FIRE FIGHTING MEASURES

Flash point	Not applicable. Will not burn
Flammable Limits (Lower)	Not applicable
Flammable Limits (Upper)	Not applicable
Auto Ignition Temperature	Not applicable
Combustion and Thermal Decomposition Products	Hydrogen chloride gas, phosgene gas if dried and then heated
Rate of Burning	Does not burn
Explosive Power	Not applicable
Sensitivity to Static Discharge	Not available

Fire and Explosion Hazards: During a fire, irritating/toxic hydrogen chloride, and/or phosgene gases may be generated if material is dried and then heated to decomposition.

Extinguishing Media: The substance is not combustible. Use extinguishing media appropriate to the surrounding fire.

NOTE: Also see “Section 10 – Stability and Reactivity”

6. ACCIDENTAL RELEASE MEASURES

Spills, Leaks, or Release:

- **Restrict access** until clean-up operations are complete. Wear appropriate Personal Protective Equipment per Section 8. Ensure trained personnel conduct clean up and wear Personal Protective Equipment per Section 8.
- **Stop leak if possible.** Avoid personal risk.
- **Notify Authorities** if release exceeds reportable quantity per Section 15

MATERIAL SAFETY DATA SHEET

Ferrous Chloride

- **Small Spills** – Absorb spill with clay or dry material or neutralize with lime, limestone or soda ash and collect in appropriate container for disposal. Neutralization with soda ash can generate carbon dioxide so additional ventilation may be necessary.
- **Large Spills** – Prevent entry into sewers and confined areas. Dike, if possible. Keep unnecessary people away, isolate area and deny entry. Pump liquid material into appropriate vessels as possible or absorb spill with clay absorbents or non-reactive dry materials and collect in appropriate container for disposal.
Neutralize spill residuals carefully with lime, limestone, or soda ash and collect in suitable container for disposal. Flush area with water. This could generate carbon dioxide so additional ventilation may be necessary. Notify the appropriate environmental authorities.

7. HANDLING AND STORAGE

Handling: Handle all chemicals with respect. Review the label, this MSDS and any other applicable information before use. Keep separated from incompatible substances. Use appropriate Personal Protective Equipment per Section 8. Handle only with equipment, materials and supplies specified by their manufacturer as being compatible and appropriate for use with this product.

Storage Requirements:

Bulk storage containers and ancillary fill and feed systems should be constructed out of appropriate materials such as polyethylene, polypropylene, rubber-lined steel and FRP designated as appropriate for use with this product. Storage tanks should be vented to scrubber or exterior atmosphere. Storage facilities should have secondary containment as required by law or regulation. **Storage tanks, piping and offloading points should be labeled with appropriate signage to avoid accidents.**

Some concentrations of this product will freeze or crystallize at low temperatures. Insulate and heat-trace storage tanks, pumps, pipes and ancillary equipment as necessary.

Product should be used within one (1) year.

Material may be stored in tightly closed shipping containers, preferably the supplier containers. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Preventive Measures:

Engineering Controls: A ventilation system of local/general exhaust is recommended to keep employee exposure below the Airborne Exposure Limits. Ensure that eyewash station and safety showers are proximal to the workstation location.

Personal Protection Equipment:

Eye Protection: Wear splash resistant chemical goggles and, where splashing is possible, a full face shield. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to avoid skin contact.

Recommended Protective Material: Neoprene

MATERIAL SAFETY DATA SHEET

Ferrous Chloride

Respiratory Protection: Under conditions of misting or contact with head gases, respiratory protection may be needed. Consider respirator-warning properties before use.

- With limited contact use an appropriate chemical cartridge respirator with acid gas cartridge(s)

- When cleaning, decontaminating or performing maintenance on tanks, containers, piping systems and accessories, and in any other situations where airborne contaminants and/or dust could be generated, use protective equipment to protect against ingestion or inhalation. HEPA or air supplied respirator, full protective coveralls with head cover, gloves and boots or chemical suits, and boots are suggested.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light green
Odor:	Slight acidic odor
Form:	Liquid
pH as is:	<1
Vapor Pressure (mm Hg):	N/A
Boiling Point:	105 °C - 110 °C (220 °F - 230 °F)
Specific Gravity (20°C):	1.18-1.32
Solubility (water):	soluble
Vapor Density (Air=1):	N/A
Percent Volatile by Vol.:	N/A
Freezing Point:	Concentration dependent (Consult your Kemiron/Eaglebrook representative)

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products: Thermal decomposition: after completely dry and heated to decomposition will produce hydrogen chloride gas and phosgene gas

Chemical Stability: Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid contact with mineral acids, excessive heat and bases/alkalis

Incompatibility with other Substances: Metals, metal alloys, aluminum, stainless steel, carbon, brasses, and nylon.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Not available.

12. ECOLOGICAL INFORMATION

Not available.

MATERIAL SAFETY DATA SHEET

Ferrous Chloride

13. DISPOSAL CONSIDERATIONS

Review Federal, State, Provincial, and Local government regulations prior to disposal. This material exhibits the characteristic of corrosivity to metals and other building materials and any disposal must comply with hazardous waste disposal requirements. Any residues and/or rinse waters from cleaning of tanks, containers, piping systems and accessories may be a hazardous characteristic waste and must be properly disposed of in accordance with federal, state, provincial and local laws.

RCRA: Test waste material for corrosivity, D002, prior to disposal

14. TRANSPORT INFORMATION

	Canada (TDG)	U.S. (DOT)
Shipping Name	Ferrous Chloride Solution	Ferrous Chloride Solution
Hazard Class/Division	8: Corrosive liquid	8: Corrosive liquid
Identification No.	UN1760	UN1760
Packing Group:	II	II

Transportation Emergency Telephone Numbers:

1-800-424-9300 CHEMTREC (USA)

1-613-996-6666 CANUTEC (CANADA) (CALL COLLECT)

IATA/ICAO Class: 8

15. REGULATORY INFORMATION

USA CLASSIFICATION:

OSHA Classification: Hazardous by definition of Hazard Communication Standard (29 CFR 1920.1200)

CERCLA: Hazardous substance/reportable quantity (RQ): final RQ = 100 lb. (45.4 kg) Based on anhydrous Ferrous Chloride (divide by solution concentration to obtain solution weight)

SARA Regulations sections 313 and 40 CFR 372: No

SARA Hazard Categories, SARA SECTIONS 311/312 (40CFR370.21):

Acute	Yes
Chronic	No
Fire	No
Reactive	No
Sudden Release	No
OSHA Process Safety (29CFR1910.119)	No

Clean Water Act Requirements: Designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance.

MATERIAL SAFETY DATA SHEET
Ferrous Chloride

TSCA: This substance or all ingredients of this product are listed on the Chemical Substances Inventory of the TSCA. Does not require reporting.

Other Regulations/Legislation which apply to this product:

California Proposition 65: No

Right-To-Know Lists: Massachusetts, New Jersey, Pennsylvania, California
 This product does not contain, nor is it manufactured with, ozone-depleting substances.

CANADIAN CLASSIFICATION

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all information required by the CPR.

Controlled Products Regulation (WHMIS) Classification: E: Corrosive

CEPA / Canadian Domestic Substances List (DSL): The substance in this product is not on the Canadian Domestic Substances List (CEPA DSL).

EEC CLASSIFICATION

EINECS: 231-729-4

16. OTHER INFORMATION

National Fire Protection Association (NFPA) and Hazardous Materials Identification System (HMIS) Ratings:

	NFPA	HMIS
HEALTH	2	2
FIRE	0	0
REACTIVITY	1	1

4 = Extreme/Severe
3 = High/Serious
2 = Moderate
1 = Slight
0 = Minimum

Kemira Water Solutions, Inc., and Kemira Water Solutions of Canada, Inc. provide the foregoing information in good faith and make no representations as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using the product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

Kemira Water Solutions, Inc., and Kemira Water Solutions of Canada, Inc. make no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability or fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Kemira Water Solutions, Inc., and Kemira Water Solutions of Canada, Inc. disclaim responsibility for damages resulting from use or reliance upon this information.

