

CITY OF SEAL BEACH
SEWER SYSTEM MANAGEMENT PLAN
2018



Submitted to
City of Seal Beach
211 Eighth Street, Seal Beach, California 90740

Submitted by
AKM Consulting Engineers
553 Wald, Irvine, California 92618
(949) 753-7333

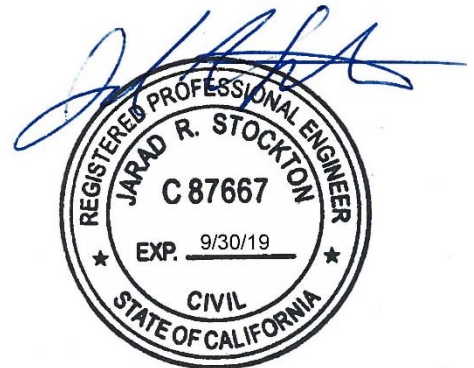
FEBRUARY 2018



Date of Signing 2/20/18



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SEWER SYSTEM MANAGEMENT PLAN**

Certification

I certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael Ho, P.E.
Deputy Director of Public Works

Date

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SECTION 1 GOALS

Order No. 2006-0003 states that:

“The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.”

The purpose of Order No. 2006-2003 is to prevent sanitary sewer overflows (SSOs). The City has prepared its SSMP to comply with this order.

The SSMP document will help to ensure that the City properly funds, manages, operates and maintains, with adequately trained staff and/or contractors possessing adequate knowledge skills and abilities as demonstrated through validated program at all times, all parts of the sanitary sewer system owned and/or operated by the City.

1-1 COMPLIANCE

The goals of the SSMP are to:

1. Prevent or reduce Sanitary Sewer Overflow (SSOs) by:
 - a. Providing adequate capacity in its system in accordance with its criteria
 - b. Cost effectively minimizing the sources of inflow and infiltration
 - c. Implementing its fats, oils, and grease (FOG) control program to minimize the entry of these substances into its collection system
 - d. Providing adequate sewer cleaning and maintenance
 - e. Inspecting its system, assessing its condition, and replacing and/or rehabilitating it as detailed and scheduled in its Sewer System Rehabilitation Plan
 - f. Establishing and implementing an operation and maintenance program with adequately trained staff to not only prevent SSOs, but also to extend the useful life of its system
 - g. Establishing proper legal authority for implementing the above and all elements of the SSMP
 - h. Maintain adequate funding for the operation, maintenance, and repair of its system
2. Minimize the impact of SSOs that do occur by preparing a proper Overflow Emergency Response Plan, training its staff in its implementation, implementing the plan when needed, and updating it based on information developed from events that do occur.
3. Provide a plan and schedule to continue implementing measures to prevent or reduce SSOs
4. Implement sewer improvement projects as indicated in the City’s Capital Improvement Program

5. Provide detailed plan to address SSOs. This shall include the procedures to respond to the SSO, notify the appropriate individuals/parties, contain the SSO, clean up the affected areas, and properly report the SSO. The time to respond to the spill shall not exceed one hour.
6. Provide routine training for safety, updated equipment and technology, spill response, and all other relevant operation and maintenance topics

SECTION 2 ORGANIZATION

2-1 WASTE DISCHARGE REQUIREMENTS

Order No. 2006-0003 requires that the SSMP identify:

- (a) *The name of the responsible or authorized representative as described in Section J of this Order,*
- (b) *The names and telephone numbers of management, administrative and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and*
- (c) *The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board, and other agencies as applicable (such as County Health Officer, County Environmental Health Agency, and/or State Office of Emergency Services (OES)).*

2-2 COMPLIANCE

A. LEGALLY RESPONSIBLE OFFICIAL

Order No. 2006-0003 requires that the SSMP identify, *“The name of the responsible or authorized representative as described in Section J of this Order.”*

The City identifies Michael Ho, the Deputy Director of Public Works and City Engineer, as the responsible representative, who shall sign and certify all reports required by Order No. 2006-0003.

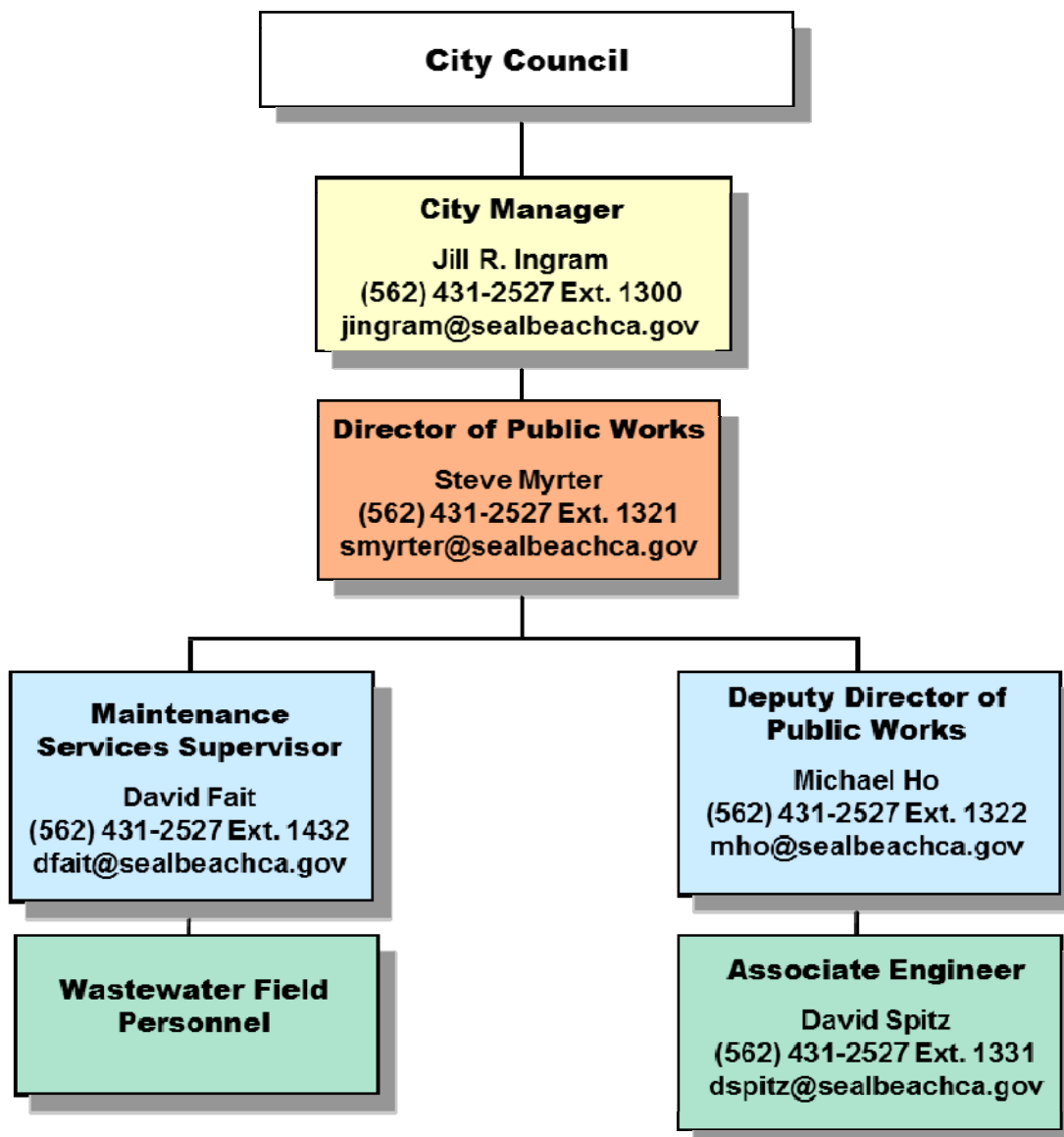
B. ORGANIZATION CHART

Order No. 2006-0003 requires that the SSMP identify, *“The names and telephone numbers of management, administrative and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation.”*

Figure 2-1 illustrates the line of authority for the City officials and staff responsible for implementing the SSMP measures. The current contact information for the responsible officials and staff are included.

Specific Responsibilities for officials and staff are described for each position is summarized in Table 2-1.

Figure 2-1
City Organizational Chart



**Table 2-1
SSMP Responsibilities**

Task	City Council	City Manager	Director of Public Works	Associate Engineer	Maintenance Services Supervisor	Field Crews
SSMP Development Plan and Schedule	Review, Approve					
Legal Authority	Review, Approve	Oversees				
Fats, Oils, and Grease Program	Review, Approve		Oversees	Participates		
Final SSMP Document	Review, Approve		Oversees	Participates	Participates	
Sewer Enterprise Funding Plan	Review, Approve		Oversees	Participates	Participates	
Goals of SSMP			Oversees	Participates	Participates	
Organization of SSMP			Oversees	Participates	Participates	
Up to Date Map of Collection System, Pumping Facilities, and Stormwater Conveyances			Oversees	Participates	Participates	
System Evaluation and Capacity Assurance Plan			Oversees	Participates		
Sewer System Rehabilitation Plan			Oversees	Participates	Participates	
FOG Outreach			Oversees	Participates		
Plan for FOG Disposal			Oversees	Participates	Participates	
FOG Source Control Measures			Oversees		Participates	
Design and Construction Standards			Oversees	Participates		
Procedures and Standards for Inspection and Testing			Oversees	Participates	Participates	
SSMP Monitoring			Oversees	Participates	Participates	
SSMP Internal Audits			Oversees	Participates	Participates	
SSMP Communication Program			Oversees	Participates		
Overflow Response Plan					Oversees	
Preventative Maintenance Plan					Oversees	Implements
CCTV Inspection and Condition Assesment					Oversees	Implements
SSO Trend Maintenance					Oversees	Implements
Staff Training Program					Oversees	Implements
Equipment Inventory					Oversees	Implements
Sanitary Sewer Overflows					Reports	Responds

Roles and responsibilities for City personnel are described in more detail as follows as follows:

City of Seal Beach City Council reviews and adopts

- Legal Authority
- Overflow Emergency Response Plan
- Preventative Maintenance Plan
- Fats, Oils, and Grease Program
- System Evaluation and Capacity Assurance Plan
- Sewer System Rehabilitation Plan
- Sewer Enterprise Funding Plan
- Final Sewer System Management Plan

City Manager

- Establishes policy
- Allocates resources
- Delegates responsibility

Director of Public Works

- Oversees the preparation and implementation of the Fats, Oils, and Grease Program
- Participates in the preparation of a regional plan for alternative methods of fat and grease disposal
- Oversees preparation of the Sewer System Management Plan
- Oversees in the preparation of the Sewer Enterprise Funding Plan
- Oversees the preparation and maintenance of an up to date map of the collection system, including the stormwater conveyance facilities
- Oversees the preparation of System Evaluation and Capacity Assurance Plan
- Oversees the system capacity evaluation, including urban runoff diversion to the sewer system during dry weather periods and control of infiltration and intrusion during both wet weather events and dry weather periods
- Oversees the preparation of Sewer System Rehabilitation Plan
- Oversees the preparation of design and construction standards and specifications for the installation of new sewers, pump stations, and other appurtenances, and for rehabilitation and repair of existing system
- Oversees the development of procedures and standards for inspection and testing the installation of new sewers, pump stations, and appurtenances, and for rehabilitation and repair of existing sewers
- Provides adequate operation and maintenance of facilities and equipment through Maintenance Services Manager

- Maintains related information to establish and prioritize appropriate SSMP activities
- Oversees the preparation of plans, specifications and estimates for the capital improvement projects, including rehabilitation and repair projects
- Oversees the development of a plan for responding to SSO's from private property that discharge to public right of ways and storm drains, to prevent discharges from SSOs to surface waters and storm drains
- Reviews the Sanitary Sewer Overflow Report Form completed at the conclusion of a response to an SSO.

Associate Engineer

- Reviews the Sanitary Sewer Overflow Report Form completed at the conclusion of a response to an SSO, and submits the report to the Regional Board, Orange County Health Care Agency, and to the State of California Office of Emergency Services and Orange County Resources Development and Management Department if necessary
- Establishes an implementation plan and schedule for a public education outreach program that promotes proper disposal of oils, grease and fats
- Directs the work of the construction management and inspection staff
- Participates in the development of
 - ✓ Fats, Oils, and Grease Program
 - ✓ Sewer System Management Plan
 - ✓ Sewer Enterprise Funding Plan
 - ✓ System Evaluation and Capacity Assurance Plan
 - ✓ Sewer System Rehabilitation Plan
 - ✓ Design and construction standards and specifications
 - ✓ Procedures and standards for inspection and testing
 - ✓ Sewer System Overflow Response Plan
 - ✓ Preventative Maintenance Plan

Maintenance Services Supervisor

- Oversees routine preventive operation and maintenance work by staff and contractors
- Schedules regular maintenance, system cleaning, inspection, and hot spot cleaning activities
- Provides and arranges training for staff on a regular basis in collection system operations, maintenance, and monitoring
- Determines that Contractor's staff is adequately trained
- Provides equipment and replacement parts inventories
- Identifies critical replacement parts

- Investigates SSO's and reviews the reports prior to review by the Director of Public Works/Deputy Director of Public Works
- Oversees the
 - ✓ Overflow Response Plan
 - ✓ Preventative Maintenance Plan
- Participates in the development of
 - ✓ CCTV Inspection and Condition Assessment & Sewer System Rehabilitation Plan
 - ✓ Sewer System Management Plan
 - ✓ Sewer Enterprise Funding Plan
 - ✓ System Evaluation and Capacity Assurance Plan
 - ✓ Sewer System Overflow Response Plan
 - ✓ Design and construction standards and specifications
 - ✓ Procedures and standards for inspection and testing

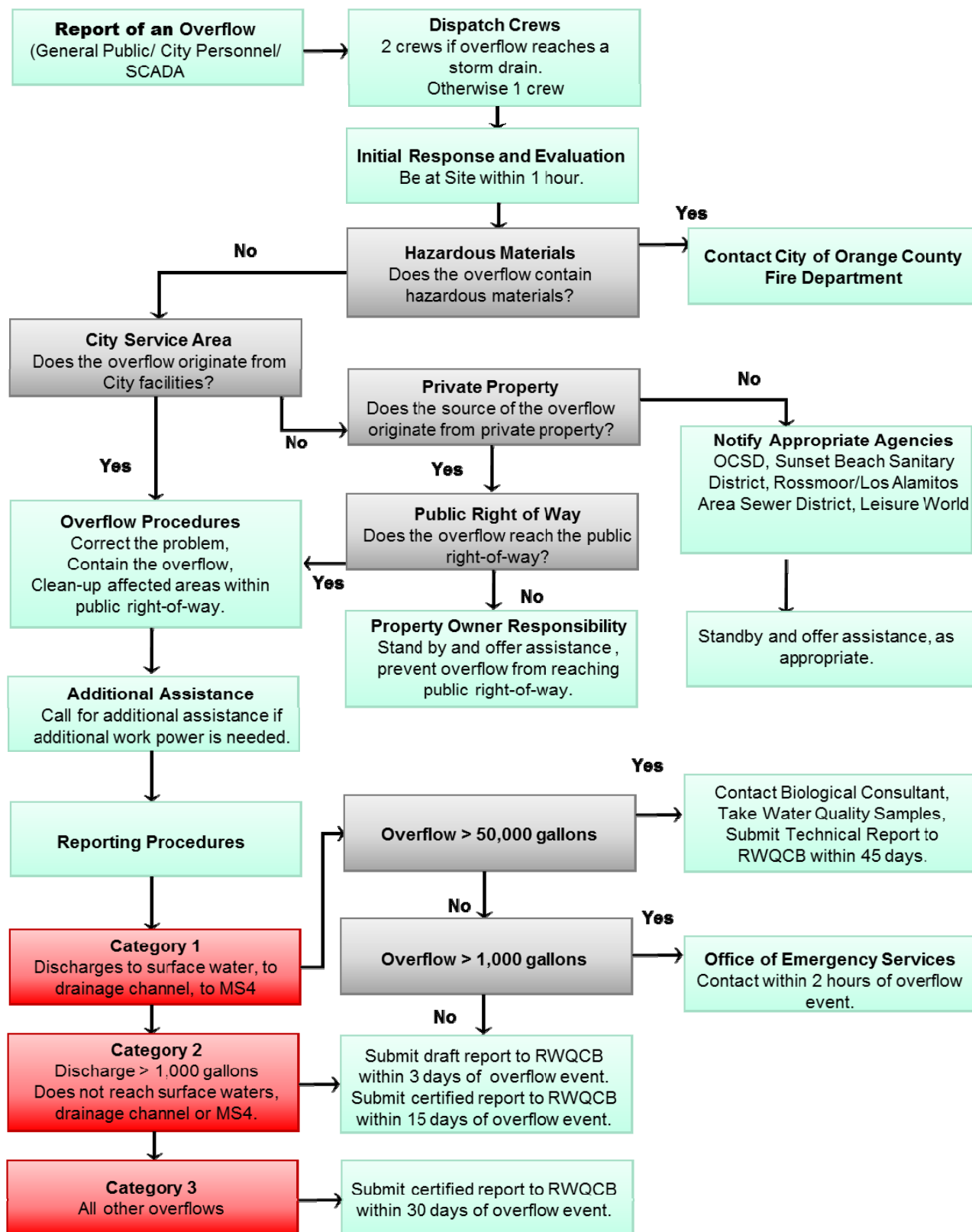
C. CHAIN OF COMMUNICATION FOR SSOS

Order No. 2006-0003 requires that the SSMP identify, *"The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Board, and other agencies as applicable (such as County Health Officer, County Environmental Health Agency, and/or State Office of Emergency Services (OES))."*

The City has prepared a stand-alone document for the Sanitary Sewer Overflow Emergency Response Plan (SSOERP) element of the SSMP requirements. It includes a list of individuals and agencies that need to be contacted in the event of a sanitary sewer overflow (SSO). Figure 2-2 details the procedures to respond to SSOs. The Maintenance Services Supervisor will be the responsible staff to report the SSO to the State Water Board and other appropriate agencies.