MSDS Revised on October 1, 2006 by Kemira Water Solutions HSE group



Material Safety Data Sheet

Hydrogen Peroxide 20% - 60%

1. Chemical Product and Supplier Identification

Product Name: Hydrogen Peroxide, 20%-60%

Chemical Name: Hydrogen peroxide, aqueous solution

Synonyms: Hydrogen dioxide, hydroperoxide, peroxide

Grades/Trade Names: 27.5% - Technical
31% - Electronic , Electronic Low Carbon, UltraPure, UltraHigh Purity, UltraPure Plus, Pico-Pure™
35% - Technical, Technical 35/D Cosmetic, Food, PFP™, Chemical, High Purity Food
40% - Technical
50% - Technical, Technical 50/D Dilution, Cosmetic, Electronic, Food, PFP™, UltraPure, Chemical, Chemical LP, SVP-HP®(1)

Manufacturer: Solvay Interox, Inc. **Office:** 713/525-6500
3333 Richmond Avenue (7:30 am-5:00 pm CST M-F)
Houston, Texas 77098

CANUTEC: 613/996-6666 **Emergency:** 281/479-2826
(24 hours every day) (24 hours every day)

CHEMTREC: 800/424-9300
(24 hours every day)

Product Uses: Used in bleaching textiles, food, hair, paper and other materials; used in the manufacture of a wide range of chemicals, plastics, pharmaceuticals; used in photography, electroplating, water treatment and wastewater treatment.

MSDS Number: ZIH20/60-001-04 **Effective Date:** September 1, 2001

Not valid two years after effective date or after issuance of superseding MSDS, whichever is earlier. French or Spanish translations of this MSDS are available. Check www.solvayinterox.com or call Solvay Interox, Inc. to verify the latest version or translation availability.

Material Safety Data Sheets contain country specific regulatory information; therefore, the MSDS's provided are for use only by customers of Solvay Interox, Inc. in the United States of America and, if specifically indicated, Canada and Mexico. If you are located in a country other than the United States, please contact the Solvay Interox Group company in your country for MSDS information applicable to your location.

www.solvayinterox.com
1-800-INTEROX (468-3769)
Copyright 2001, Solvay Interox, Inc.
All Rights Reserved.
Revised 9-1-01
MSDS No. ZIH20/60-001-04
Page 1 of 11

**Solvay
Interox**



2. Composition/Information on Ingredients

Components	Formula	CAS No.	Percent
Hydrogen peroxide	H ₂ O ₂	7722-84-1	20-60
Water	H ₂ O	7732-18-5	Balance

3. Hazards Identification

- Emergency Overview:**
- Toxicity effects principally related to its corrosive properties.
 - Non-combustible, but may contribute to the combustion of other substances and causes violent and sometimes explosive reactions.
 - May be fatal if swallowed.

Potential Health Effects

General:

- Corrosive to mucous membranes, eyes and skin.
- The seriousness of the lesions and the prognosis of intoxication depend directly on the concentration and duration of exposure.

Inhalation:

- Nose and throat irritation.
- Cough.
- In case of repeated or prolonged exposure: risk of sore throat, nose bleeds, chronic bronchitis.

Eye contact:

- Severe eye irritation, watering, redness and swelling of the eyelids.
- Risk of serious or permanent eye lesions.

Skin contact:

- Irritation and temporary whitening at contact area.
- Risk of burns.

Ingestion:

- Paleness and cyanosis of the face.
- Severe irritation, risk of burns and perforation of the gastrointestinal tract accompanied by shock.
- Excessive fluid in the mouth and nose, with risk of suffocation.
- Risk of throat edema and suffocation.
- Bloating of stomach, belching.
- Nausea and vomiting (bloody).
- Cough.
- Risk of chemical pneumonitis from product inhalation.

Carcinogen Designation:

- IARC (International Agency for Research on Cancer): 3 - Not Classifiable as to Carcinogenicity to Humans.
- TLV A3 - Animal carcinogen: Agent is carcinogenic in experimental animals at relatively high dose, by route(s) of administration, at site(s), of histologic types(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

www.solvayinterox.com
1-800-INTEROX (468-3769)
Copyright 2001, Solvay Interox, Inc.
All Rights Reserved.
Revised 9-1-01
MSDS No. ZIH20/60-001-04
Page 2 of 11

4. First-Aid Measures

General

recommendations:

- In case of product splashing into the eyes and face, treat eyes first.
- Do not dry soiled clothing near an open flame or incandescent heat source.
- Submerge soiled clothing in water prior to drying.

Inhalation:

- Remove the subject from the contaminated area.
- Consult with a physician in case of respiratory symptoms.

Eye contact:

- Flush eyes as soon as possible with running water for 15 minutes, while keeping the eyelids open.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Consult with an ophthalmologist in all cases.

Skin contact:

- Remove contaminated shoes, socks and clothing, under a shower if necessary; wash the affected skin with running water.
- Keep warm (blanket) and provide clean clothing.
- Consult with a physician in all cases.

Ingestion:

- Consult with a physician immediately in all cases.
- Take to hospital.

If the subject is completely conscious:

- Rinse mouth and administer fresh water.
- Do not induce vomiting.

If the subject is unconscious:

- Loosen collar and tight clothing, lay the victim on his/her left side.
- Oxygen or pulmonary resuscitation if necessary.
- Keep warm (blanket).
- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Medical Treatment

Inhalation:

- Negligible.

Eye contact:

- On the advice of the ophthalmologist.

Skin contact:

- Usual treatment for burns.

Ingestion:

- Oxygen therapy via intra-tracheal intubation.
- If necessary, tracheotomy.
- Placement of gastric catheter to release stomach gases.
- Avoid gastric lavage risk of perforation.
- In case of intense pain: inject an I.M. morphomimetic drug (piritramide) before taking to hospital.
- Prevention or treatment for shock and pulmonary edema.
- Urgent digestive endoscopy with aspiration of the product.
- Treatment of gastrointestinal tract burns and resulting effects.

5. Fire-Fighting Measures

- Flash point:** Non-flammable.
- Flammability:** Non-flammable.
- Auto-flammability:** Non-flammable.
- Danger of explosion:**
- With flammable liquids.
 - With certain materials (see section 10).
 - In case of heating.
- Oxidizing properties:** Oxidizer.
- Common extinguishing methods:** Large quantities of water, water spray.
- Inappropriate extinguishing methods:** No restriction.
- Specific hazards:**
- Oxygen released on exothermic decomposition may support combustion in case of surrounding fire.
 - Oxidizing agent, may cause spontaneous ignition with combustible materials.
 - Contact with flammables may cause fire or explosions.
 - Pressure burst may occur due to decomposition in confined spaces/containers.
- Protective measures in case of intervention:**
- Evacuate all non-essential personnel.
 - Intervention only by capable personnel who are trained and aware of the hazards of the product.
 - Wear self contained breathing apparatus when in close proximity or in confined spaces.
 - When intervention in close proximity, wear acid resistant oversuit.
 - After intervention, proceed to clean the equipment.
 - Take a shower, remove clothing carefully, clean and check.
- Other precautions:**
- If safe to do so, remove the exposed containers, or cool with large quantities of water.
 - Stay upwind.
 - Keep at a safe distance in a protected location.
 - Never approach containers which have been exposed to fire, without cooling them sufficiently.