A summary of SSO notification and reporting procedures are included in Appendix B-1 of this report.

**Figure 2-2
SSOERP Response Procedures**



SECTION 3 LEGAL AUTHORITY

Order No. 2006-0003 requires that:

Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

- (a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc);*
- (b) Require that sewers and connections be properly designed and constructed;*
- (c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;*
- (d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and*
- (e) Enforce any violation of its sewer ordinances.*

Order No. 2006-0003 prohibits any SSO that results in a discharge of untreated or partially treated wastewater to the waters of the United States or that creates a nuisance as defined in California Water Code Section 13050(m).

Legal Authority is a very important component of a sewage collection agency's responsibility in regulating the usage of the sanitary sewer system.

3-1 COMPLIANCE

The City possesses legal authority through the following documents:

- Seal Beach Municipal Code (Appendix C-1)
 - Section 1.15: Enforcement
 - Section 9.25: Fats, Oil, and Grease Management and Discharge Control
 - Section 9.30: Sewerage
 - Section 10.15: Design and Improvement Requirements
- Design Criteria for Sewer Facilities (Appendix E-1)
- Sewer Standard Control Plans (Appendix E-2)
- Standard Specifications for Public Works Construction (Greenbook)

These documents are located in the Appendix of this report, and are available at City Hall. These documents can also be found electronically on the City of Seal Beach's website:

<http://www.sealbeachca.gov/>

Table 3-1 summarizes the City's relevant ordinance sections that correlate to the requirements.

**Table 3-1
City Ordinances**

Waste Discharge Requirement		City of Seal Beach Legal Authority Documents
a)	Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc)	Municipal Code, Section 9.25.020
		Municipal Code, Section 9.25.155
		Municipal Code, Section 9.30.025, referencing OCSD Wastewater Discharge Regulations
b)	Require that sewers and connections be properly designed and constructed	Design Criteria for Sewer Facilities 2003 Edition(Resolution 5190)
		Sewer Standard Control Plans 2004 Edition (Resolution 5211)
		Standard Specifications for Public Works Construction (Greenbook)
c)	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency	Municipal Code, Section 9.25.115
		Municipal Code, Section 9.25.120
		Municipal Code, Section 9.30.010
		Design Criteria for Sewer Facilities 2003 Edition(Resolution 5190)
d)	Limit the discharge of fats, oils, and grease and other debris that may cause blockages	Municipal Code Section 9.25. Fats, Oil and grease management and discharge control program.
e)	Enforce any violation of its sewer ordinance	Municipal Code Section 9.25.155. Damages to Facilities or Interruption of Normal Operations
		Municipal Code Section 9.25.130. Enforcement
		Municipal Code, Section 9.30.025, referencing, OCSD Wastewater Discharge Regulations
		Municipal Code, Section 1.15, Enforcement

The City has the legal authority to regulate the maintenance of its entire collection system, including the satellite systems. A portion of the City of Los Alamitos is tributary to the City's sewer system in the northeast portion of College Park East. The Leisure World Retirement Community, Rossmoor/Los Alamitos Area Sewer District, and Sunset Beach Sanitary District provide sewer services to areas within the City boundaries; however, these agencies do not directly connect to Seal Beach sewers. Appendix C-2 includes all relevant interagency agreements with the City of Seal Beach.

Section 9.30.025 of the City's Municipal Code states, "*No person shall fail to comply with the provisions of Ordinance No. OCSD-01 of the Orange County Sanitation District*". This indicates that the City adopted the Orange County Sanitation District's (OCSD) Ordinance No. OCSD-01, which was overridden by OCSD-39 and subsequently by OCSD-48. OCSD Ordinance No. OCSD-48 is included in Appendix C-3 of this report. Ordinance OCSD-48 establishes OCSD's wastewater discharge regulations and does the following:

- Provides for maximum safety standards and public benefit from the use of OCSD's Sewerage Facilities
- Sets uniform requirements for sewer use and wastewater discharges

- Provides the process to obtain a discharge permit or certification and enforcement measures for noncompliance with permit requirements
- Enables OCSD to enforce civil or criminal penalties and/or suspend or revoke permits for violations of Pretreatment Standards and requirements and compliance schedules
- Seeks to improve the quality of wastewater received for treatment
- Encourages water conservation, wastewater minimization, and protection of groundwater
- Distributes costs equitably for all users of OCSD's Sewerage Facilities
- Supports the proper disposal of prescription drugs as provided by the Office of National Drug Control
- Demonstrates OCSD's commitment to wastewater reclamation and reuse, meeting applicable air quality goals, and the beneficial use of biosolids
- Enables OCSD to comply with all applicable state and federal laws

The City's 2016 SSMP audit includes recommendations to update Section 9.30.025 of the City's municipal code, which currently references the overridden OCSD Ordinance No. OCSD-01. The audit recommends updating the wording of the Municipal Code to "*No person shall fail to comply with the provisions of the current OCSD Wastewater Discharge Regulations.*" In doing so, the City does not reference a specific Ordinance number, which may change in the future. Upon implementation of this recommendation, the City's legal authority will be current with those of OCSD, regardless of when their Ordinances are updated.

Table 3-1 summarizes the relevant legal authority documents which correlate to the requirements.

A. ILLICIT DISCHARGES

Order No. 2006-0003 requires that the City have legal authority "*to prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc)*"

Illicit discharges are controlled by the City's Municipal Code. The relevant sections include, but are not limited to: Prohibitions (Section 9.25.020), Damages to Facilities or Interruption of Normal Operations (Section 9.25.155), and Orange County Sanitation District (OCSD) (Section 9.30.025).

Section 9.25.025 adopts the wastewater discharge requirements of OCSD that include the legal authority to prevent illicit discharges.

All Seal Beach tributary flows are tributary to OCSD facilities, and all customers are required to comply with the current OCSD Ordinance, which state:

No User shall introduce or cause to be introduced into the Sewerage Facilities, any Pollutant, substance, or Wastewater which:

- a) *Creates a fire or explosive hazard in the Sewerage Facilities including, but not limited to, wastestreams with a closed-cup flashpoint of less than 140 degrees Fahrenheit (60 degrees Centigrade) using the test methods specified in 40 CFR 261.21; or produces a gaseous mixture that is 10% or greater of the lower explosive limit (LEL).*
- b) *Causes obstruction to the flow in the Sewerage Facilities resulting in interference or damage*

to the Sewerage Facilities.

- c) Produces noxious or malodorous liquids, gases, solids or other Wastewater which, either singly or by interaction with other Wastes, is sufficient to create a public nuisance or a hazard to life, or to prevent entry into the Sewerage Facilities for maintenance or repair.*
- d) Result in toxic gases, vapors, or fumes within the Sewerage Facilities in a quantity that may cause acute worker health and safety problems.*
- e) Contains any radioactive Wastes or isotopes except in compliance with applicable regulations from other governmental agencies empowered to regulate the use of radioactive materials.*
- f) Causes, alone or in conjunction with other sources, the OCSD's treatment plant effluent to fail a toxicity test.*
- g) Causes OCSD's effluent or any other product of the treatment process, residues, biosolids, or scums, to be unsuitable for reclamation, reuse or disposal. Examples of items which may cause these conditions include, but are not limited, to food packaging, product containers, and non-dispersible products.*
- h) Causes discoloration or any other condition which affects the quality of the OCSD's influent or effluent in such a manner that inhibits the OCSD's ability to meet receiving water quality, biosolids quality, or air quality requirements established by Regulatory Agencies.*
- i) Creates excessive foaming in the Sewerage Facilities.*
- j) Violates any applicable Federal Categorical Pretreatment Standards, statute, regulation, or ordinance of any public agency or Regulatory Agency having jurisdiction over the operation of or discharge of Wastewater through the Sewerage Facilities.*
- k) Has a temperature higher than 140 degrees Fahrenheit, (60 degrees Centigrade), or which causes the temperature at the treatment plant to exceed 104 degrees Fahrenheit (40 degrees Centigrade).*
- l) Has a pH less than 6.0 or greater than 12.0.*
- m) Causes corrosion, fouling, occlusion, or damage to the POTW beyond normal wear and tear.*
- n) Is released in a discharge at a flow rate and/or Pollutant concentration (including oxygen-demanding Pollutant (BOD, etc.)) which will cause interference with OCSD's Sewerage Facilities.*
- o) Is in excess of the permitted Mass Emissions Rates established in accordance with: Section 213 or the concentration limits set forth in Table I, or the discharge permit.*
- p) Contains material which will readily settle or cause an obstruction to flow in the Sewerage Facilities resulting in interference, such as, but not limited to, sand, mud, glass, metal filings, diatomaceous earth, cat litter, asphalt, wood, bones, hair, fleshings, food packaging, product containers, and non-dispersible products.*
- q) Includes petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or Pass Through.*
- r) Causes the Orange County Water District Groundwater Replenishment System product water to exceed its TOC limit of 0.5 mg/L.*

Prohibition on Surface Runoff and Groundwater

- a) *No person shall discharge groundwater, surface runoff, or subsurface drainage directly or indirectly into the OCSD's sewerage facilities except as provided herein. Pursuant to Section 304 or 305, et seq., the OCSD may approve the discharge of such water only when no alternative method of disposal is reasonably available or to mitigate an environmental risk or hazard.*
- b) *The discharge of such waters shall require a Dry Weather Urban Runoff Permit or a Special Purpose Discharge Permit from OCSD*
- c) *If a permit is granted for the discharge of such water into a public sewer, the user shall pay the applicable charges established herein and shall meet such other conditions as required by the OCSD.*

The 2016 SSMP Audit includes the recommendation to update the City's municipal code to directly prohibit specific materials from the City's sewer system. This would override the existing code that provides the City this legal authority through adoption of OCSD's ordinance. Upon implementation of this recommendation, the City's municipal code will state the City's discharge regulations more clearly and directly.

B. DESIGN STANDARDS

Order No. 2006-0003 requires that the City have legal authority to *"require that sewers and connections be properly designed and constructed."*

The City established and adopted a Design Criteria for Sewer Facilities document in December 2003 and the Standard Plans for Sewer Facilities document in February 2004, which provide the legal authority to require proper design and construction of its sewer facilities. The 2016 SSMP Audit included the recommendation to reference these documents and the resolutions adopting them within the City's Municipal Code. Upon implementation of this recommendation, the Design Criteria for Sewer Facilities and the Standard Plans for Sewer Facilities will have the same legal authority as the existing regulations included in the City's current municipal code.

Section 10.15.050 of the Municipal Code states *"The subdivider shall provide a connection from each parcel to the Orange County Sanitation District's sewage collection, treatment, and disposal system, in compliance with the District's improvement standards and specifications"*. The 2016 SSMP audit includes the recommendation to change the wording to first reference the City of Seal Beach's standards and specifications, and then the OCSD standards and specifications, as necessary. Upon implementation of this recommendation, the subdivider's connections will be required to comply with the City's Design Criteria for Sewer Facilities and Sewer Standard Control Plans.

C. ACCESS TO FACILITIES

Order No. 2006-0003 requires that the City have legal authority to *"to ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained"* by the City.

Section 9.25.120 of the City's Municipal Code states, *"Persons or occupants of premises where wastewater is created or discharged shall allow the director, or city representatives, reasonable access to all parts of the*

FSE (Food Service Establishment) and all wastewater generating and disposal facilities for the purposes of inspection and sampling during all times the discharger's facility is open, operating, or any other reasonable time..” This section provides the City access to the FSEs and its wastewater facilities.

Section 9.30.010 of the City's Municipal Code states that *“Each sewer service lateral from the building to the collector sewer shall be maintained in a safe and sanitary condition by the owner of the property served.”* The 2016 SSMP audit recommends that an additional statement be added to this section to ensure that the City can obtain access to all City wastewater facilities. Upon implementation of this recommendation, the City will maintain full legal authority to access its wastewater system to conduct maintenance, inspections, or repairs.

D. FATS, OILS, AND GREASE

Order No. 2006-0003 requires that the City have legal authority *“to limit the discharge of fats, oils, and grease and other debris that may cause blockages”*.

The City has the legal authority to manage the Fats, Oils, and Grease discharges through its Municipal Code (Chapter 9.25, Fats, Oils, and Grease Management and Discharge Control) and its FOG Control Manual.

The 2016 SSMP audit includes the recommendation to update Section 9.25.005 of the City's Municipal Code to reference the current Statewide Waste Discharge Requirements and all future addendums. Upon implementation of this recommendation, the City's municipal code will be current with the regulations issued by the State Water Resources Control Board (SWRCB).

E. ENFORCEMENT

Order No. 2006-0003 requires that the City have legal authority *“to enforce any violation of its sewer ordinance”*.

Enforcement of sanitary sewer overflows (SSOs) is handled through the following Municipal Code sections:

- Section 9.25.130 through Section 9.25.195 detail the existing legal process for enforcing the requirements of Chapter 25 (Fats, Oil, and Grease Management and Discharge Control) of the City's Municipal Code.
- Section 9.30.25 Sewerage, Orange County Sanitation District, which adopts OCSD's wastewater Ordinance OCSD-48. As previously mentioned, it has been recommended that Section 9.30.25 be changed to reference the current OCSD ordinance.
- Section 1.15 General Provisions, Enforcement, which provides the City provisions for the issuance of administrative citations and cost recovery procedures to collect payment for resources utilized to contain and clean up areas affected by SSOs.

SECTION 4
OPERATION AND MAINTENANCE PROGRAM

4-1 WASTE DISCHARGE REQUIREMENTS

Order No. 2006-0003 requires that:

The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:

- (a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities.*
- (b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.*
- (c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan.*
- (d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained.*
- (e) Provide equipment and replacement part inventories, including identification of critical replacement parts.*

4-2 COMPLIANCE

The Public Works Department manages the operations and maintenance program for the City. They maintain system maps and other documents related to the O&M program for the sewer system.