6. Accidental Release Measures

Precautions

- Observe the protection measures given in sections 5 and 8.
- Isolate the area.
- Avoid materials and products which are incompatible with the product (see section 10).
- If safe to do so, without exposing personnel, try to stop the spillage.
- In case of contact with combustible materials, avoid product drying out by dilution with water.

Cleanup methods:

- If possible, dike large quantities of liquid with sand or earth.
- Dilute with large quantities of water.
- Do not add chemical products.
- For disposal methods, refer to section 13.
- In order to avoid the risk of contamination, the recovered product must not be returned to the original tank/container.

Precautions for protection of the environment:

- Immediately notify the appropriate authorities in case of reportable spill.

The National Transportation Safety Board (NTSB) and Federal Aviation Administration (FAA) have requested the following information be provided:

Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

7. Handling and Storage

Handling:

- Operate in a well-ventilated area.
- Keep away from heat sources.
- Keep away from incompatible products.
- Prevent all contact with organics.
- Use equipment and containers which are compatible with the substance.
- Before all operations, passivate the piping circuits and vessels.
- Never return unused product to storage container.
- Ensure an adequate supply of water is available in the event of an accident.
- Containers and equipment used to handle hydrogen peroxide should be used exclusively for hydrogen peroxide.

Storage:

- Store in a ventilated, cool area.
- Store away from heat sources.
- Keep away from incompatible products (see section 10).
- Keep away from combustible substances.
- Keep in container fitted with safety valve or vent.
- Keep in original packaging, closed.
- Provide containment diking for storage of the packages and transfer installation.
- Regularly check the condition and temperature of the containers.
- For bulk storage recommendations, consult Solvay Interlox, Inc.

Other precautions:

- Warn personnel of the dangers of the product.
- Follow the protective measures given in section 8.
- Do not confine the product in the circuit, between closed valves, or in a container without a vent.

Packaging:

Consult Solvay Interlox for the proper packaging material for specific grades of hydrogen peroxide.

- Aluminum 99.5%.
- Stainless steel 304 L and 316 L.
- Approved grades of HDPE.

8. Exposure Controls/Personal Protection

Engineering controls:

- Provide local ventilation.
- Follow the protective measures given in section 7.
- Provide ventilation in work areas to keep exposure below the following applicable limits:

ACGIH® TLV® (1996)

1 ppm TWA
1.4 mg/m³ TWA

OSHA PEL

1 ppm TWA
1.4 mg/m³ TWA

NIOSH REL (1994)

1 ppm TWA
1.4 mg/m³ TWA

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

Respiratory protection:

NIOSH approved full-face supplied air respirator for excessive concentrations.

Hand protection:

Chemical resistant protective gloves made of PVC or rubber.

Eye protection:

Wear protective goggles for all industrial operations. If a risk of splashing exists, wear goggles and face shield.

Skin protection:

Wear coveralls. If a risk of splashing exists, wear chemical resistant slicker suit and boots of PVC or rubber.

Other precautions:

- Provide shower and eyewash stations.
- Consult your industrial hygienist or safety manager for the selection of personal protective equipment suitable for the working conditions.

The National Transportation Safety Board (NTSB) and Federal Aviation Administration (FAA) have requested the following information be provided:

Completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood, or other combustibles can cause the material to ignite and result in a fire.

9. Physical and Chemical Properties

Appearance:	Colorless liquid.
Odor:	Slightly pungent.
pH:	1 - 4
Vapor pressure:	<u>Total (H₂O₂ + H₂O)</u> 12 mbar (9.0 mmHg) @ 20° C (68° F) for 50% hydrogen peroxide. 72 mbar (54 mmHg) @ 50° C (122° F) for 50% hydrogen peroxide. <u>Partial (H₂O₂)</u> 1 mbar (0.75 mmHg) @ 30° C (86° F) for 50% hydrogen peroxide.
Vapor density:	1.0 for 50% hydrogen peroxide.
Boiling point:	108° C (226° F) @ 1.013 bar (760 mmHg) for 35% hydrogen peroxide. 115° C (239° F) @ 1.013 bar (760 mmHg) for 50% hydrogen peroxide.
Freezing point:	-33° C (-27° F) for 35% hydrogen peroxide. -52° C (-62° F) for 50% hydrogen peroxide.
Solubility in water:	Complete.
Specific gravity:	1.1 @ 20° C (68° F) for 27.5% hydrogen peroxide. 1.2 @ 20° C (68° F) for 50% hydrogen peroxide.
Molecular weight:	34.01
Viscosity:	1.07 mPa·s @ 20° C (68° F) for 27.5% hydrogen peroxide. 1.17 mPa·s @ 20° C (68° F) for 50% hydrogen peroxide.
Decomposition temperature:	≥ 60° C (140° F) Self-accelerated decomposition temperature (SADT) with oxygen release.
Surface tension:	74 mN/m @ 20° C (68° F) for 27.5% hydrogen peroxide. 75.6 mN/m @ 20° C (68° F) for 50% hydrogen peroxide.

10. Stability and Reactivity

Chemical stability: Stable under normal conditions of use with slow gas release.

Conditions to avoid:

- Heat/Sources of heat.
- Contamination.

Materials to avoid:

- Acids.
- Bases.
- Metals.
- Salts of metals.
- Reducing agents.
- Organic materials.
- Flammable substances.

Hazardous decomposition products: Oxygen.

Hazardous polymerization: Will not occur.

Other information: Decomposition releases steam and heat.

11. Toxicological Information

- Acute toxicity:**
- Oral route, LD₅₀, rat, 1232 mg/kg for 35% hydrogen peroxide.
 - Oral route, LD₅₀, rat, 841 mg/kg for 60% hydrogen peroxide.
 - Dermal route, LD₅₀, rabbit, > 2000 mg/kg for 35% hydrogen peroxide.
 - Inhalation, LC₅₀, 4 hours, rat, 2000 mg/m³.
 - Inhalation, LC₀, 1 hour, mouse, 2170 mg/m³.
- Irritation:**
- Rabbit, Serious damage (eyes) for 70% hydrogen peroxide.
 - Rabbit, Irritant (skin) for < 50% hydrogen peroxide.
 - Rabbit, Corrosive (skin) 1 hour, for ≥ 50% hydrogen peroxide.
 - Mouse, Respiratory irritation (RD₅₀), 665 mg/m³.
- Sensitization:** Guinea Pig, Nonsensitizing (skin).
- Chronic toxicity:**
- In vitro, without metabolic activation, mutagenic effect.
 - In vivo, no mutagenic effect.
 - Oral route, after prolonged exposure, mouse.
Target organ: duodenum, carcinogenic effect.
 - Dermal route, after prolonged exposure, mouse, no carcinogenic effect.
 - Oral route, after prolonged exposure, rat, no carcinogenic effect.
 - Oral route, after prolonged exposure, rat/mouse.
Target organ: gastro-intestinal system, observed effect.
 - Inhalation, after repeated exposure, dog, 7 ppm, irritating effect.
- Comments:**
- Toxic effect linked with corrosive properties.
 - The carcinogenic effect found in animals is not demonstrated in humans.

12. Ecological Information

- Acute ecotoxicity:**
- Fish, Pimephales promelas
LC₅₀, 96 hours, 16.4 mg/L
NOEC, 96 hours, 5 mg/L
 - Crustaceans, Daphnia pulex
EC₅₀, 48 hours, 2.4 mg/L
NOEC, 48 hours, 1 mg/L
 - Algae, various species
EC₅₀, 72 to 96 hours, 3.7 to 160 mg/L in fresh water.
 - Algae, Nitzchia closterium
EC₅₀, 72 to 96 hours, 0.85 mg/L in salt water.
- Mobility:**
- Air, Henry's law constant (H) = 1 mPa.m³/mol @ 20° C (68° F)
Result: non-significant volatility.
 - Air, condensation on contact with water droplets.
Result: rain washout.
 - Water - Non-significant evaporation.
 - Soil/sediments - Non-significant evaporation and adsorption.

- Abiotic degradation:** Air, indirect photo-oxidation, $t_{1/2}$ 10 to 20 hours.
Conditions: sensitizer: OH radical.
Water, redox reaction, $t_{1/2}$ 2.5 days, 10,000 ppm.
Conditions: mineral and enzymatic catalysis/fresh water.
Water, redox reaction, $t_{1/2}$ 20 days, 100 ppm.
Conditions: mineral and enzymatic catalysis/fresh water.
Water, redox reaction, $t_{1/2}$ 60 hours.
Conditions: mineral and enzymatic catalysis/salt water.
Soil, redox reaction, $t_{1/2}$ 15 hour(s).
Conditions: mineral catalysis.
- Biotic degradation:** Aerobic, $t_{1/2}$ < 1 minutes in biological treatment sludge.
Result: rapid and considerable biodegradation.
Aerobic, $t_{1/2}$ between 0.3 to 2 days in fresh water.
Result: rapid and considerable biodegradation.
Effects on biological treatment plants, > 200 mg/l.
Result: inhibitory action.
- Potential for bioaccumulation:** Result: non-bioaccumulable (enzymatic metabolism).
- Comments:**
- Toxic for aquatic organisms.
 - Nevertheless, hazard for the environment is limited due to product properties:
 - No bioaccumulation.
 - Considerable abiotic and biotic degradability.
 - No toxicity of degradation products (H_2O and O_2).

13. Disposal Considerations

Waste Disposal

Method: Consult current federal, state and local regulations regarding the proper disposal of this material and its emptied containers.

14. Transport Information

D.O.T. Proper Shipping Name: Hydrogen peroxide, aqueous solution

UN Number: 2014

Primary Hazard: 5.1

Subsidiary Hazard: 8

Label(s): Oxidizer, Corrosive

Packing Group: II

15. Regulatory Information

TSCA Inventory List: Yes.

CERCLA Hazardous Substance (40 CFR Part 302)

Listed substance: No.

Unlisted substance: Yes.

Characteristic: Ignitability, corrosivity.

RCRA Waste Number: D001, D002.

Reportable Quantity: 100 pounds.

SARA, Title III, Sections 302/303
(40 CFR Part 355 - Emergency Planning and Notification)

Extremely hazardous substance: Yes, > 52% hydrogen peroxide.

Reportable Quantity: 1000 pounds.

Threshold planning quantity: 1000 pounds.

SARA, Title III, Sections 311/312
(40 CFR Part 370 - Hazardous Chemical Reporting: Community Right-To-Know)

Hazard category: Immediate (acute) health hazard.
Fire hazard.

Threshold planning quantity: 10,000 pounds for < 52% hydrogen peroxide.
500 pounds for > 52% hydrogen peroxide.

SARA, Title III, Section 313
(40 CFR Part 372 - Toxic Chemical Release Reporting: Community Right-To-Know)

Toxic chemical: No.

WHMIS

Classification: C Oxidizing material
E Corrosive
F Dangerously reactive material

Canadian Domestic

Substances List: DSL / Non confidential #6754.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Occupational Safety and Health Administration (OSHA) requirements for process safety management must be followed anytime at least 7,500 lbs. of hydrogen peroxide at concentrations of at least 52% are used or stored. Refer to **29CFR1910.119** for specific details.

www.solvayinterox.com
1-800-INTEROX (468-3769)
Copyright 2001, Solvay Interox, Inc.
All Rights Reserved.
Revised 9-1-01
MSDS No. ZIH20/60-001-04
Page 10 of 11

Material Safety Data Sheet

Revision Issued: 4/17/2000

Supersedes: 8/08/97

First Issued: 11/20/95

Section I - Chemical Product And Company Identification

Product Name: Hi-Chem Mag-50

CAS Number: 1309-42-8

HBCC MSDS No. CM04410



HILL BROTHERS *Chemical Co.*

1675 NORTH MAIN STREET • ORANGE, CALIFORNIA 92667-3400
 (714) 998-8800 • FAX: (714) 998-8310
<http://hillbrothers.com>

1675 No. Main Street, Orange, California 92867
 Telephone No: 714-998-8800 | Chemtrec: 800-424-9300

Section II - Composition/Information On Ingredients

			Exposure Limits (TWAs) in Air		
Chemical Name	CAS Number	%	ACGIH TLV	OSHA PEL	STEL
Magnesium Hydroxide	1309-42-8	51-65	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	15 mg/m ³ (total dust)	N/A

Section III - Hazard Identification

Routes of Exposure: N/A

Summary of Acute Health Hazards: The product presents a very low health risk. Magnesium hydroxide is a general purpose food additive. Dust generated from the dried product is classified as a nuisance dust.

Ingestion: Ingestion is unlikely. If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, abdominal pain and diarrhea.

Inhalation: May irritate the respiratory tract on prolonged or repeated contact. May aggravate pre-existing respiratory conditions.

Skin: Repeated or prolonged contact may cause irritation.

Eyes: May irritate or injure eyes.

Summary of Chronic Health Hazards: The excessive inhalation above (TLV) of mineral dust, over long periods of time, may cause industrial bronchitis, reduce breathing capacity, and lead to increased susceptibility to other lung disease.

Signs and Symptoms of Exposure: N/A

Effects of Overexposure: N/A

Medical Conditions Generally Aggravated by Exposure: Dust from the dried product may aggravate pre-existing chronic lung conditions such as, but not limited to, bronchitis, emphysema, and asthma.

Note to Physicians: N/A

Section IV - First Aid Measures

Ingestion: Low toxicity. Give 1 - 2 glasses of water and seek immediate medical attention. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting for medical personnel,

since some particles may be aspirated into the lungs.

Inhalation: Move to fresh air; if discomfort persists, get medical attention.

Skin: Wash with soap and water.

Eyes: Irrigate immediately with plenty of water. Obtain medical attention if necessary.

Section V - Fire Fighting Measures

Flash Point: N/A

Autoignition Temperature: N/A

Lower Explosive Limit: N/A

Upper Explosive Limit: N/A

Unusual Fire and Explosion Hazards: N/A

Extinguishing Media: N/A

Special Firefighting Procedures: Firefighters should wear NIOSH-approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

Section VI - Accidental Release Measures

Dike the spilled liquid, and either pump back into original container or cover with clay-type substance for absorption.

Section VII - Handling and Storage

Store at ambient temperature. Prevent possible eye and skin contact by wearing protective clothing and equipment.

Section VIII - Exposure Controls/Personal Protection

Respiratory Protection: Respirator approved by NOISH/ MSHA are adequate for contaminate concentrations encountered.

Ventilation: N/A

Protective Clothing: Gloves are recommended, rubber gloves are recommended when repeated or prolonged contact is likely.

Eye Protection: Safety glasses are recommended.

Other Protective Clothing or Equipment: N/A

Work/Hygienic Practices: Avoid contact with the eyes and skin.

Section IX - Physical and Chemical Properties

Physical State: Milky liquid

pH: 10-11

Melting Point/Range: N/A

Boiling Point/Range: 212°F, 100°C

Appearance/Color/Odor: White-off white, no odor

Solubility in Water: Nil

Vapor Pressure(mmHg): N/A

Specific Gravity(Water=1): 1.4-1.5

Molecular Weight: N/A

Vapor Density(Air=1): N/A

How to detect this compound : N/A

% of Solution:	48-51	51-55	61-65
% Volatiles:	49-52	45-49	35-39

Section X - Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur

Conditions to Avoid: N/A

Materials to Avoid: Acids and maleic anhydride. Magnesium hydroxide is soluble in aqueous acids generating heat.