A. SANITARY SEWER SYSTEM MAP

Order No. 2006-0003 requires that the City, “*maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities.*”

The City keeps an up-to-date geographical information system (GIS) database of its sewer and stormwater facilities. This database includes the following:

- Manholes with ID numbers and upstream invert elevation
- Pipes with pipe size, slope, reach length, material, year of construction, estimated peak dry weather flow, calculated depth of flow at peak dry weather flow, depth to diameter ratio, velocity, and pipe capacity. The map also shows the flow direction in the pipe
- Inverted siphons
- Pump Stations
- Force Mains
- Storm Drains
- Catch Basins
- Frequent Cleaning Maintenance Locations
- Food Establishments
- Historical overflow locations and associated data
- Results of condition assessment developed through CCTV inspection of the system

The GIS database is maintained by the Public Works Department, under the guidance of the Deputy Director of Public Works. A map of the sanitary sewer and storm drain systems is shown in Appendix D-1a and D-1b.

B. ROUTINE PREVENTIVE OPERATION AND MAINTENANCE ACTIVITIES

Order No. 2006-0003 requires that the SSMP, “*describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.*”

The City performs routine operation and maintenance activities in order to provide a high level of service to its customers, extend the useful life of its assets, and prevent overflows.

The primary preventative operations and maintenance work involve:

1. Identification of portions of the system that need frequent attention (frequent maintenance locations) through primarily CCTV inspections of the system and past cleaning records
2. Condition assessment of the gravity system based upon CCTV inspection
3. Visual inspection of the manholes by the City of Seal Beach staff
4. Cleaning the entire system annually
5. Cleaning of the frequent maintenance locations monthly or quarterly
6. Inspection of all pump stations daily, monthly, and quarterly

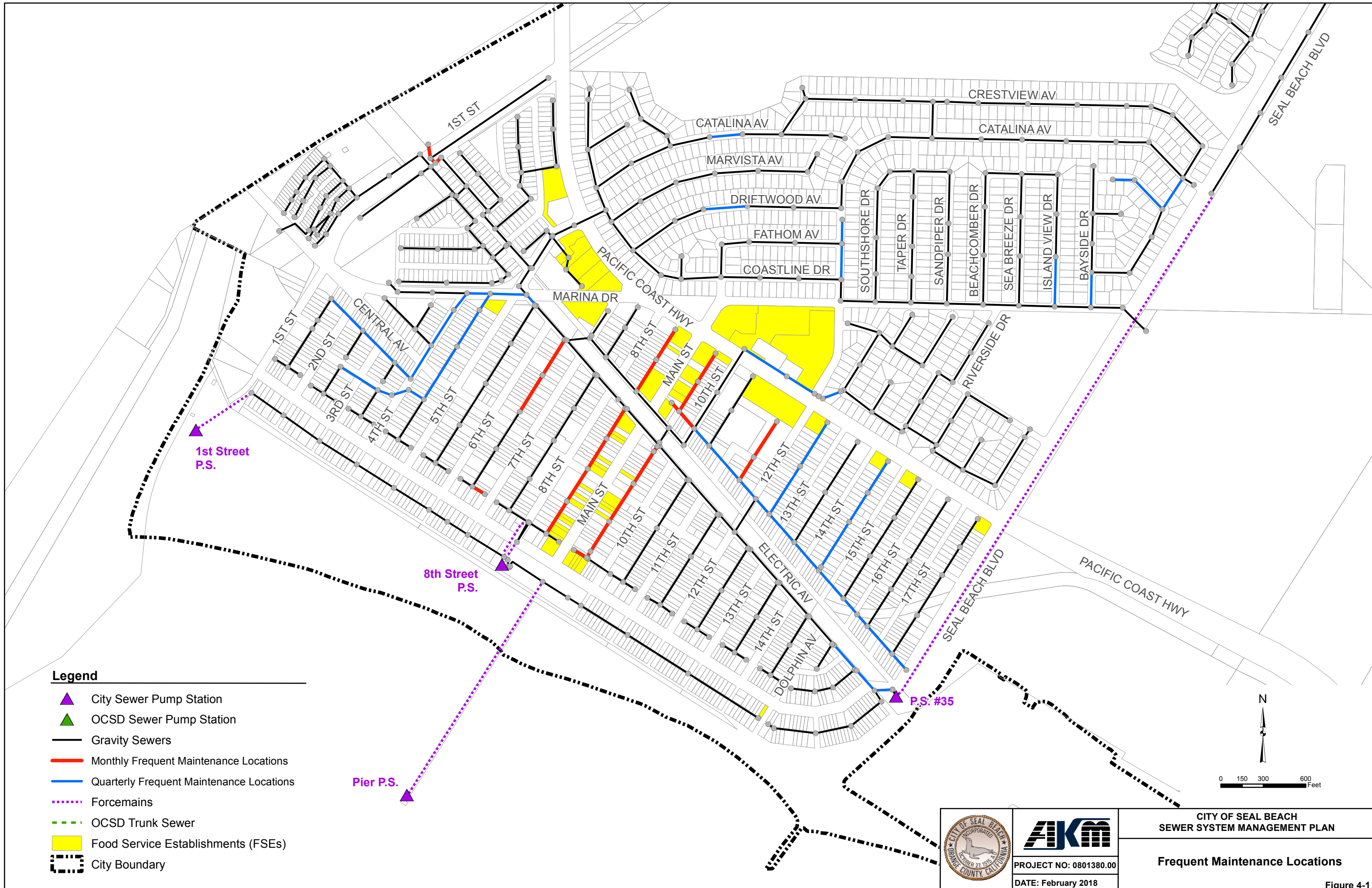
Gravity Sewer Maintenance and Documentation

The routine gravity system cleaning is conducted by a combination of City staff and contractors. The entire system (169,000 feet) is cleaned on an annual cycle, with the majority of the pipe length cleaned by City staff. At the end of the annual cycle, outside consultants are utilized to clean the major trunk lines, which include the Seal Beach Boulevard Trunk Sewer, the Electric Avenue Trunk Sewer, the Lampson Avenue Trunk Sewer, and the Boeing Trunk Sewer. As pipes are cleaned, the completed job is recorded both on a highlighted map and through a daily sewer cleaning report.

The scheduling of extra cleanings for frequent maintenance locations is based on past cleaning records and any diagnostic tools used over the past year, such as CCTV inspections. The frequent maintenance locations are cleaned either quarterly or monthly as shown in Table 4-1. A map of frequent maintenance locations and the locations of food service establishments are shown on Figure 4-1. The frequent maintenance location cleanings are tracked on a frequent maintenance location map and handwritten cleaning reports that are kept on file. All locations are in the Pump Station No. 35 Service Area.

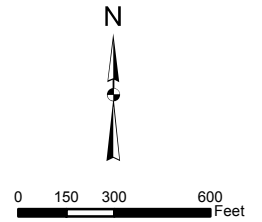
Table 4-1
Frequent Maintenance Locations

D/S MH	U/S MH	Location (Street or Easement)	Length (ft)	Size (in)	Frequency
C03-443	C03-442	1st St Easement	123	10	Monthly
C05-251	C05-251A	1st St Easement	30	10	Monthly
C05-251A	C05-255	1st St	45	10	Monthly
C05-255	C03-443	1st St	50	10	Monthly
F04-305	F18-013	6th St Alley & Electric Ave	13	8	Monthly
F04-306	F04-306A	6th St Alley	302	6	Monthly
F04-306A	F04-305	6th St Alley	291	6	Monthly
F04-C309	F04-307	Ocean Ave Alley	111	8	Monthly
F06-315A	F06-315	8th St Alley	245	8	Monthly
F06-315A	F18-011	8th St Alley & Electric Ave	13	8	Monthly
F06-316	F06-315A	8th St Alley	256	8	Monthly
F06-316A	F06-316	8th St Alley	276	8	Monthly
F06-317	F06-316A	8th St Alley	270	8	Monthly
F07-329	F18-010	Main St Alley & Electric Ave	27	8	Monthly
F07-330	F07-330A	Main St Alley	307	8	Monthly
F07-330A	F07-330B	Main St Alley	292	8	Monthly
F07-330B	F07-329	Main St Alley	46	8	Monthly
F07-331	F07-331A	Main St Alley	51	8	Monthly
F07-331A	F07-330	Main St Alley	246	8	Monthly
F07-C332	F07-331	Ocean Ave Alley	111	8	Monthly
F27-379	F27-379A	8th St Alley	250	8	Monthly
F27-379A	F27-378	8th St Alley	271	8	Monthly
F28-384	F28-383	Electric Ave Alley	163	6	Monthly
F28-390A	F28-390	11th St Alley	176	6	Monthly
F28-390B	F28-390A	11th St Alley	321	6	Monthly
F28-C385	F28-384	Electric Ave Alley	84	6	Monthly
F28-C386	F28-C386A	Main St Alley	262	8	Monthly
F28-C386A	F28-384	Main St Alley	220	8	Monthly



Legend

- ▲ City Sewer Pump Station
- ▲ OCSD Sewer Pump Station
- Gravity Sewers
- Monthly Frequent Maintenance Locations
- Quarterly Frequent Maintenance Locations
- ⋯ Force mains
- - - OCSD Trunk Sewer
- Food Service Establishments (FSEs)
- City Boundary



AKM
 PROJECT NO: 0801380.00
 DATE: February 2018

**CITY OF SEAL BEACH
 SEWER SYSTEM MANAGEMENT PLAN**

Frequent Maintenance Locations

Figure 4-1

Table 4-1 (continued)
Frequent Maintenance Locations

D/S MH	U/S MH	Location (Street or Easement)	Length (ft)	Size (in)	Frequency
D02-109	D02-108	Catalina Ave	242	8	Quarterly
D04-127	D04-126	Driftwood Ave	312	8	Quarterly
D05-140	D05-139	Balboa Dr	255	8	Quarterly
D05-141	D05-140	Balboa Dr	170	8	Quarterly
D07-173	D07-172	Island View Dr	351	8	Quarterly
D08-179	D08-177	Bayside Dr	254	8	Quarterly
D08-187	D08-186	Bayou Ave	288	8	Quarterly
D08-188	D08-187	Bayou Ave	153	8	Quarterly
D09-189	D08-186	Crestview Ave Easement	270	8	Quarterly
E05-202	E05-201	PCH Parking Lot Easement	359	8	Quarterly
E06-203	E06-203A	Balboa Dr + PCH	25	6	Quarterly
E06-203A	E06-203B	Balboa Dr + PCH	60	8	Quarterly
E06-203B	E05-202	PCH Parking Lot Easement	237	8	Quarterly
E06-204	E06-203	Marble Cove Way Easement	150	8	Quarterly
F01-289	F02-268	Marina Dr	185	8	Quarterly
F01-290	F01-290A	4th St	300	8	Quarterly
F01-290A	F01-289	4th St	140	8	Quarterly
F01-291	F01-290	4th St	275	8	Quarterly
F01-292	F01-291	Central Ave Alley	159	8	Quarterly
F01-296	F01-294	Central Ave Alley	321	8	Quarterly
F01-297	F01-292	Central Ave Alley	318	8	Quarterly
F02-268	F03-267	Marina Dr	313	8	Quarterly
F02-269	F02-268	4th St Alley	405	8	Quarterly
F02-270	F02-269	4th St Alley	442	8	Quarterly
F02-274	F02-270	Central Way - 400 Block	120	8	Quarterly
F02-275	F02-274	Central Way - 400 Block	148	8	Quarterly
F02-276	F02-275	Central Way - 400 Block	105	8	Quarterly
F02-280	F02-276	Central Way - 300 Block	308	8	Quarterly
F03-266	F18-014	Marina Dr	17	8	Quarterly
F03-267	F03-266	Marina Dr	22	8	Quarterly
F06-C319	F06-317	Ocean Ave	152	8	Quarterly
F18-002	F18-001	Seal Beach Bl	131	24	Quarterly
F18-003	F18-002	Electric Ave	181	24	Quarterly
F18-004	F18-003	Electric Ave	240	24	Quarterly
F19-390A	F28-390	Electric Ave Alley	155	8	Quarterly
F19-391	F19-390A	Electric Ave Alley	172	8	Quarterly
F19-392	F19-391	12th St Alley	405	6	Quarterly
F19-C393	F19-392	12th St Alley	365	6	Quarterly
F20-394	F19-391	Electric Ave Alley	265	8	Quarterly
F20-394	F21-397	Electric Ave Alley - 1300 Block	261	6	Quarterly
F21-397	F21-398	14th St Alley - 200 Block	400	6	Quarterly
F21-397	F22-400	Electric Ave Alley - 1400 Block	261	6	Quarterly
F21-C399	F21-398	14th St Alley - 300 Block	515	6	Quarterly
F23-403	F22-400	Electric Ave Alley - 1500 Block	268	6	Quarterly
F23-403	F24-407	Electric Ave Alley	265	6	Quarterly
F24-407	F24-410	Electric Ave Alley	163	6	Quarterly
F28-388	F28-383	Electric Ave Alley	167	8	Quarterly
F28-390	F28-388	Electric Ave Alley	322	8	Quarterly

Table 4-1 (continued)
Frequent Maintenance Locations

D/S MH	U/S MH	Location (Street or Easement)	Length (ft)	Size (in)	Frequency
PS-1	PS-2	1st St Parking Lot	255	4	Quarterly
PS-2	PS-3	1st St Parking Lot	80	4	Quarterly
PS-3	PS-4	1st St Parking Lot	54	4	Quarterly
PS-4	PS-5	1st St Parking Lot	4	4	Quarterly
AP-1	AP-2	Aquatic Park Parking Lot	311	8	Quarterly
AP-2	AP-3	Aquatic Park Parking Lot	311	8	Quarterly
AP-3	AP-5	Aquatic Park Parking Lot	193	8	Quarterly
AP-4	AP-5	Aquatic Park Parking Lot	346	8	Quarterly
AP-5	AP-6	Aquatic Park Parking Lot	10	8	Quarterly

Sewer cleaning reports are filed daily by City staff and any contractors working that day. City daily sewer cleaning reports include the following information:

- Sewer location
- Manhole IDs
- Date
- Length
- Pipe Size
- Verification of jetting
- Manhole inspection comments

Consultant daily sewer cleaning reports included the following information:

- Sewer location
- Manhole IDs
- Date
- Length
- Pipe Size
- Note of light, medium, or heavy grease, roots, shells, and/or debris

In addition, the City also performs manhole insect treatments on a schedule that results in each manhole being treated every three (3) to four (4) years.

Pump Station Maintenance and Documentation

The City performs routine inspections and maintenance at each of its seven (7) pump stations, which include the following:

- Daily visual inspections:
 - ❖ Pump operating time
 - ❖ Meter readings
- Weekly visual inspections:
 - ❖ Gas engine oil level, battery, water
 - ❖ Lift stations

- ❖ Generator hours and oil
 - ❖ Alarms
 - ❖ Auto dialer
 - ❖ Vent blower
 - ❖ Chart recorders
 - ❖ Debris, grease in wet well
 - ❖ Packing leaks in dry well pumps
 - ❖ Check valve operation
 - ❖ Control panel lights, running time meters, pump sequence
 - ❖ Transducers
 - ❖ Bubblers
 - ❖ Smart Covers
- Quarterly Maintenance
- ❖ Wet well cleaning

If inspections dictate the need for a valve replacement, City staff will perform the work. City staff will also perform after-hours inspections of control systems as necessary.

Maintenance reports for daily, weekly and quarterly sewer pump station maintenance are tracked with paper reports and placed in a station file. The City also maintains an electronic log of maintenance reports.