Hazardous Decomposition Products: Heat and steam

N/A

Section XII - Ecological Information

N/A

Section XIII - Disposal Considerations

May be disposed of in a secured sanitary landfill. Disposal must be done in accordance with Local, State, and Federal regulations.

Section XIV - Transport Information**DOT Proper Shipping Name:** N/A**DOT Hazard Class/ I.D. No.:** N/A**Section XV - Regulatory Information****Reportable Quantity:** N/A**NFPA Rating:** Health - 1; Fire - 0; Reactivity - 0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Carcinogenicity Lists: No NTP: No IARC Monograph: No OSHA Regulated: No**Section XVI - Other Information****Synonyms/Common Names:** Brucite**Chemical Family/Type:** Magnesium Hydroxide

IMPORTANT! Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This MSDS has been prepared according to the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The MSDS information is based on sources believed to be reliable. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, **Hill Brothers Chemical Company** makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Also, additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks prior to use, and then to exercise appropriate precautions for protection of employees and others.

HOME PAGE



MATERIAL SAFETY DATA SHEET

Sodium Hydroxide Solution, 50%

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

HOUSTON OFFICE

700 Louisiana Street, Suite 4300
Houston, Texas 77002
U.S. • 1-800-423-4117

MONTREAL OFFICE

630 Blvd. René Lévesque West, Suite 3100
Montreal, Quebec H3B 1S6
Canada • (514) 397-6100

Product Name: Sodium Hydroxide Solution, 50%
CAS#: 1310-73-2
MSDS Code: NaOH(50)-E
Synonyms: Caustic soda liquid 50%, Soda lye, Lye, Liquid Caustic, Sodium Hydrate
Product Use: Neutralizing agent, industrial cleaner, pulping and bleaching, soap manufacturing

Major Update: 10/16/02
Minor Update: 01/15/03

Emergency Contacts (24 hr.)

△ FOR INFORMATION REGARDING ON SITE CHEMICAL EMERGENCIES INVOLVING A SPILL OR LEAK, CALL

U.S.: 1-800-424-9300 – CHEMTREC

Canada: 613-996-6666 – CANUTEC

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	% (w/w)	ACGIH	CAS NO.
Sodium Hydroxide	49 – 51	2 mg/m ³ (TLV-C)	1310-73-2

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Odorless, clear, non-volatile liquid. **EXTREMELY CORROSIVE!** Causes severe burns on contact. Can cause blindness, permanent scarring and death. Aerosols can cause lung injury – effects may be delayed. Highly reactive. Can react violently with water and numerous commonly encountered materials, generating enough heat to ignite nearby combustible materials. Contact with many organic and inorganic chemicals may cause fire or explosion. Reacts with some metals to liberate hydrogen gas, which can form explosive mixtures with air. Will not burn. Harmful to aquatic life. Read the entire MSDS for a more thorough evaluation of the hazards.

Potential Health Effects:

Inhalation: Sodium hydroxide does not readily form a vapor and inhalation exposure is likely to occur as an aerosol. Due to its corrosive nature, sodium hydroxide aerosols could cause pulmonary edema (severe, life-threatening lung injury). The development of pulmonary edema may be delayed up to 48 hours after exposure. The early symptoms of pulmonary edema include shortness of breath and tightness in the chest.

Skin Contact: EXTREMELY CORROSIVE! Sodium hydroxide is capable of causing severe burns with deep ulceration and permanent scarring. It can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration (solutions) and the duration of exposure. Burns may not be immediately painful; onset of pain may be delayed minutes to hours. Several human studies and case reports describe the corrosive effects of sodium hydroxide. A 4% solution of sodium hydroxide, applied to a volunteer's arm for 15 to 180 minutes, caused damage which progressed from destruction of cells of the hard outer layer of the skin within 15 minutes to total destruction of all layers of the skin in 60 minutes. Solutions as weak as 0.12% have damaged healthy skin within 1 hour.

Eye Contact: EXTREMELY CORROSIVE! The severity of injury increases with the concentration, the duration of exposure, and the speed of penetration into the eye. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring and clouding. Conditions, which affect vision such as glaucoma and cataracts, are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue which may lead to permanent blindness.

Ingestion: EXTREMELY CORROSIVE! Severe pain; burning of the mouth, throat and esophagus; vomiting; diarrhea; collapse and possible death may result.

Chronic Effects: SKIN: Repeated or prolonged skin contact would be expected to cause drying, cracking, and inflammation of the skin (dermatitis).

Existing Medical Conditions Possibly Aggravated by Exposure: Asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus or throat conditions. Skin irritation may be aggravated in individuals with existing skin disorders.

Carcinogenicity: Sodium hydroxide is not classified as a carcinogen by ACGIH (American Conference of Governmental Industrial Hygienists) or IARC (International Agency for Research on Cancer), not regulated as a carcinogen by OSHA (Occupational Safety and Health Administration), and not listed as a carcinogen by NTP (National Toxicology Program).

For more toxicological information, refer to Section 11.

SECTION 4 – FIRST AID MEASURES

General: If you feel unwell, IMMEDIATELY seek medical advice (show this document).

Inhalation: Move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. Give artificial respiration ONLY if breathing has stopped. Do not use mouth-to-mouth method if victim ingested or inhaled the substance: induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give Cardiopulmonary Resuscitation (CPR) only if there is no pulse AND no breathing. Obtain medical attention IMMEDIATELY. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.

Skin Contact: Immediately flush skin with lukewarm water for at least 20 minutes, and up to 60 minutes if necessary. Under lukewarm water remove contaminated clothing, jewelry, and shoes. If irritation persists, repeat flushing. Obtain medical attention immediately. Discard contaminated clothing and shoes in a manner which limits further exposure.

Eye Contact: Immediately flush eyes with lukewarm water for at least 20 minutes, and up to 60 minutes if necessary. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

Ingestion: DO NOT INDUCE VOMITING. If victim is alert and not convulsing, rinse mouth and give as much water as possible to dilute material (8 to 10 oz. or 240 to 300 mL). If spontaneous vomiting occurs, have victim lean forward with head down, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility.

SECTION 5 – FIRE FIGHTING MEASURES

Flammability	Not combustible (does not burn).
Flash Point (method)	Not applicable.
Flammable Limits (Upper)	Not applicable
Auto Ignition Temperature	Not applicable
Combustion and Thermal Decomposition Products	Sodium oxide fumes
Rate of Burning	Not applicable
Explosive Power	Not applicable
Sensitivity to Mechanical Impact	Not sensitive ; stable material
Sensitivity to Static Charge	Not applicable

Fire and Explosion Hazards: Sodium hydroxide will not burn or support combustion. The reaction of sodium hydroxide with water and a number of commonly encountered materials (see Section 10) can generate sufficient heat to ignite nearby combustible materials. Sodium hydroxide can react with metals, such as aluminum, tin and zinc, to form flammable hydrogen gas.

Extinguishing Media: Use extinguishing media suitable for the surrounding fire. If water is used, care should be taken, since it can generate heat and cause spattering if applied directly to sodium hydroxide.

Special Information: Evacuate area and fight fire from a safe distance or a protected location. Approach fire from upwind. If possible, isolate materials not involved in the fire and protect personnel. Move containers from fire area if it can be done without risk.

Water can be used with extreme caution to extinguish a fire in an area where sodium hydroxide is stored. The water must not come into contact with the sodium hydroxide. Water can be used in flooding quantities as a spray or fog to keep fire-exposed containers cool and absorb heat. At high temperatures, fuming may occur, giving off a strong, corrosive gas. Do not enter without wearing specialized protective equipment suitable for the situation.

Evacuation: If tank or tank truck involved in a fire, ISOLATE and consider evacuation of one-half (1/2) mile (800 meters) in all directions.

Fire Fighting Protective Equipment: Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. Chemical resistant clothing (e.g. chemical splash suit) and positive pressure self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) may be necessary.

NOTE: Also see "Section 10 - Stability and Reactivity"

SECTION 6 – ACCIDENTAL RELEASE MEASURES**Spills, Leaks, or Releases:**

- Restrict access to area until completion of clean up. Ensure trained personnel conduct clean up. Ventilate area.
- Wear adequate personal protective equipment (See Section 8). Do not touch spilled material.
- Prevent entry into sewers or waterways.
- Land spill of sodium hydroxide: Solutions should be contained by diking with inert material, such as sand or earth. Solutions can be recovered or carefully diluted with water and cautiously neutralized with acids such as acetic acid or hydrochloric acid.
- Water spill: Neutralize with dilute acid.
- Comply with Federal, Provincial/State and local regulations on reporting releases.

Deactivating Chemicals: Weak acid solutions (acetic, hydrochloric or sulfuric acid).

Waste Disposal Methods: Dispose of waste material at an approved waste treatment/disposal facility, in accordance with applicable regulations. Do not dispose of waste with normal garbage or to sewer systems.

- Note
- Clean-up material may be a RCRA Hazardous Waste on disposal.
 - Spills are subject to CERCLA reporting requirements: RQ = 1000 lbs. (454 kg).

SECTION 7 – HANDLING AND STORAGE

Precautions: EXTREMELY CORROSIVE! Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Wear appropriate Personal Protection Equipment (Refer to Section 8). People working with this chemical should be properly trained regarding its hazards and its safe use.

Handling Procedures and Equipment: Use smallest possible amounts in designated areas with adequate ventilation. Keep containers closed when not in use. Empty containers may contain hazardous residues. Avoid generating mists. Transfer solutions using equipment, which is corrosion-resistant. Cautiously, transfer into sturdy containers made of compatible materials. Never return contaminated material to its original container. Considerable heat is generated when diluted with water. Proper handling procedures must be followed to prevent vigorous boiling, splattering or violent eruption of the diluted solution. Never add water to a sodium hydroxide solution. **ALWAYS ADD SODIUM HYDROXIDE TO WATER** and provide agitation. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation.

Storage Requirements: Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use and when empty. Protect from damage. Store away from incompatible materials such as strong acids, nitroaromatic, nitroparaffinic or organohalogen compounds. See Section 10 for Incompatibles. Use corrosion-resistant structural materials and lighting and ventilation systems in the storage area. Containers made of nickel alloys are preferred. Steel containers are acceptable if temperatures are not elevated. Nickel is the preferred metal for handling this product. Plastics or plastic-lined steel, or FRP tanks of derakane vinyl ester resin may be suitable. Container contents may develop pressure after prolonged storage. Drums may need to be vented. Trained personnel should only perform venting.

Storage Temperature: Avoid freezing. Do not expose sealed containers to temperatures above 40°C (104°F).

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

PREVENTIVE MEASURES

Recommendations listed in this section indicate the type of equipment which will provide protection against over exposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering Controls: Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact.

PERSONAL PROTECTIVE EQUIPMENT

Maintain eye wash fountain and quick-drench facilities in work area. Detailed requirements for personal protective equipment should be established on a site-specific basis.

Eye Protection: Wear full face-shield and chemical safety goggles when there is potential for contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact.

Guidelines for sodium hydroxide solutions, 30-70%:

RECOMMENDED (resistance to breakthrough longer than 8 hours): Butyl rubber; natural rubber, neoprene, nitrile rubber, polyethylene, polyvinyl chloride, Teflon(TM), Viton(TM), Saranex(TM), 4H(TM), Barricade(TM), CPF 3(TM), Responder(TM), Trelchem HPS(TM), Tychem 10000(TM).

NOT RECOMMENDED for use (resistance to breakthrough less than 1 hour): Polyvinyl alcohol.

Respiratory Protection:

Up To 10 mg/m³: Supplied Air Respirator (SAR) operated in a continuous-flow mode, eye protection needed; or full-facepiece respirator with high-efficiency particulate filter(s); or powered air-purifying respirator with dust and mist filter(s), eye protection needed; or full-facepiece Self-Contained Breathing Apparatus (SCBA); or full-facepiece SAR.

Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions: Positive pressure, full-facepiece SAR; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SAR.

ESCAPE: Full-facepiece respirator with high-efficiency particulate filter(s); or escape-type SCBA.

EXPOSURE GUIDELINES

PRODUCT: Sodium hydroxide:

ACGIH Ceiling Exposure Limit (TLV-C)

2 mg/m³

OSHA PEL

2 mg/m³

NIOSH IDLH

10 mg/m³

Δ NIOSH REL:

2 mg/m³/15 M

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name(s)	Caustic soda liquid 50%, Soda lye, Lye, Liquid Caustic, Sodium Hydrate
Chemical Name	Sodium hydroxide
Chemical Family	Alkali hydroxide
Molecular Formula	NaOH
Molecular Weight	40.01
Appearance	Clear-to-slightly turbid liquid
Odor	Odorless
PH	14.0 (Aqueous solution: 5%)
Vapor Pressure	0.2 kPa (1.5 mm Hg) at 20 °C(68°F) (50% solution)
Vapor Density (Air = 1)	Not applicable
Boiling Point	140 °C (284 °F) (50% solution)
Freezing Point	12 °C (53.6 °F) (50% solution)
Solubility (Water)	Soluble in all proportions
Specific Gravity	1.53 (50% solution) 15.5 °C (60°F)
Evaporation Rate	Not applicable
Viscosity (cp):	78.3 at 20 °C(68°F)
Bulk Density (lbs/cu ft):	95.5
• Coefficient of Oil/Water Distribution	Essentially zero

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable at room temperature.

Hazardous Decomposition Products: Thermal decomposition: sodium oxide fumes

Conditions to Avoid: Water. Keep away from incompatibles.

Incompatibility with other Substances: Sodium hydroxide reacts vigorously, violently or explosively with many organic and inorganic chemicals, such as strong acids, nitroaromatic, nitroparaffin and organohalogen compounds, glycols and organic peroxides. Reacts violently with water generating significant heat and dangerously spattering corrosive sodium hydroxide. Violently polymerizes acetaldehyde, acrolein or acrylonitrile. Produces flammable and explosive hydrogen gas if it reacts with sodium tetrahydroborate or certain metals such as aluminum, tin, or zinc. Can form spontaneously flammable chemicals upon contact with 1,2- dichloroethylene, trichloroethylene or tetrachloroethane. Can produce carbon monoxide upon contact with solutions of sugars, such as fructose, lactose and maltose.

Corrosivity to Metals: Corrosive to aluminum, tin, zinc, copper, and most alloys in which they are present including brass and bronze. Corrosive to steel at elevated temperatures above 40°C(104°F).

Stability and Reactivity Comments: Slowly attacks glass at room temperature.

Hazardous Polymerization: Will not occur. However, it can induce hazardous polymerization of acetaldehyde, acrolein, and acrylonitrile.

SECTION 11 – TOXICOLOGICAL INFORMATION

For more toxicological information, refer to Section 3.

TOXICOLOGICAL DATA:

Toxicological Data: Sodium hydroxide

△ **Toxicity data:** LDLo - Lowest published lethal dose oral rabbit 500 mg /kg ; LD₅₀intrapertoneal mouse 40 mg/kg

Irritation data: Standard Draize Tests: 500 mg/24 hour(s) skin-rabbit severe; 400 µg eyes-rabbit mild; 1 percent eyes-rabbit severe;

Mutagenicity: There is no evidence of mutagenic potential.