The procedure for pump station inspections are reviewed:

- After a sanitary sewer overflow event at a pump station
- If increased operational and maintenance activity is observed during the current inspection frequency
- Annually, at minimum

Corrective Maintenance

The City is prepared to provide immediate corrective maintenance during an emergency situation. When there is a failure of a critical asset, the City prioritizes the workforce for its corrective maintenance. The corrective maintenance repairs include, but are not limited to, the following:

- Emergency cleaning to eliminate a pipe blockage
- Spot repair or replacement of a failed pipe
- Replacing a rattling or failed manhole cover
- Repairing or replacing a pump that has become clogged or damaged by debris
- Respond to, investigate and mitigate customer complaints
- Repair of earthquake damage
- Vandalism

The Frequent Maintenance Location list is adjusted, as necessary, based on the following historical information gathered for each sewer:

- Sanitary sewer overflow
- Blockages observed from routine maintenance
- Maintenance records of grease, roots, debris from CCTV records
- Odor complaints

The cleaning frequency of Frequent Maintenance Locations may be reduced when the City staff verifies that the increased cleaning frequencies are unnecessary. The City will review CCTV inspections, visual inspections, and cleaning records to determine if the potential for obstructions are no longer relevant and the cleaning frequency may be reduced.

Food Service Establishment Inspection

City staff performs annual inspections of its food service establishments (FSEs) to ensure that they are in compliance with the City's Fats Oils and Grease (FOG) Control Program. The inspections may be conducted during normal business hours at the consent of the owner or with an administrative inspection warrant. The City evaluates the best management practices (BMP) regarding a variety of maintenance activities. In regards to proper FOG disposal, the City evaluates the eating and drinking establishment requirements, the waste handling and disposal requirements, and the spill prevention and control requirements. See Section 7 of this report for further information regarding the City's FOG Control Program.

C. REHABILITATION AND REPLACEMENT PLAN

Order No. 2006-0003 requires that the City must “develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan.”

Condition Assessment History

The City of Seal Beach's wastewater collection system dates back to the 1920's. Through most of the 20th century, the condition of the system was not comprehensively evaluated. Limited closed-circuit television inspection of the system was available when the 1999 Master Plan was completed. Presence of significant infiltration in parts of the system was verified at that time, and an asset replacement program was recommended. To start, the City began replacing aging collection system pipes in portions of Old Town.

At the same time, the City hired a contractor and conducted CCTV inspection and condition assessment of nearly the entire system between 2002 and 2004. Many rehabilitation (lining and spot repairs) projects were performed since then based on the recommendations of the 2005 Master Plan Update.

The City again conducted CCTV inspection and condition assessment of nearly the entire system between in 2013. A very small portion of the pipes could not be accessed due to lack of manholes at the upstream end.

Recent Condition Assessment Work

Empire Pipe Cleaning and Equipment, Inc. (Empire) performed video inspection work on approximately 165,000 feet of pipe between March 2013 and October 2013. A total of 739 reaches of pipe were inspected. Each inspection report lists the service connections and deficiencies by location in the inspected pipe. Photographs of the identified deficiencies are included in the inspection reports. National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) coding procedures formed the basis of the inspection work and reports prepared by Empire.

The City recently completed an update to its Sewer Master Plan (2018). The rehabilitation and replacement plan was developed as a part of this project and documented in the Sewer Master Plan report. The 2013 CCTV inspection data was utilized to identify and prioritize system condition deficiencies. The priorities were selected primarily with consideration of the health and safety of the public and protection of the environment by minimizing the possibility of sanitary sewer overflows and leakage. The pipe capacity, location of particular defects, and the tributary areas/wastewater flow rates are other considerations used in formulating the final capital improvement project priorities.

The initial priorities for improvements to the sewers are based on the severity of the pipe defects. The six (6) categories utilized in this report are as follows:

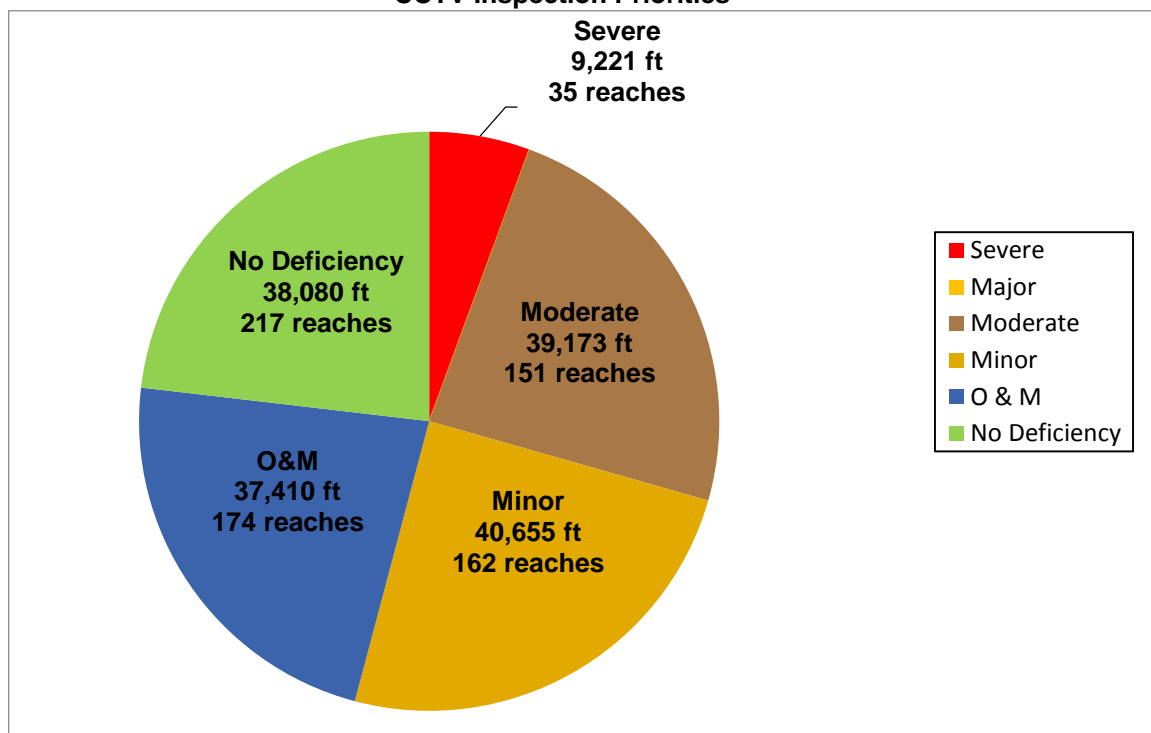
- a. Severe Condition – This category primarily includes structural defects of deformed pipe, hole in pipe, broken pipe, and large joint offsets.
- b. Major Condition – This category primarily includes structural defects of multiple fractures, medium joint offsets and major sags. Pipes with a large number of cracks are also included.
- c. Moderate Condition – Pipes in this category have fractures, cracks, small and medium joint offsets, and sags.
- d. Minor Condition – Pipes in this category have slight sags, cracks, and small joint offsets.
- e. O&M – This condition is for operational and maintenance problems and construction feature defects. There are no structural defects.
- f. No Defects – This condition is for the pipe with no structural, operation and maintenance or construction feature defects.

Figure 4-2 shows the distribution of the condition priorities assigned to the pipes with completed inspections.

Planning level recommendations and cost estimates are included in the 2018 Sewer Master Plan and are based upon the pipe defects reported in the CCTV Inspection Reports and review of select recordings. Actual improvements must be designed based upon further detailed review of each recording, taking into consideration other factors such as location, age and flow capacity of the pipe, existing utilities, and concurrent infrastructure construction projects. The initial priorities are given to the reaches with severe and major structural defects.

A total of approximately 9,221 feet of pipe (35 reaches) is recommended for rehabilitation due to being identified as having PACP priorities of “Severe” condition. At a minimum, all identified locations will require spot repairs. The actual scope of work for each project should be determined through further review of the CCTV inspections.

Figure 4-2
CCTV Inspection Priorities



Follow-up CCTV Inspection and Condition Assessment Program

As structural deficiency mitigation projects are implemented, their condition will be reclassified, and they will be included in the appropriate category for follow up CCTV inspection and/or condition assessment work.

- Portions of the system rated to be in **Severe Structural Deficiency** condition will be inspected **annually** and evaluated to determine if immediate corrective action is needed.
- Portions of the system rated to be in **Major Structural Deficiency** will be inspected and evaluated once **every three (3) years** to determine if immediate corrective action is needed.
- Portions of the system rated to be in **Moderate Structural Deficiency** condition will be inspected and evaluated once every **five (5) years**
- Portions of the system rated to be in **Minor Structural Deficiency** condition will be inspected and evaluated once every **ten (10) years**
- Portions of the system with **no structural deficiencies** will be inspected and evaluated once every **ten (10) years**

- f. Portions of the system with **Operational and Maintenance** deficiencies, except the **Hot Spots**, will be inspected and evaluated once every **four (4) years**.
- g. **Hot Spots**, except siphons, will be inspected and evaluated **before and after each maintenance activity and cleaning for one year** to establish the appropriateness of the method, and then **annually**.

D. STAFF TRAINING

Order No. 2006-0003 requires that the City must, *“Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained.”*

The City’s maintenance staff receives training through the California Water Environment Association’s (CWEA) Training Program, which is the current industry standard for training and certifying sewer collection system maintenance staff. Currently, City staff members hold the CWEA certifications shown in Table 4-2.

**Table 4-2
City CWEA Certification**

Name	Title	CWEA Certification
David Fait	Maintenance Supervisor	3
Darrick Escobedo	Water Department	1
Cory Wekerle	Senior Maintenance Worker	1

The City also holds internal training which includes, but is not limited to, the following:

- Spill Response Procedures
- Traffic Control and Driver Safety
- Personal Protective Equipment
- Health Precautions related to working with raw sewage
- Lockout/Tagout procedures
- Confined Space entry prohibitions

The Maintenance Services Supervisor is responsible for scheduling and documenting training sessions for City staff. The training sign-in sheets are filed at the City yard, and they include the training topic, date, and list of attendees. The City will maintain the training history records in an electronic database.

The City requires its contractors to possess adequate training and the appropriate certification. The Deputy Director of Public Works / Maintenance Services Supervisor is responsible for verifying the qualifications of Contractor Staff.

E. EQUIPMENT INVENTORY

Order No. 2006-0003 requires that the City must, “provide equipment and replacement part inventories, including identification of critical replacement parts.”

The Maintenance Services Supervisor is responsible for keeping an updated inventory of the City’s equipment. The City will maintain an equipment inventory list in an electronic database.

The current equipment inventory list is shown in Table 4-3.

**Table 4-3
Equipment Inventory**

Part Description	Quantity in Stock	Year, Make and Model
Vehicles		
Super Duty 3/4 ton truck	1	2007 F-250
Super Duty 1.5 ton truck	1	2013 F-450
Vactor Combo Jetter truck	1	2013 Vac-Con
Generators		
Trailer mounted generator	1	Denyo mq power whisper watt
Emergency Pumps		
8th St Station spare pump	1	Baldor Reliance
Boeing Station spare pump	1	Reliance Electric STD
1st St Station spare pump	1	Reliance Electric STD
Yard Station spare pump	1	Reliance Electric STD
Other		
Smart Manhole Covers	6	
Gas Testing Equipment	2	
Smart Rain Covers	2	
General Purpose Tools: Manhole hooks, ladders, hand tools		
Traffic Safety Equipment: Cones		
Personal Safety Equipment: hard hats, gloves, eye protection		

SECTION 5
DESIGN AND PERFORMANCE PROVISIONS

5-1 WASTE DISCHARGE REQUIREMENTS

Order No. 2006-0003 requires that the City:

- (a) *Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for rehabilitation and repair of existing sewer systems; and*
- (b) *Procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances and for rehabilitation and repair projects.*

5-2 COMPLIANCE

The documents used for design and performance evaluations include the following:

- Design Criteria for Sewer Facilities (Appendix E-1)
- Standard Plans for Sewer Facilities (Appendix E-2)
- Standards Specifications for Public Works Construction (Greenbook)

These documents were adopted by the City Council through Resolution 5190, and Resolution 5211, respectively. They are on file with the Department of Public Works, Engineering Division. The Standard Plans are also located on the City's official website.

A. STANDARDS FOR INSTALLATION, REHABILITATION, AND REPAIR

Order No. 2006-0003 requires that the City possess, "*Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for rehabilitation and repair of existing sewer systems.*"

Design Criteria for Sewer Facilities

Standards for design and construction of sewer facilities are included in the City's Design Criteria for Sewer Facilities document. Topics covered in this document include, but are not limited to the following:

Minimum Pipe Size	Minimum Velocity
Pipe Depth to Diameter Ratio	Minimum and Maximum Slope
Design Flow Criteria	Standard Location and Alignment
Stationing Procedure	Minimum Depth
Sewer Pipe Material	Manhole Design Requirements
Clean-Outs	Separation Requirements between Utilities
House Laterals	Private Sewer System
Sewer Pump Station Design Requirements	Standard Sewer Notes

The Standard Plans for Sewer Facilities document includes details for manholes, laterals, bedding, cleanouts, concrete encasements, concrete slope anchors, steel casing pipe, PVC liner, gas flap installation, criteria for separation of water and sewer mains, and grease interceptors.

The City updates its Municipal Code as necessary (or when applicable) to require sewers and connections be designed and constructed to the standards included in the Design Criteria for Sewer Facilities and the Standard Plans for Sewer Facilities.

B. STANDARDS FOR INSPECTION AND TESTING OF NEW, REHABILITATED AND REPAIRED FACILITIES

Order No. 2006-0003 requires that the City possess, “*Procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances and for rehabilitation and repair projects.*”

The City of Seal Beach has adopted the Standard Specifications for Public Works Construction (Greenbook). The Greenbook and the Design Criteria for Sewer Facilities documents provide the inspection and testing procedures for the following:

- CCTV Inspection (Greenbook 306-1.4.1)
- Water Exfiltration Testing (Greenbook 306-1.4.2)
- Water Infiltration Testing (Greenbook 306-1.4.3)
- Air Pressure Test (Greenbook 306-1.4.4)
- Water Pressure Test (Greenbook 306-1.4.5)
- Equipment Installation and Testing (Design Criteria for Sewer Facilities, 17.28.b)

SECTION 6 OVERFLOW EMERGENCY RESPONSE PLAN

The Order requires that at a minimum Overflow Response Plan must include:

- (a) *Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;*
- (b) *A program to ensure appropriate response to all overflows;*
- (c) *Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially effected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP (Monitoring and Reporting Program). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*
- (d) *Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;*
- (e) *Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and*
- (f) *A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewaters to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and the impact of the discharge.*

6-1 COMPLIANCE

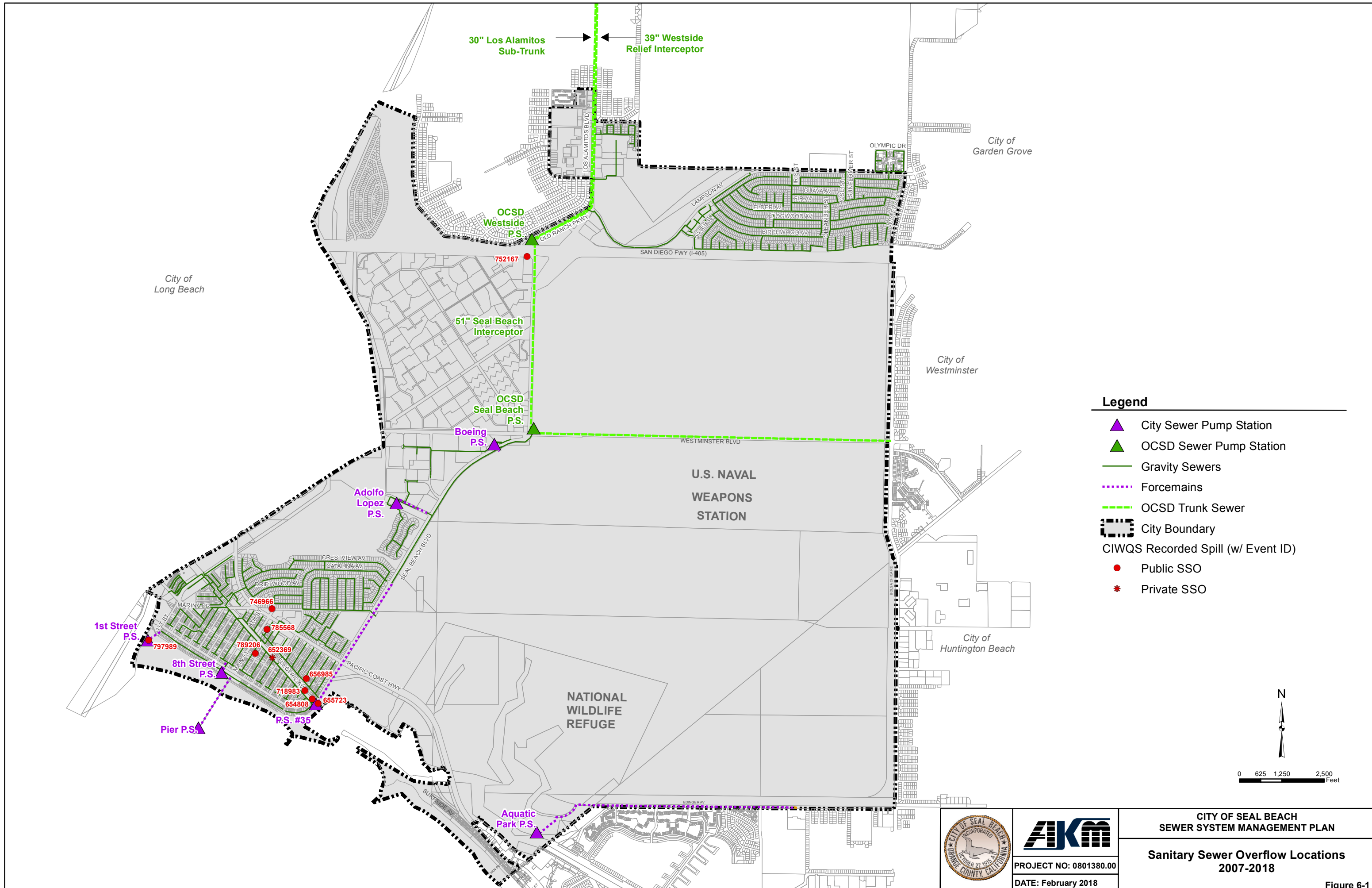
The City's Sanitary Sewer Overflow Emergency Response Plan (SSOERP) is a stand-alone document that was submitted with this report. It includes the procedures for overflow tracking, overflow response, post response, updating the plan, and staff training.

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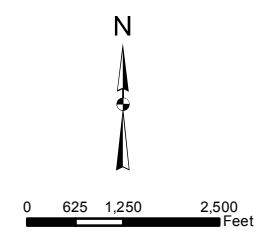
Order No. 2006-0003 requires that at a minimum, the SSOERP must include "*proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;*"

A City staff member, (responding maintenance staff during business hours or standby staff after hours), will be at the site within one (1) hour of the time reported.



Legend

- City Sewer Pump Station
- OCSD Sewer Pump Station
- Gravity Sewers
- Forcemains
- OCSD Trunk Sewer
- City Boundary
- CIWQS Recorded Spill (w/ Event ID)**
- Public SSO
- Private SSO



AKM
 PROJECT NO: 0801380.00
 DATE: February 2018

**CITY OF SEAL BEACH
 SEWER SYSTEM MANAGEMENT PLAN**

**Sanitary Sewer Overflow Locations
 2007-2018**

Figure 6-1

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The City's website includes the numbers for City Hall, the Maintenance Yard, and the Police Department. The City will update the City's website to include the public SSO reporting procedures and emergency contact numbers.

<http://www.sealbeachca.gov/>

Once the City Staff confirms the spill, he/she will notify the appropriate agencies of the SSO event. The emergency contact list is included in the SSOERP document, which lists the agencies and telephone numbers of all constituents that may need to be contacted during an SSO event.

The contact list includes the following:

- Office of Emergency Services
- Orange County Health Care Agency (Business hours and after hours)
- Maintenance Service Supervisor
- Director of Public Works
- Contractors
 - JIMNI Systems, Inc.
 - Doty Bros.
 - Empire Pipe Cleaning and Equipment Inc.
 - National Plant Services, Inc.
 - Rain-for-Rent
 - Charles King Co.
- Orange County Fire Department
- Seal Beach Police Department
- Orange County Public Works (OCPW)
- Truesdale Laboratories (Laboratory)
- John L. Hunter & Associates (Environmental Consultant)
- Nearby Sewer Agencies
 - Orange County Sanitation District (OCSD)
 - City of Long Beach
 - Rossmoor/Los Alamitos Area Sewer District
 - Sunset Beach Sanitary District
 - Leisure World

The contact information is summarized in the SSOERP. The response procedures are detailed on Figure 2-2 and are include in the SSOERP document.

B. SSO RESPONSE

Order No. 2006-0003 requires that at a minimum, the SSOERP must include, “A *program to ensure appropriate response to all overflows.*”

The stand-alone SSOERP document includes a step-by-step procedure for notification, response, containment, correction, clean-up, and reporting for all types of sanitary sewer overflows. The document details the response procedure for the following overflow events:

- Gravity sewer spills
- Pump station failure – specific to each sewer pump station
- Force main failure
- Overflows from City’s sewers that extend to Orange County Public Works storm drains
- Overflows from City’s sewers that extend to stormwater pump stations and/or retarding basins
- Private Spills
- Spills originating from OCSD sewers
- Spills originating from the Cities of Anaheim, Orange, Stanton, Westminster, Santa Ana, and Midway Sanitary City sewers

The up-to-date sewer and storm drain maps are included in Appendix D of this report as well as in the stand-alone SSOERP document.

C. NOTIFYING THE APPROPRIATE REGULATORY AGENCIES

Order No. 2006-0003 requires that at a minimum, the SSOERP must include “*procedures to ensure prompt notification to appropriate regulatory agencies and other potentially effected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP (Monitoring and Reporting Program). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*”

Overflow receipts from the public during business hours are directed to the City’s Public Works Department and then forwarded to the utilities maintenance manager, maintenance service supervisor, and the responding maintenance staff. The City’s SSOERP document includes a comprehensive contact list, of individuals that may need to be reached in the event of a sanitary sewer overflow. This list includes, but is not limited to the following:

- Office of Emergency Services (OES)
- Orange County Health Care Agency (OCHCA)
- Orange County Public Works
- Nearby Sewer Agencies
- On-Call Contractors
- Orange County Sanitation City (OCSD)

- Orange County Fire Department
- City of Seal Beach Police Department
- City approved Laboratory
- City approved Environmental Consultant

The SSOERP includes a detailed procedure for reporting all spills electronically, to the State Water Resources Control Board (SWRCB) California Integrated Water Quality System (CIWQS) website, (<http://ciwqs.waterboards.ca.gov/>). In doing so, City’s spills are automatically added to the Statewide Sanitary Sewer Overflow Database.

The Water Services Manager, Sanitation Supervisor, and Sanitation Foreman are registered to submit draft and certified reports on the CIWQS website.

D. TRAINING

Order No. 2006-0003 requires that at a minimum, the SSOERP must include “*procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained.*”

The City’s SSOERP Plan includes the requirement to ensure its staff is properly trained on the overflow emergency response procedures. The training includes office training and field training that is to be conducted by the Maintenance Services Supervisor. The topics regarding the City’s SSO response training are detailed in Table 6-1.

Annual field training includes simulation of gravity sewer overflows, failures at each sewer pump station, and an overflow that has reached a stormwater facility.

The Maintenance Services Supervisor is responsible for scheduling and documenting training sessions for City staff.

**Table 6-1
Training Tasks**

Type	Training Task
Office Training	1. Review of SSOERP
	2. Review of initial notification procedures
	3. Understanding of Sewer and Storm Drain Maps
	4. Preparation of Sanitary Sewer Overflow Report
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	6. Post response recommendations
Field Training	1. Safety Procedures
	2. Securing of impacted site
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	5. Sewer pump Station response
	6. Procedures for overflows extending to stormwater retarding basins and pump station
	7. Physical training for overflow response procedures
	8. Clean-up
	9. Overflow volume calculation

E. ADDITIONAL RESPONSE ACTIVITIES

Order No. 2006-0003 requires that at a minimum, the SSOERP must include “*procedures to address emergency operations, such as traffic and crowd control and other necessary response activities.*”

The Overflow Emergency Response Plan document includes the procedures to address emergency operations which include traffic control, crowd control, post response activities, and public notification.

F. PREVENTION OF DISCHARGE OF WASTEWATERS TO SURFACE WATERS AND IMPACT ON ENVIRONMENT

Order No. 2006-0003 requires that at a minimum, the SSOERP must include “*a program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewaters to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and the impact of the discharge.*”

The SSOERP includes the procedures to minimize the impact of a sanitary sewer overflow. In the event that a sewer overflow reaches waters of the State, the City shall adhere to the monitoring requirements of Orange County Health Care Agency. The City approved laboratory and environmental consultant will be contacted to assess the sewer overflow.

SECTION 6 OVERFLOW EMERGENCY RESPONSE PLAN

The Order requires that at a minimum Overflow Response Plan must include:

- (a) *Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;*
- (b) *A program to ensure appropriate response to all overflows;*
- (c) *Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially effected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP (Monitoring and Reporting Program). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*
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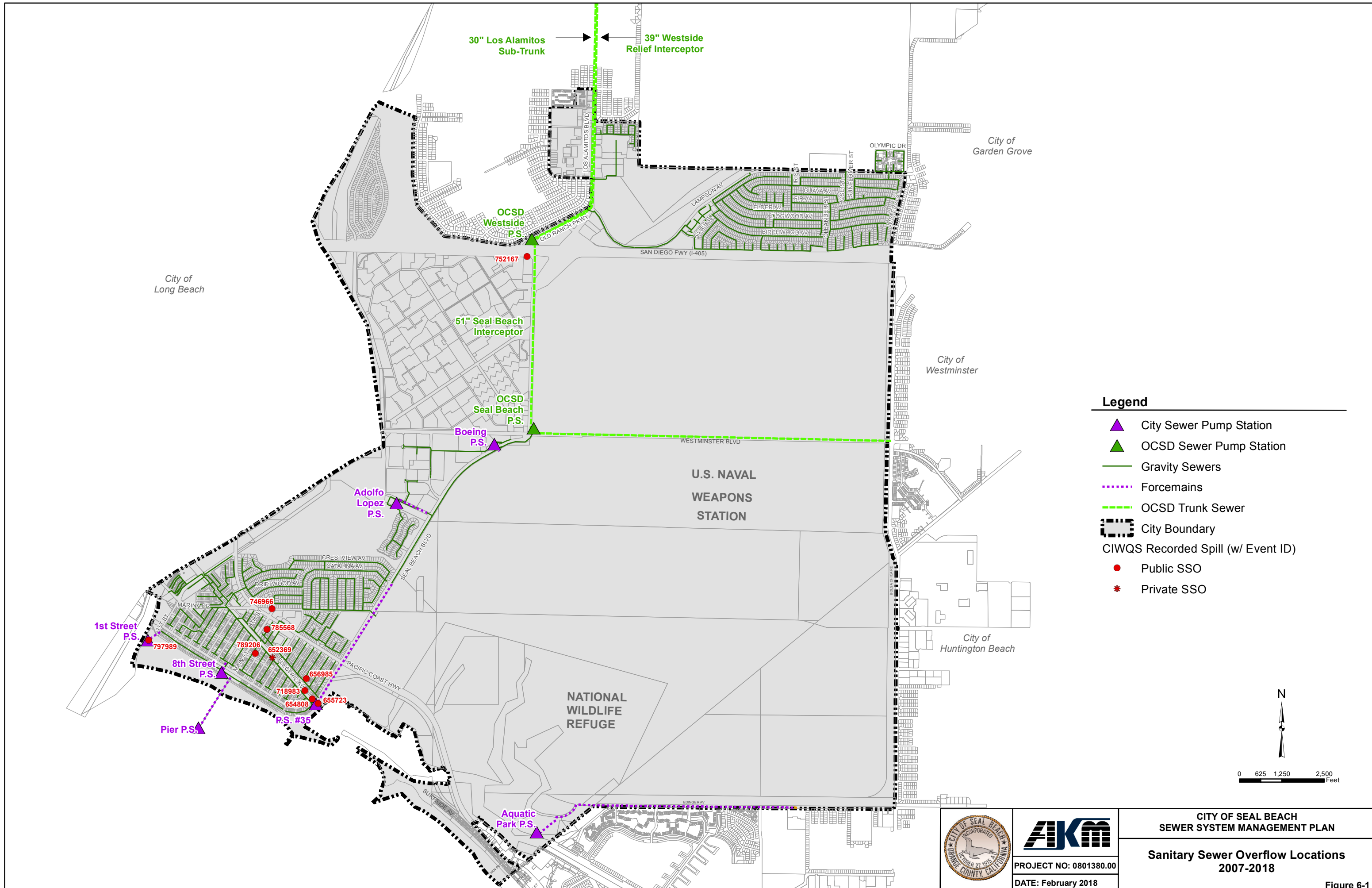
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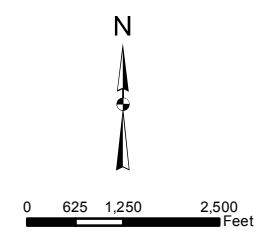
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The SSOERP includes the procedures to minimize the impact of a sanitary sewer overflow. In the event that a sewer overflow reaches waters of the State, the City shall adhere to the monitoring requirements of Orange County Health Care Agency. The City approved laboratory and environmental consultant will be contacted to assess the sewer overflow.

SECTION 7
FATS, OILS, AND GREASE CONTROL PROGRAM

Order No. 2006-0003 requires:

The Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:

- (a) An implementation program and schedule for a public education outreach program that promotes proper disposal of FOG;*
- (b) A plan and a schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;*
- (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;*
- (d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, Best Management Practices (BMP) requirements, record keeping and reporting requirements;*
- (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the enrollee has sufficient staff to inspect and enforce the FOG ordinance;*
- (f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and*
- (g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (F) above.*

7-1 COMPLIANCE

The City's FOG Control Program consists of the FOG Control Manual and the City's Municipal Code, which together satisfy the requirements of Order No. 2006-0003. The City implemented its FOG control program in December 2004 by establishing the required legal authority (Section 9.25 of Municipal Code) and preparing a Fats, Oil and Grease Control Manual. The original ordinance was subsequently updated in March 2014 (Ordinance Number 1639) and the FOG Control Manual was updated in August 2015. Appendix F-1 includes the current FOG Control Manual.

A. EDUCATION AND OUTREACH

Order No. 2006-0003 requires the City to manage *"an implementation program and schedule for a public education outreach program that promotes proper disposal of FOG"*.

All FSEs are provided with a copy of the FOG Control Manual and a FOG control training DVD.

The FOG Control Manual describes how the City has partnered with the County of Orange and the Orange County Sanitation District to provide educational materials to Food Service Establishments (FSEs), including

posters and brochures to educate people on Fats, Oil and Grease (FOG) Best Management Practices (BMPs).

The City also displays information regarding its FOG Program on its website.

<http://www.sealbeachca.gov/Departments/Public-Works/Administration-Engineering>

The City's 2016 SSMP audit includes the recommendation to update the City's website to include the FOG Control Program and other educational materials regarding proper FOG control measures. As stated in the FOG Control Manual, the City will update the Public Works webpage to directly include a PDF of the FOG Control Manual and other FOG related educational material. Upon implementation of this recommendation, the public will have access to all aspects of the City's FOG Control Program.