Reproductive Effects: No information is available.

Teratogenicity and Fetotoxicity: No information is available.

Synergistic Materials: No information is available.

△ **Skin and Respiratory Sensitization :** No information is available.

△ **Irritancy:** Strong eye and skin irritant.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicological Information: LC₁₀₀ Cyprinus Carpio 180 ppm/24 hr @ 25°C (77°F)
TLm mosquito fish 125 ppm/96 hr (fresh water); TLm Bluegill 99 mg/L/48 hr (tap water)

Persistence and Degradation: Degrades readily by reacting with natural carbon dioxide in the air. Does not bioaccumulate.

SECTION 13 – DISPOSAL CONSIDERATIONS

Review federal, state and local government requirements prior to disposal.

Do not dispose of waste with normal garbage, or to sewer systems.

Whatever cannot be saved for recovery or recycling, including containers, should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options.

RCRA: Test waste material for corrosivity, D002, prior to disposal.

SECTION 14 – TRANSPORT INFORMATION

	TDG	DOT
Shipping Name	SODIUM HYDROXIDE, SOLUTION	Sodium hydroxide, solution
Hazard Class/Division	8	8
Identification No.	UN1824	UN1824
Packing Group:	II	II
Reportable Quantity	Not Applicable	RQ: 1000 lbs. (454 kg)
ERAP	NONE	Not Applicable

- △ **IATA/ICAO Shipping Description :** Sodium hydroxide solution, Class 8, UN1824, PG II is accepted for air transport.
- △ **For Chemical Emergencies In Transportation Requiring Activation Of Pioneer 24 Hour Emergency Response Plan Call:**
- | | |
|---------------|----------------------------------|
| U.S. | 1-800-424-9300 – Chemtrec |
| Canada | 1-819-294-6633 |

SECTION 15 – REGULATORY INFORMATION**USA Classification**

OSHA Classification: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

SARA Regulations sections 313 and 40 CFR 372: N

SARA Hazard Categories, SARA SECTIONS 311/312 (40CFR370.2):

ACUTE: Y

CHRONIC: N

FIRE: N

REACTIVE: Y

SUDDEN RELEASE: N

OSHA PROCESS SAFETY (29CFR1910.119): N

CERCLA SECTION 103 (40CFR302.4): Y

Reportable Quantity (RQ) under CERCLA: 1000 lbs. (454 kg)

TSCA Inventory Status: Y

- △ This product does not contain nor is it manufactured with ozone depleting substances.

Canadian Classification

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

Controlled Products Regulations (WHMIS) Classification: E: Corrosive Material

CEPA / Canadian Domestic Substances List (DSL): Y

WHMIS Ingredient Disclosure List: Meets criteria for disclosure at 1% or greater.

EINECS Number: 215-185-5

SECTION 16 – OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and PIONEER will not be liable for any damages, losses, injuries or consequential damages that may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years.

National Fire Protection Association (NFPA) Rating
Hazardous Materials Identification System (HMIS) Rating

	NFPA	HMIS
HEALTH	3	3
FIRE	0	0
REACTIVITY	1	1

4 = Extreme/Severe
 3 = High/Serious
 2 = Moderate
 1 = Slight
 0 = Minimum
 W = Water Reactive

REFERENCES:

1. Chemlist, STN Database, Chemical Abstract Service, 1999
2. "CHEMINFO", through "CCINFOdisc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada, (2002).
3. DOSE, Royal Society of Chemistry, Aug 27, 1999.
4. HSDB- Hazardous Substances Data Bank, CCOHS, 2002.
5. RTECS-Registry of Toxic Effects of Chemical Substances, On-line search, Canadian Centre for Occupational Health and Safety RTECS database, Doris V. Sweet, Ed., National Institute for Occupational Safety and Health, U.S. Dept. of Health and Human Services, Cincinnati, Entry Update/May 2002.
6. "2002 Threshold Limit Values and Biological Exposure Indices", American Conference of Government Industrial Hygienists, 2002.
7. Merck, 11th Edition, 1989

LEGEND:

ACGIH -American Conference of Governmental Industrial Hygienists

ANSI - American National Standards Institute

C - Ceiling (limit value)

CAS # -Chemical Abstracts Service Registry Number

CERCLA-Comprehensive Environmental Response, Compensation, and Liability Act

CFR -Code of Federal Regulations
DOT -Department of Transportation
ERAP -Emergency Response Assistance Plan
FRP -Fiberglass Reinforced Plastic
IDLH -Immediately Dangerous to Life and Health
LC₅₀ -The concentration of material in air expected to kill 50% of a group of test animals
LD₅₀ -Lethal Dose expected to kill 50% of a group of test animals
NIOSH - National Institute for Occupational Safety and Health
OSHA - Occupational Safety and Health Association
PEL - Permissible Exposure Limit
RCRA - Resource Conservation and Recovery Act
RQ - Reportable Quantity
SAR - Supplied Air Respirator
STEL - Short Term Exposure Limit
TDG -Transportation of Dangerous Goods Act/Regulations
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time-Weighted Average
WHMIS -Workplace Hazardous Material Information System

Prepared by: PIONEER
(514) 397-6100

Appendix F
Draft PEIR Mailing List

NOA	Print copy	CityTitle(Source)	Name(Source)	Title(Source)	Address(Source)	City(Source)	State(Source)	Zip_code(Source)
1	1	City of Anaheim Central Library			500 Broadway	Anaheim,	CA	92805
1	1	Buena Park Library			7150 La Palma Avenue	Buena Park,	CA	90620
1	1	Costa Mesa Library			1855 Park Avenue	Costa Mesa,	CA	92627
1	1	Cypress Library			5331 Orange Avenue	Cypress,	CA	90630
1	1	Fountain Valley Library			17635 Los Alamos	Fountain Valley,	CA	92708
1	1	Fullerton Public Library			353 W. Commonwealth Ave.	Fullerton,	CA	92832
1	1	Chapman Library			9182 Chapman Ave.	Garden Grove,	CA	92841
1	1	Huntington Beach Central Library			7111 Talbert Avenue	Huntington Beach,	CA	92648
1	1	University Park Library			4512 Sandburg Way	Irvine,	CA	92612
1	1	La Palma Branch Library			7842 Walker Street	La Palma,	CA	90623
1	1	Los Alamitos/Rossmoor Library			12700 Montecito	Seal Beach,	CA	90740
1	1	Westminster Library			8180 13th St.	Westminster,	CA	92683
1	1	City of Newport Beach Public Library			1000 Avocado Ave.	Newport Beach,	CA	92660
1	1	Taft Branch Library			740 N. Taft Ave	Orange,	CA	92865
1	1	Santa Ana Public Library			26 Civic Center Plaza	Santa Ana,	CA	92701
1	1	Mary Wilson Library			707 Electric Avenue	Seal Beach,	CA	90740
1	1	Stanton Library			7850 Katella Avenue	Stanton,	CA	90680
1	1	Brea Library			One Civic Center Circle	Brea,	CA	92821
1	1	La Habra Library			221 East La Habra Blvd.	La Habra,	CA	90631
1	1	Villa Park Library			17865 Santiago Blvd.	Villa Park,	CA	92861
1	1	Placentia Library			411 E. Chapman Avenue	Placentia,	CA	92870
1	1	Yorba Linda Public Library			18181 Imperial Highway	Yorba Linda,	CA	92886
1	1	Tustin Library			345 E. Main Street	Tustin,	CA	92780
23	23							