The City's 2016 SSMP audit also includes the recommendation to increase its public outreach efforts regarding proper FOG disposal. As stated in the FOG Control Manual, the City plans to expand its FOG education by providing:

- Water utility bill inserts
- Announcements in City newsletters

The following websites are also available for more information regarding FOG:

<https://www.ocsd.com/businesses/source-control-industrial-wastewater-permits/fats-oil-grease-permit>

https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/pretreatment/docs/intro_fog_inspections.pdf

B. FOG DISPOSAL

Order No. 2006-0003 requires the City to implement *"a plan and a schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area.*

The current FOG Control Manual requires the following:

- FSEs must clean their grease interceptor once the FOG and solids occupy 25 percent of the interceptor's capacity.
- It is recommended that the FSEs inspect their grease interceptor every three (3) months at minimum.
- The inspections shall consist of taking a core sample of the solids layer to estimate the thickness of the FOG and settled solids layers.
- Cleaning must be performed by a licensed waste hauler, certified by the Orange County Health Care Agency.
- Orange County Sanitation District (OCSD) treatment facilities and landfills are the approved locations for disposal of FOG and wash water disposal.

C. LEGAL AUTHORITY

Order No. 2006-0003 requires the City to possess “*the legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG*”

The Municipal Code is accessible through the City’s website. It includes the FOG Ordinance (Section 9.25) which provides the City legal authority to regulate discharges to the sewer system and identify measures to prevent SSOs and blockages caused by FOG.

Section 9.25.020 Prohibitions, requires FSEs to obtain a Fats, Oils, and Grease Wastewater Discharge Permit, which creates an agreement between the FSEs and the City to regulate the FSE’s FOG discharges. It is also stated that waste removed from grease control devices, waste failing to comply with the FOG Control Manual, or waste that violates the Sewer WDRs is prohibited from being discharged to the sewer system.

The Municipal Code provides adequate legal authority to meet the requirements of Order No. 2006-0003.

D. GREASE REMOVAL DEVICES

Order No. 2006-0003 requires the City to possess “*requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, Best Management Practices (BMP) requirements, record keeping and reporting requirements.*”

Chapter 9.25 Fats, Oil and Grease Management and Discharge Control of the City’s Municipal Code sets the legal authority to require FSEs to install, operate and maintain grease interceptors. The FOG Control Manual is supplemental to the FOG Ordinance and describes in detail the FOG Control Program, kitchen best management practices, grease interceptor requirements, public education, and permits and enforcements.

Installation Requirement for Grease Removal Devices – FSEs are required to install, operate and maintain an approved type and adequately sized grease interceptor per the FOG Ordinance (Municipal Code, Section 9.25.035).

Design Standards for Grease Removal Devices – The FOG Control Manual states that each new grease interceptor needs to comply with the criteria of the current Uniform Plumbing Code (Appendix H). The City’s Standard Plan 925 S-19 identifies the minimum requirements for the design of a grease interceptor.

Maintenance Requirements for Grease Removal Devices – The FOG Ordinance (Section 9.25.105) provides the City the legal authority to require grease interceptors to be “*maintained in efficient operating condition in accordance with the FOG Discharge Manual*”. The FOG Control Manual includes procedures to inspect and clean its grease interceptors. This document recommends that FSEs inspect their grease interceptors at minimum, once every three (3) months, and clean the interceptor when the solids occupy 25% of the storage volume.

Best Management Practices - Best Management Practices must be implemented per the FOG Ordinance (Municipal Code, 9.25.030). Requirements are included in the FOG Control Manual.

Record Keeping and Reporting - The City’s FOG Control Manual requires the FSEs to maintain a written

record of every time a grease interceptor is inspected and cleaned with the following:

- Date of maintenance
- Company and person performing maintenance
- Estimated volume of FOG removed
- Signature of manager or FSE designee

It is required that inspection and cleaning records be maintained on the premises for a period of at least two years and be made readily available to City staff for review and inspection.

E. FSE INSPECTIONS

Order No. 2006-0003 requires the City to possess the “*authority to inspect grease producing facilities, enforcement authorities, and whether the enrollee has sufficient staff to inspect and enforce the FOG ordinance.*”

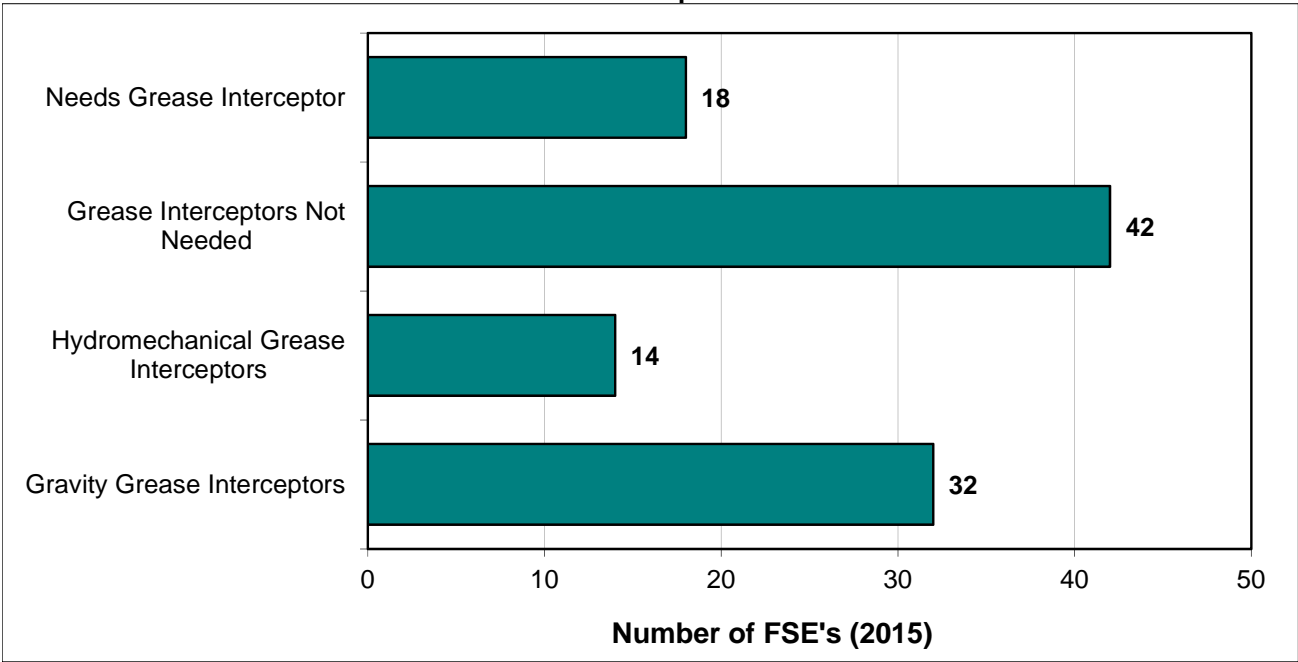
City inspections are conducted to assess the FSE’s compliance with the FOG Wastewater Discharge Permit requirements. Inspections can be implemented any time during operating hours without warning to the food service establishment. Section 9.25.115 and 9.25.120 of the Municipal Code provides the necessary legal authority to inspect FSEs and to enforce any non-compliance to the FOG Control Program. The Director of Public Works (Director) has the legal authority to inspect and sample wastewater discharges of any FSE to ascertain whether conditions of the FOG discharge permit are being met.

The Municipal Code grants the Director the legal authority to inspect a food service establishment’s compliance with the FOG Control Program. The City currently contracts the FOG inspections to Environmental Compliance Inspection Services, who perform grease control device inspections, and kitchen BMP inspections. The inspection reports include but are not limited to the following data:

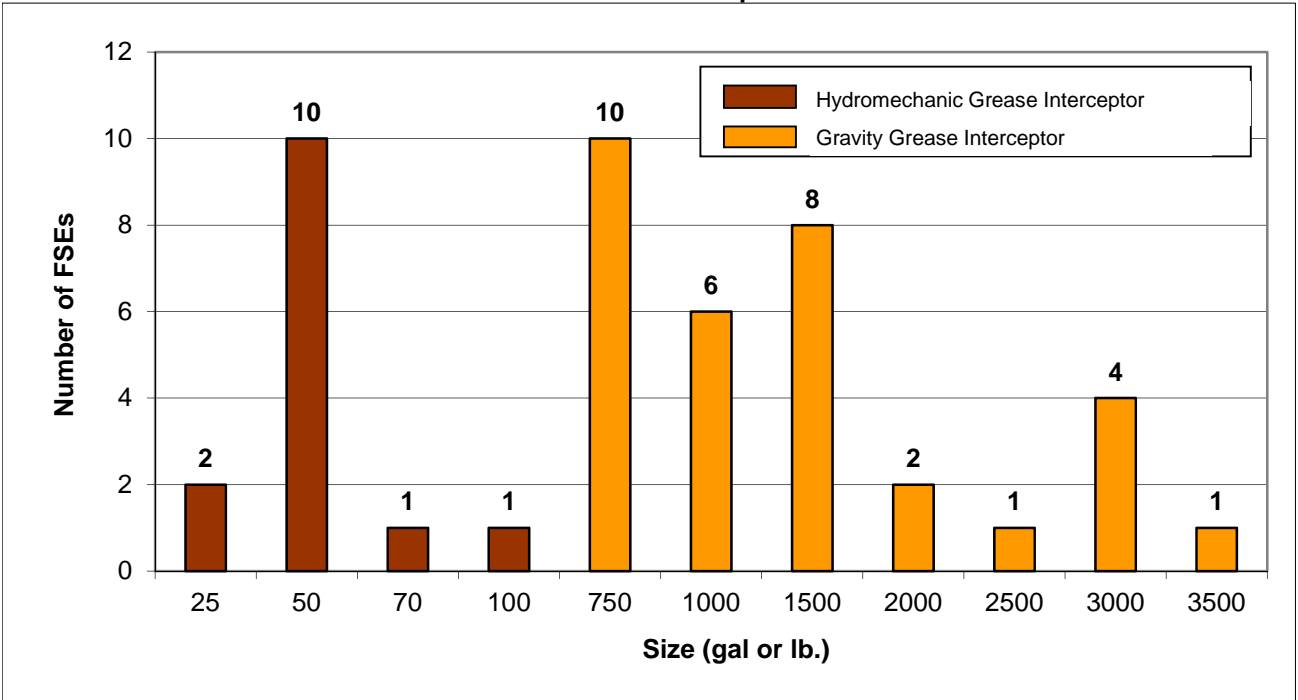
- Facility Name
- Address
- FSE Contact
- Phone Number
- Size of Grease Control Device
- Date of Last Cleaning
- Name of Waste Hauler
- Grease Control Device Compliance Status
- BMP Compliance Status
- Reasons for BMP Noncompliance

As of December 2015, the number of FSEs within the City’s sewer service area is 106 (which includes 42 establishments that do not require a grease control device). The inspection records from Environmental Compliance Inspection Services were reviewed. Figure 7-1 displays the FSE’s grease control device installation status. Figure 7-2 shows the sizes of the grease interceptors.

**Figure 7-1
FSE Grease Interceptor Status**



**Figure 7-2
Size of Grease Interceptor**



According to the FOG Control Manual, the FSE inspections are performed on the schedule included in Table 7-1.

Table 7-1
FSEs Inspection Schedule

Item	No FOG Discharge	FOG Discharge with a Grease Control Device	FOG Discharge without a Grease Control Device
Permit Renewal	None	12 Months	12 Months
BMP Inspection	None	12 Months	12 Months
GI Inspection	None	4 Months	None

F. FOG CLEANING AND MAINTENANCE SCHEDULE

Order No. 2006-0003 requires the City to plan *“an identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section.”*

The City’s frequent maintenance sewers requiring monthly or quarterly cleaning, are summarized in Table 4-1 and on Figure 4-1 of this report. The summary table identifies the reasons for the increased cleaning.

The locations of the frequent maintenance sewers with FOG accumulation and FSE locations are detailed on Figure 7-3. The figures also illustrate the locations of food service establishments, which are generally in the vicinity of the sewers that require additional maintenance.

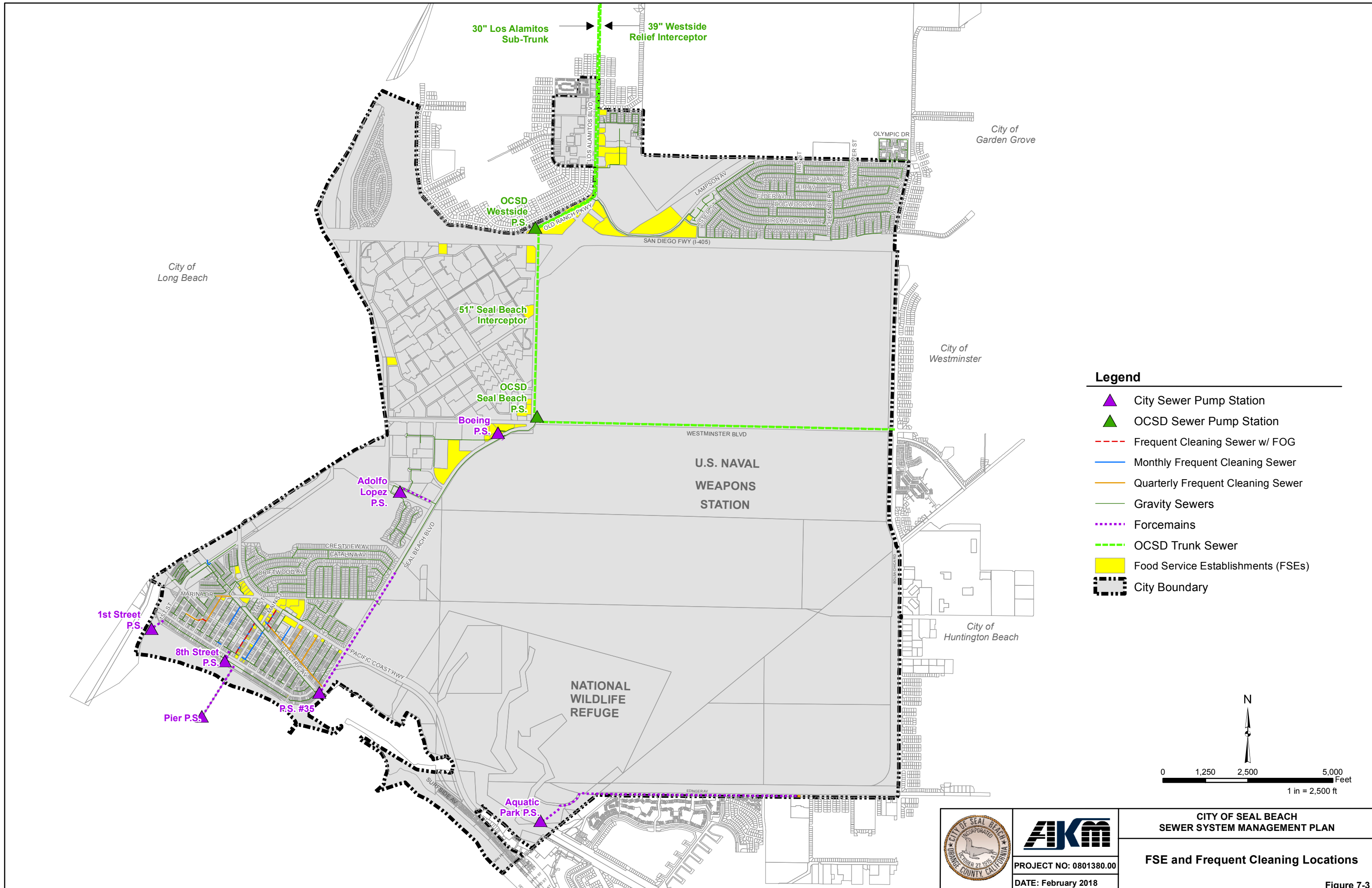
The City evaluates inspection reports and SSO history annually to determine if additional FSEs need to install grease control devices, if the Frequent Maintenance Locations list needs to be updated, or if additional requirements need to be added to the City’s FOG Control Program.