NOA	CD	Print copy	City/Title(Source)	Name(Source)	Title(Source)	Address(Source)	City(Source)	State(Source)	Zip_code(So
1	1		City of Anaheim	Gary E. Johnson	Public Works Director	200 South Anaheim Blvd.	Anaheim,	CA	92805
1		1	City of Anaheim	Jonathan E. Borrigo	Principal Planner	200 South Anaheim Blvd.	Anaheim,	CA	92805
1	1		City of Brea	Charlie View	Director Development Services	1 Civic Center Circle	Brea,	CA	92821-5732
1	1		City of Buena Park	James Biery	Public Works Director	P O Box 5009	Buena Park,	CA	90622-5009
1	1		City of Buena Park	Rick Warsinski	Community Development Director	P O Box 5009	Buena Park,	CA	90622-5009
1	1		City of Costa Mesa	Allan Roeder	City Manager	P O Box 1200	Costa Mesa,	CA	92628-1200
1	1		City of Costa Mesa	Donald Lamm	Development Services Director	P O Box 1200	Costa Mesa,	CA	92628-1200
1		1	Costa Mesa Sanitary District	Robin Hamers	Manager/District Engineer	628 W. 19th Street	Costa Mesa,	CA	92627
1	1		City of Cypress	Doug Dancs	Public Works Director	P O Box 609	Cypress,	CA	90630
1	1		City of Cypress	David Belmar	Community Development Director	P O Box 609	Cypress,	CA	90630
1		1	City of Fountain Valley	Bill Ault	Public Works Director	10200 Slater Avenue	Fountain Valley,	CA	92708
1	1		City of Fountain Valley	Andy Perea	Planning Director	10200 Slater Avenue	Fountain Valley,	CA	92708
1	1		City of Fullerton	Don Hoppe	Director of Engineering	303 W. Commonwealth	Fullerton,	CA	92832
1		1	City of Fullerton	Joel W. Rosen	Acting Director Community Development	303 W. Commonwealth	Fullerton,	CA	92832
1	1		City of Garden Grove	Keith Jones	Public Works Director	P O Box 3070	Garden Grove,	CA	92842
1	1		City of Garden Grove	Susan Emery	Community Development Director	P O Box 3070	Garden Grove,	CA	92842
1	1		Garden Grove Sanitary District	Matt Fertal	General Manager	P O Box 3070	Garden Grove,	CA	92842
1	1		City of Huntington Beach	Robert Beardsley	Public Works Director	P O Box 190	Huntington Beach,	CA	92648
1	1		City of Huntington Beach	Howard Zelefski	Planning Director	P O Box 190	Huntington Beach,	CA	92648
1		1	City of Irvine	Marty Bryant	Public Works Director	P.O. Box 19575	Irvine,	CA	92623-9575
1	1		City of Irvine	Tina Christiansen	Community Development Director	P.O. Box 19575	Irvine,	CA	92623-9575
1	1		Irvine Ranch Water District	Paul D. Jones	General Manager	P O Box 57000	Irvine,	CA	92619-7000
1	1		City of La Habra	Roy Ramsland	Planning Manager	201 E. La Habra Blvd.	La Habra,	CA	90633-0337
1	1		City of La Habra	Jeff Sinn	Deputy Director of Public Works/City Engineer	201 E. La Habra Blvd.	La Habra,	CA	90633-0337
1	1		City of La Palma	Ismile Noorbaksh	Public Works Director	7822 Walker Street	La Palma,	CA	90623
1	1		City of La Palma	Dominic Lazzaretto	Community Development Director	7822 Walker Street	La Palma,	CA	90623
1	1		City of Los Alamitos	Lawrence Jackson	Public Works Director	3191 Katella Avenue	Los Alamitos,	CA	90720-5600
1	1		Rossmoor/Los Alamitos Area Sewer Dist.	Susan E. Bell	General Manager	P.O. Box 542	Los Alamitos,	CA	90720
1	1		Midway City Sanitary District	Steve Anderson	General Manager	14451 Cedarwood Avenue	Westminster,	CA	92683
1	1		City of Newport Beach	Steve Badum	Public Works Director	P O Box 1768	Newport Beach,	CA	92658-8915
1	1		City of Newport Beach	Mike Sinacori	Deputy Director Utilities Department	P O Box 1768	Newport Beach,	CA	92658-8915
1	1		City of Newport Beach	Patricia Temple	Planning Director	P O Box 1768	Newport Beach,	CA	92658-8915
1	1		City of Orange	Gail Faber	Public Works Director	300 E. Chapman Ave	Orange,	CA	92866-1591
1		1	City of Orange	Alice Angus	Community Development Director	300 E. Chapman Ave	Orange,	CA	92866-1591
1	1		City of Placentia	Andy Muth	City Engineer	401 E. Chapman Ave	Placentia,	CA	92870
1	1		City of Placentia	Ray Pascua	Planning Director	401 E. Chapman Ave	Placentia,	CA	92870
1	1		City of Santa Ana	James Ross	Public Works Director	P.O. Box 1988	Santa Ana,	CA	92701
1	1		City of Santa Ana	Pat Whitaker	Community Development Director	P.O. Box 1988	Santa Ana,	CA	92701
1	1		City of Seal Beach	Mark Vukojevic, P.E.	Public Works Director	211 8th Street	Seal Beach,	CA	90740-6379
1		1	City of Seal Beach	Lee Whittenberg	Development Services Director	211 8th Street	Seal Beach,	CA	90740-6379
1	1		City of Stanton	Robert H. Doss	City Engineer	7800 Katella Avenue	Stanton,	CA	90680
1	1		City of Stanton	Steve Harris	Community Development Director	7800 Katella Avenue	Stanton,	CA	90680
1		1	City of Tustin	Tim Serlet	City Engineer	300 Centennial Way	Tustin,	CA	92780
1		1	City of Tustin	Elizabeth Binsack	Community Development Director	300 Centennial Way	Tustin,	CA	92780
1		1	Tustin Unified School District		Superintendent	300 South C Street	Tustin,	CA	92780-3695
1	1		City of Villa Park	Ken Domer	City Manager	17855 Santiago Boulevard	Villa Park,	CA	92861
1	1		City of Villa Park	Warren Repke	City Engineer	17855 Santiago Boulevard	Villa Park,	CA	92861
1	1		City of Westminster	Marwan Yonssef	Public Works Director	8200 Westminster Boulevard	Westminster,	CA	92863
1	1		City of Westminster	Donald S. Anderson	Community Development Director	8200 Westminster Boulevard	Westminster,	CA	92863
1	1		City of Yorba Linda	Mark L. Stowell	Public Works Director/City Engineer	P.O. Box 87014	Yorba Linda,	CA	92885
1	1		City of Yorba Linda	Kurt Christiansen	Community Development Director	P.O. Box 87014	Yorba Linda,	CA	92885
1		1	County of Orange		Resources & Dev. Management Dept.	P.O. Box 4048	Santa Ana,	CA	92702-4048
1	1		Orange County Health Care Agency	Larry Honeybourne	Environmental Health Dept.	2009 E. Edinger	Santa Ana,	CA	92705
1		1	U.S. Army Corps of Engineers	Dan Swenson	Project Manager	P.O. Box 532711	Los Angeles,	CA	90053-2325
23		23	Libraries (see next page for addresses)						
		1	Woodruff, Spradlin & Smart	Jason Retterer		701 S. Parker Street, Suite 8000	Orange	CA	92868-4760
		15	State Clearinghouse						
		1	OCSD	John Linder					
		1	OCSD	Jim Burror					
		1	OCSD	Ann Tobin					
		1	OCSD	Jennifer Cabral					
		2	Engineering Library	Yolanda Herrera					
		15	OCSD	Extras for counter, meeting					
		2	CH2MHill	Matt Gordon					
77	42	74	Totals						