G. SOURCE CONTROL MEASURES

Order No. 2006-0003 requires the City’s plan to include *“development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.”*

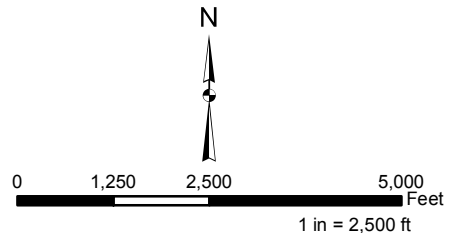
The City has complied with this requirement by:

- Adopting a FOG Ordinance
- Developing and distributing FOG Control Manuals to all FSEs
- Requiring grease interceptors for FSEs
- Inspecting FSE’s grease control devices, and BMPs



Legend

- City Sewer Pump Station
- OCSD Sewer Pump Station
- Frequent Cleaning Sewer w/ FOG
- Monthly Frequent Cleaning Sewer
- Quarterly Frequent Cleaning Sewer
- Gravity Sewers
- Forcemains
- OCSD Trunk Sewer
- Food Service Establishments (FSEs)
- City Boundary



AKM
 PROJECT NO: 0801380.00
 DATE: February 2018

**CITY OF SEAL BEACH
 SEWER SYSTEM MANAGEMENT PLAN**

FSE and Frequent Cleaning Locations

Figure 7-3

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SECTION 8
SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

8-1 WASTE DISCHARGE REQUIREMENTS

Order 2006-03-DWQ requires:

The Enrollee shall prepare and implement a CIP that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

- (a) **Evaluation:** Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from the SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;*
- (b) **Design Criteria:** Where design criteria do not exist or are deficient, under take the evaluation identified in (a) above to establish appropriate design criteria; and*
- (c) **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*
- (d) **Schedule:** The enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (A)-(C) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D.14.*

8-2 COMPLIANCE

The City's recently completed 2018 Sewer System Master Plan (Sewer Master Plan). It fulfills the requirements for the System Evaluation and Capacity Assurance Plan (SECAP).

A. EVALUATION

Order 2006-03-DWQ requires the SECAP to include *“Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from the SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;*

A calibrated hydraulic model of the City's sewer system was updated as a part of the 2018 Sewer Master Plan.

Model Geometry

All pipes are included in the model except for laterals and private sewer lines. Pipe diameters, lengths, slopes, and roughness coefficients are entered in the model. As-built plans were used to update the existing model geometry when available.

Model Loads

The sewer loads were modified in the model to more accurately match the flows recorded at the pump stations for FY 2014-2015. The College Park East sewershed loads were reduced by a factor similar to what was calculated for the Pump Station No. 35 sewershed, due to its similarity in tributary land use which is primarily residential. This assumes that water conservation occurred similarly in both areas.

As noted in Section 3-4.2, the 2005 master plan study quantified infiltration in the College Park East and Bridgeport/Old Town sewersheds at about 375 gallons per acre per day and 850 gallons per acre per day, respectively. The College Park East infiltration rate of 375 gpd/ac was applied throughout the sewershed to each manhole. The Bridgeport/Old Town infiltration rate of 850 gpd/ac was applied to manholes with a top of pipe elevation less than 3 ft amsl, which is below ground water levels and primarily applied to the Electric Avenue trunk sewer.

Pump Station Flows

The model was run as a steady-state simulation for a peak dry weather flow scenario. Pumps and force mains were not simulated directly. Instead, average dry weather flows tributary to a pump station were transferred to the location of the end of the force main, where they were reallocated as loads and peaked along with all other loads for each pipe reach.

Peaking Dry Weather Flow Factor

Peak dry weather flow is calculated from average dry weather flow utilizing the following formula:

$$Q_{pdw} = 1.85 \times Q_{adw}^{0.92} \text{ (mgd)}$$

where Q_{adw} = the average dry weather flow (mgd)

Q_{pdw} = the peak dry weather flow (mgd)

Peak Wet Weather Flow Factor

Peak wet weather flow (Q_{pww}) is calculated from peak dry weather flow utilizing the following formula:

$$Q_{pww} = 1.35 \times Q_{pdw}$$

B. DESIGN CRITERIA

Order No. 2006-0003 requires that the SECAP include “*Design Criteria: where design criteria do not exist or are deficient, under take the evaluation identified in (a) above to establish appropriate design criteria.*”

The City maintains design criteria in the City of Seal Beach Design Plans for Sewer Facilities document. The existing design criteria meet the requirements of Order No. 2006-0003.

Existing Collection System

The existing collection system pipes are considered capacity deficient when the calculated peak dry weather depth to diameter ratio is above 0.64 for any pipe size. The capacity available between depth to diameter ratios of 0.64 and 0.82 (same capacity as when the pipe is completely full) is reserved for wet weather flows.

Where possible, new pipes are designed to produce a minimum velocity of 2.0 feet per second with average dry weather flows and 3.0 feet per second with peak dry weather flows. However, as much of the City is very flat, a majority of the existing sewer pipes do not meet the velocity criteria. Replacement of these pipes to meet the velocity requirement is not practical and would produce a very poor return on investment.

C. CAPACITY ENHANCEMENT MEASURES

Order No. 2006-0003 requires that the SECAP include “*Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*”

Model Results

As previously discussed, the hydraulic model was updated during the development of the 2017 Sewer Master Plan. Based on the hydraulic model results, there were no pipe capacity deficiencies identified for the City’s collection system. As such, no capital improvement projects directly related to capacity will be recommended in this Master Plan Update.

It was recommended to evaluate the infiltration and inflow (I/I) in the College Park East, Old Town, and Bridgeport sewersheds. The City has made several improvements to the storm drain system to reduce flooding. Southern California experienced some heavy rainfall and significant storm events in 2016-2017. The flow data collected at the sewer pump stations during these events should be evaluated to quantify I/I and determine the impact of I/I on the sewer system during a rain event.

Capital Improvement Program

The Capital Improvement Program (CIP) for capacity improvements is formulated to eliminate the deficiencies in accordance with the City’s design criteria. However, since there were no capacity deficiencies identified in

the system, the capital improvement program includes primarily condition driven rehabilitation and replacement projects and redundancy related projects. A description of the proposed CIP projects can be found in the 2018 Sewer Master Plan report.

Budget and Funding

The Sewer Capital Fees are tiered. Revenues are projected to be \$762,300 for operation in the FY 2017-2018. Sewer Capital Fund revenues are projected to be \$1,735,000 for FY 2017-2018.

Maintenance and operations expenditures are projected to be \$1,339,000 for FY 2017-2018. Capital expenditures are projected at \$1,185,500 for FY 2017-2018.

D. SCHEDULE

Order No. 2006-0003 requires that *“the Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements”*.

The Capital Improvement Program as a part of the 2018 Sewer Master Plan was based upon the results of the hydraulic analyses, condition assessment, facility reviews and the established priorities. The highest priority, near-term CIP projects to be completed from 2018 to 2023. The remaining projects were identified to be of lower priority with a target completion dates between 2024 and 2033. The proposed CIP projects are shown in Table 8-1 and 8-2.

**Table 8-1
Capital Improvement Projects (2018-2023)**

CIP Project	Sub-project ID	Up-stream Manhole ID	Down-stream Manhole ID	Description	Alley	Dia-meter (in)	Material	Qty	Unit Basis	Unit Cost	Total Estimated Cost with Pipe Replacements Implemented (\$)	Spot Repair Locations	Unit Repair Cost (\$)	Total Estimated Cost with Pipe Repairs Implemented (\$)
1	1a	F02-269	F02-269A	4th St Alley Repair/Replace	Y	8	VCP	305	LF	\$ 480	\$ 204,960	2	\$ 60,000	\$ 168,000
	1b	F05-312	F02-311	7th St Alley Repair/Replace (2 seg)	Y	8	PVC	594	LF	\$ 480	\$ 399,168	1	\$ 60,000	\$ 84,000
	1c	F03-301	F03-266A	5th St Alley Repair/Replace	Y	8	VCP	340	LF	\$ 480	\$ 228,480	2	\$ 60,000	\$ 168,000
	1d	F06-316	F06-315A	8th St Alley Repair/Replace	Y	8	VCP	258	LF	\$ 480	\$ 173,376	2	\$ 60,000	\$ 168,000
	1e	F28-386A	F28-384	Main St Alley Repair/Replace	Y	8	VCP	220	LF	\$ 480	\$ 147,840	1	\$ 60,000	\$ 84,000
	1f	F04-307	F04-306	6th St Alley Repair/Replace	Y	8	VCP	308	LF	\$ 480	\$ 206,976	1	\$ 60,000	\$ 84,000
	1g	F15-320	F06-C319	8th St Repair/Replace	N	8	VCP	169	LF	\$ 320	\$ 75,712	1	\$ 40,000	\$ 56,000
	1h	F01-C295	F01-294	2nd St Alley Repair/Replace	Y	8	VCP	240	LF	\$ 480	\$ 161,280	1	\$ 60,000	\$ 84,000
	1i	F10-344A	F10-344	11th St Alley Repair/Replace	Y	8	VCP	354	LF	\$ 480	\$ 237,888	1	\$ 60,000	\$ 84,000
	1j	F06-317	F06-316A	8th St Alley Repair/Replace	Y	8	VCP	273	LF	\$ 480	\$ 183,456	1	\$ 60,000	\$ 84,000
	1k	F09-340	F09-339	12th St Alley Repair/Replace	Y	8	VCP	129	LF	\$ 480	\$ 86,688	1	\$ 60,000	\$ 84,000
1l	F15-C372	F15-371	East Seal Way Repair/Replace	N	8	VCP	600	LF	\$ 320	\$ 268,800	1	\$ 40,000	\$ 56,000	
Subtotal								3,790			\$ 2,374,624			\$ 1,204,000
2	2a	D06-151	D05-138	Bolsa Ave Repair/Replace	N	10	VCP	246	LF	\$ 400	\$ 137,760	1	\$ 40,000	\$ 56,000
	2b	D02-115 & D02-114	D02-113	Avalon & Crestview Repair/Replace (2 seg,)	N	8	VCP	440	LF	\$ 320	\$ 197,120	2	\$ 40,000	\$ 112,000
	2c	D05-132	D05-130	Coastline Dr Repair/Replace	N	12	VCP	285	LF	\$ 480	\$ 191,520	1	\$ 40,000	\$ 56,000
	2d	D02-102	D02-099	Carmel Ave Repair/Replace	N	8	VCP	330	LF	\$ 320	\$ 147,840	1	\$ 40,000	\$ 56,000
	2e	D09-193	D09-192	Catalina Ave Repair/Replace	N	8	VCP	356	LF	\$ 320	\$ 159,488	1	\$ 40,000	\$ 56,000
	2f	D03-119	D03-117	Marvista Ave Repair/Replace (2 seg)	N	8	VCP	544	LF	\$ 320	\$ 243,712	2	\$ 40,000	\$ 112,000
	2g	D07-176	D07-175	Beachcomber Dr Repair/Replace	N	8	VCP	259	LF	\$ 320	\$ 116,032	1	\$ 40,000	\$ 56,000
	2h	D05-134	D05-133	Fathom Ave Repair/Replace	N	8	VCP	193	LF	\$ 320	\$ 86,464	1	\$ 40,000	\$ 56,000
	2i	D08-188	D08-187	Bayou Way Repair/Replace	N	8	VCP	151	LF	\$ 320	\$ 67,648	1	\$ 40,000	\$ 56,000
	2j	D04-150	D04-146	Catalina Ave Repair/Replace	N	8	VCP	353	LF	\$ 320	\$ 158,144	1	\$ 40,000	\$ 56,000
	2k	D04-144	D04-143	Balboa Dr Repair/Replace	N	8	VCP	242	LF	\$ 320	\$ 108,416	1	\$ 40,000	\$ 56,000
	2l	D08-182	D08-180	Bayside Dr Repair/Replace	N	8	VCP	215	LF	\$ 320	\$ 96,320	1	\$ 40,000	\$ 56,000
	2m	D07-170	D07-169	Sea Breeze Dr Repair/Replace	N	8	VCP	354	LF	\$ 320	\$ 158,592	1	\$ 40,000	\$ 56,000
	2n	D04-142	D04-128	Driftwood Ave Repair/Replace	N	8	VCP	341	LF	\$ 320	\$ 152,768	1	\$ 40,000	\$ 56,000
	2o	E07-219	E07-218	Riviera Dr Repair/Replace	N	8	VCP	253	LF	\$ 320	\$ 113,344	1	\$ 40,000	\$ 56,000
2p	D08-186	D08-185	Harbor Way Repair/Replace	N	8	VCP	148	LF	\$ 320	\$ 66,304	1	\$ 40,000	\$ 56,000	
2q	D06-155	D06-154	South Shore Dr Repair/Replace	N	8	VCP	151	LF	\$ 320	\$ 67,648	1	\$ 40,000	\$ 56,000	
Subtotal								4,861			2,269,120			\$ 1,064,000
3	3a	B07-G01	B07-A23	Dogwood Ave Repair/Replace	N	8	VCP	122	LF	\$ 320	\$ 54,656	Replace		\$ 54,656
	3b	B16-J16	B16-A45	Wisteria St Repair/Replace	N	8	VCP	268	LF	\$ 320	\$ 120,064	1	\$ 40,000	\$ 56,000
	3c	U02-E20	U02-E19	Apollo Ct Lateral Repair/Replace	N	8	VCP	182	LF	\$ 320	\$ 81,536	1	\$ 40,000	\$ 56,000
Subtotal								572			\$ 256,256			\$ 166,656
4				Adolfo Lopez Pump Station										
	-	-	-	Construct Parallel Force Main - Next 5 years	N	6	PVC	1,100	LF	\$ 200	\$ 308,000	-	-	\$ 308,000
Subtotal - Adolfo Lopez Pump Station											\$ 308,000			\$ 308,000
5				Boeing Pump Station										
	-	-	-	Connect to SCADA System				1	LS	\$ 60,000	\$ 84,000	-	-	\$ 84,000
	-	-	-	Construct Parallel Force Main - Next 5 years	N	10	PVC	160	LF	\$ 400	\$ 90,000	-	-	\$ 90,000
Subtotal - Boeing Pump Station											\$ 174,000			\$ 174,000
6				8th Street Pump Station										
	-	-	-	Construct Canopy Over Electrical Enclosures - Next 5 Years				1	LS	\$ 60,000	\$ 84,000	-	-	\$ 84,000
Subtotal - 8th Street Pump Station											\$ 84,000			\$ 84,000
7				1st Street Pump Station										
	-	-	-	Raise Electric Cabinets - Next two years				1	LS	\$ 50,000	\$ 70,000	-	-	\$ 70,000
	-	-	-	Reline Wet Well - Next 2 years				1	LS	\$ 20,000	\$ 28,000	-	-	\$ 28,000
Subtotal - 1st Street Pump Station											\$ 98,000			\$ 98,000
8	-	-	-	Install Smart Manhole Covers at Potential Overflow Sites				12	EA	\$ 5,000	\$ 84,000	-	-	\$ 84,000
9	-	-	-	Evaluate infiltration/inflow in College Park East, Old Town, and Bridgeport				1	LS	\$120,000	\$ 168,000	-	-	\$ 168,000
10	-	-	-	Survey All Sewers and Update Hydraulic Model				1	LS	\$150,000	\$ 210,000	-	-	\$ 210,000
TOTAL REPLACEMENT COST (2018-2023)											\$ 6,026,000	TOTAL EST. COST (2018-2023)		\$ 3,560,656

Pipe Unit Cost is based on \$40/diameter-inch (Alley costs increased by 50%)

Construction Cost = Unit Cost * Qty

Engineering, Administration, Contingencies = 40% of Construction Cost

Total Cost = Construction Cost + Engineering, Administration, Contingencies

**Table 8-2
Capital Improvement Projects (2024-2033)**

CIP Project	Description	Qty	Unit Basis	Unit Cost	Total Cost (\$)	
11	Adolfo Lopez Pump Station					
	Replace Mechanical and Electrical Equipment - 2025	1	LS	\$ 600,000	\$ 840,000	
	Replace Wet Well Piping - 2025	1	LS	\$ 70,000	\$ 98,000	
	Site Improvements - 2025	1	LS	\$ 50,000	\$ 70,000	
	Replace Standby Generator - 2030	1	LS	\$ 150,000	\$ 210,000	
Subtotal Adolfo Lopez Pump Station					\$ 1,218,000	
12	Aquatic Park Pump Station					
	Replace Pump Station if not Transferred to Huntington Beach	1	LS	\$ 1,000,000	\$ 1,400,000	
Subtotal - Aquatic Park Pump Station					\$ 1,400,000	
13	Boeing Pump Station					
	Replace Mechanical and Electrical Equipment - 2024	1	LS	\$ 600,000	\$ 840,000	
	Replace Wet Well Piping - 2024	1	LS	\$ 80,000	\$ 112,000	
	Replace Standby Generator - 2033	1	LS	\$ 150,000	\$ 210,000	
Subtotal - Boeing Pump Station					\$ 1,162,000	
14	8th Street Pump Station					
	Replace Cast Iron Force Main - 2025	N	6	PVC	\$ 240	\$ 51,000
	Extend New Force Main - 2025	N	6	PVC	\$ 300	\$ 78,000
Subtotal - 8th Street Pump Station					\$ 129,000	
15	1st Street Pump Station					
	Construct Parallel Force Main - 2027	N	4	PVC	\$ 120	\$ 84,000
	Replace Mechanical and Electrical Equipment - 2027	1	LS	\$ 200,000	\$ 280,000	
	Replace Valve Vault, Valves and Meter - 2027	1	LS	\$ 100,000	\$ 140,000	
	Replace Influent Sewers - 2027 or when paving is replaced	350	LF	\$ 180	\$ 88,800	
Subtotal - 1st Street Pump Station					\$ 592,800	
16	Pump Station No.35					
	Replace Pumps with Close Coupled Units - 2028	3	EA	\$ 150,000	\$ 630,000	
	Construct Natural Gas Standby Generator with ATS - 2028	1	LS	\$ 360,000	\$ 504,000	
	Replace the Electrical and Control Equipment - 2028	1	LS	\$ 600,000	\$ 840,000	
	Construct Parallel Force Main - 2025	N	16	DI	\$ 640	\$ 3,719,000
Subtotal - Pump Station No.35					\$ 5,693,000	
TOTAL REPLACEMENT COST (2024-2033)					\$10,194,800	

SECTION 9
MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

9-1 WASTE DISCHARGE REQUIREMENTS

Order No. 2006-0003 requires that the Enrollee shall:

- (a) *Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;*
- (b) *Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;*
- (c) *Assess the success of the preventative maintenance program;*
- (d) *Update program elements, as appropriate, based on monitoring or performance evaluations; and*
- (e) *Identify and illustrate SSO trends, including: frequency, location, and volume.*

9-2 COMPLIANCE

The City will monitor the effectiveness of its program continuously in order to minimize the possibility of SSOs.

A. RELEVANT INFORMATION

The City keeps updated records of all sewer related documents which include but are not restricted to the following:

- GIS Shapefiles
- CCTV Records
- Maintenance Records
- Frequent Cleaning List
- FSE Inspections Information
- Sanitary Sewer Overflow Reports

GIS Shapefiles - The City's Public Works Department, under the guidance of the Deputy Director of Public Works, maintains the sewer and storm water shapefiles.

CCTV Records – Previously, the City's closed-circuit television (CCTV) inspections were contracted to Empire Pipe Cleaning and Equipment, Inc. whose operators are NASSCO certified. The City maintains hard copies of all CCTV records and the video files are maintained on an external hard drive. The system was last CCTV inspected in 2013. Inspections were reviewed and assessed as a part of the 2018 Sewer Master Plan.

Maintenance Records - The City's maintenance records are tracked on a map and reports are kept as hard copies in station files.

Frequent Cleaning List – The City performs monthly and quarterly frequent cleaning. The City evaluates its Frequent Cleaning Locations list after the following occurrences:

- Sanitary sewer overflow
- Blockages observed from routine maintenance
- Maintenance records of grease, roots, debris from CCTV records
- Odor complaints

FSE Inspections –FSE inspection data is maintained by the City electronically. Currently, the FSE inspections are contracted to an outside agency, who summarizes the inspections in an excel spreadsheets, that is monitored by the City.

Sanitary Sewer Overflow Reports – The Sanitary Sewer Overflow database is updated continuously on the California Integrated Water Quality System (CIWQS) website.

B. SSMP MONITORING

Order No. 2006-0003 requires the City to “*monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP.*”

To monitor the implementation and effectiveness of SSMP elements, the following actions are planned by the City:

- **Goals:** Review goals annually and update as necessary
- **Organization:** Review organization chart annually, update as necessary, and distribute copy to all parties so they are informed of responsibilities related to the SSMP elements
- **Legal Authority:** Review Municipal Code annually and update as necessary. Consult City staff to determine if any problems occurred due to inadequate legal authority in relation to the sewer system, SSOs, FOG, etc.
- **Operation and Maintenance:** Review routine and frequent cleaning records quarterly to ensure preventative maintenance goals are being met. Review pump station maintenance logs, annually, to ensure preventative maintenance goals are being met.

Categorize the condition of the sewers and schedule follow up inspections based on these categorizations. The City should review CCTV follow-up inspection records annually to ensure re-inspection schedule is being met for those sewers previously identified with condition deficiencies.

Review training schedules/records annually to ensure maintenance staff has appropriate training in all areas related to sewer system maintenance and SSOs.

Review Capital Improvement Program annually and reprioritize as necessary.

- **Design and Performance Provisions:** Review City Design Standards for Sewer Facilities document and standard sewer drawings semi-annually and update as necessary.

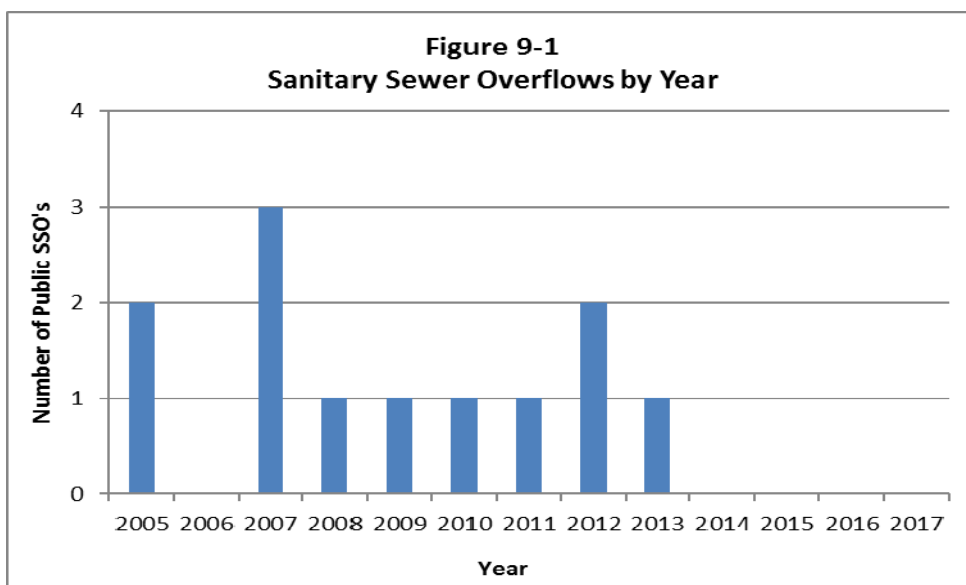
- **Overflow Emergency Response Plan:** Review OERP annually and update as necessary. Consult maintenance staff for recommendations of improvement based on experiences in field and in reporting SSOs when they occurred.
- **Fats, Oil, and Grease Control Program:** Review FOG Ordinance and FOG Manual annually and update as necessary. Consult FSE inspector for recommendations of improvements. Review FSE inspection data annually to ensure goals are being met.

Map and correlate SSOs with FSE locations and determine what corrective actions are needed, such as adding portions of system to the frequent cleaning list or further education at upstream FSE locations. This task should be done anytime an SSO occurs.
- **System Evaluation and Capacity Assurance Plan:** Update when any significant changes in loads have occurred or are predicted to occur (i.e. future development or redevelopment)
- **Communication:** Review communication program annually to ensure goals are being met. Review causes of SSOs and increase communication efforts if necessary. For example, a few SSOs were caused by grease in the sewer system. This indicates that the public may needs to be further educated on proper FOG control measures.

C. SUCCESS OF PREVENTATIVE MAINTENANCE PROGRAM

Order No. 2006-0003 requires the City to “assess the success of the preventative maintenance program.”

The SSO trend is detailed on Figure 9-1. A sewer collection system with less than three (3) spills from the publicly owned system (excluding private property spills that do not result from a blockage in the public system) per 100 miles per year is considered an adequate system. For the City’s sewer system (32 miles), this is an average of about one (1) spill per year. As illustrated on Figure 9-1, the number of public SSOs peaked at three (3) spills in 2007, which were generally due to the improvements at Pump Station 35. The City’s public spill history has been within this threshold for the last eight years with no spills in the last four years (2014 – 2017). This is an indication of a very successful preventative maintenance program.



D. UPDATE PROGRAM ELEMENTS

Order No. 2006-0003 requires the City to “Update program elements, as appropriate, based on monitoring or performance evaluations.”

Biennial audits of the SSMP will be conducted to measure program effectiveness. The audit itself is a formal methodology for measuring program effectiveness. Based on the findings of the SSMP audit, the City will modify the SSMP elements accordingly.

The City shall review and update its SSMP document every five (5) years as required by the Waste Discharge Requirements.

E. SSO TRENDS

Order No. 2006-0003 requires the City, “Identify and illustrate SSO trends, including: frequency, location, and volume.”

The spill history summarizing the SSO location, date, and likely cause of the spill is detailed in Table 9-1.

**Table 9-1
Sewer System Overflows from 2005 to 2017**

Year	Date	Public/ Private	Location	Spill Volume (gal)	Recovered Volume (gal)	Surface Water	Reached Storm Drains ?	Likely Cause
2005	4/9/05	Long Beach	Westminster Avenue	2,200	400	No	Yes	Grease, sand & 2 bricks
	11/3/05	Public	7th St at Marina Dr	180	90	Yes	No	Root Blockage
	11/28/05	Private	16th St	37	37	Street	No	Debris, Paper
2006	1/3/06	Private	3001 Old Ranch Parkway	170	50	OC Flood Control Basin	Yes	Grease
2007	6/19/07	Private	120 Central Ave	30	N/A	None	No	Blocked Lateral
	7/25/07	Public	Sewer Pump Station 35	30	30	None	No	Construction
	8/8/07	Public	Sewer Pump Station 35	392	392	None	No	Construction
	9/1/07	Public	Sewer Pump Station 35	800	640	None	No	Construction
2008	6/4/08	Public	202-1/2 16th St	50	0	None	No	Grease
2009	11/23/09	Public	Bolsa Ave and Island View Dr	280	250	None	Yes	Debris
2010	5/4/10	Public	3000 Beverly Manor	120	120	None	No	Debris
2012	8/28/12	Public	Alley behind 330 Main St.	60	60	None	No	Grease
2012	12/20/12	Public	Electric Avenue and Ocean Avenue	100	100	None	No	Contractor error
2013	10/3/13	Public	Rivers End Café	10	0	No	No	Debris

*No spills recorded 2014 -2017

SECTION 10
SSMP PROGRAM AUDITS

10-1 WASTE DISCHARGE REQUIREMENTS

Order No. 2006-0003 requires that:

As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollees compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

10-2 COMPLIANCE

The City performs audits of its SSMP documents approximately every two years. The City completed its latest audit March 2017.

**SECTION 11
COMMUNICATION**

11-1 WASTE DISCHARGE REQUIREMENTS

Order No. 2006-0003 requires that:

The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the City's sanitary sewer system.

11-2 COMPLIANCE

The City provides communication to the interested parties through the means detailed in Table 11-1.

**Table 11-1
Communication Program**

Party	Line of Communication
City of Seal Beach Residents and Businesses	City Council Public Meeting
Food Service Establishments	Quarterly Inspections
	Employee Training DVD distributed to All FSE's
	FOG Control Manual
	Permit Documents
Plumbers and Sewer Contractors	Plans, specifications, and standard details available at the Public Counter
City of Los Alamitos	Official Agreement
Leisure World Retirement Community	
Rossmoor/Los Alamitos Area Sewer District	
Sunset Beach Sanitary District	
City of Huntington Beach	

Communication with public will be increased in the near term by the posting of this SSMP Update on the City's website, along with all related information and documents (contact information for an SSO, list of illicit discharges, OERP document, FOG Manual, etc.). The City also plans to increase communications via water bill inserts, brochures as municipal facilities, public service announcements, newsletters, etc.

**STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2006-0003-DWQ**

**STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
SANITARY SEWER SYSTEMS**

The State Water Resources Control Board, hereinafter referred to as "State Water Board", finds that:

1. All federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California are required to comply with the terms of this Order. Such entities are hereinafter referred to as "Enrollees".
2. Sanitary sewer overflows (SSOs) are overflows from sanitary sewer systems of domestic wastewater, as well as industrial and commercial wastewater, depending on the pattern of land uses in the area served by the sanitary sewer system. SSOs often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. SSOs may cause a public nuisance, particularly when raw untreated wastewater is discharged to areas with high public exposure, such as streets or surface waters used for drinking, fishing, or body contact recreation. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.
3. Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the state. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an SSO. A proactive approach that requires Enrollees to ensure a system-wide operation, maintenance, and management plan is in place will reduce the number and frequency of SSOs within the state. This approach will in turn decrease the risk to human health and the environment caused by SSOs.
4. Major causes of SSOs include: grease blockages, root blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, excessive storm or ground water inflow/infiltration, debris blockages, sanitary sewer system age and construction material failures, lack of proper operation and maintenance, insufficient capacity and contractor-caused damages. Many SSOs are preventable with adequate and appropriate facilities, source control measures and operation and maintenance of the sanitary sewer system.

SEWER SYSTEM MANAGEMENT PLANS

5. To facilitate proper funding and management of sanitary sewer systems, each Enrollee must develop and implement a system-specific Sewer System Management Plan (SSMP). To be effective, SSMPs must include provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. Additionally, an SSMP must contain a spill response plan that establishes standard procedures for immediate response to an SSO in a manner designed to minimize water quality impacts and potential nuisance conditions.
6. Many local public agencies in California have already developed SSMPs and implemented measures to reduce SSOs. These entities can build upon their existing efforts to establish a comprehensive SSMP consistent with this Order. Others, however, still require technical assistance and, in some cases, funding to improve sanitary sewer system operation and maintenance in order to reduce SSOs.
7. SSMP certification by technically qualified and experienced persons can provide a useful and cost-effective means for ensuring that SSMPs are developed and implemented appropriately.
8. It is the State Water Board's intent to gather additional information on the causes and sources of SSOs to augment existing information and to determine the full extent of SSOs and consequent public health and/or environmental impacts occurring in the State.
9. Both uniform SSO reporting and a centralized statewide electronic database are needed to collect information to allow the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) to effectively analyze the extent of SSOs statewide and their potential impacts on beneficial uses and public health. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. 2006-0003-DWQ, are necessary to assure compliance with these waste discharge requirements (WDRs).
10. Information regarding SSOs must be provided to Regional Water Boards and other regulatory agencies in a timely manner and be made available to the public in a complete, concise, and timely fashion.
11. Some Regional Water Boards have issued WDRs or WDRs that serve as National Pollution Discharge Elimination System (NPDES) permits to sanitary sewer system owners/operators within their jurisdictions. This Order establishes minimum requirements to prevent SSOs. Although it is the State Water Board's intent that this Order be the primary regulatory mechanism for sanitary sewer systems statewide, Regional Water Boards may issue more stringent or more

prescriptive WDRs for sanitary sewer systems. Upon issuance or reissuance of a Regional Water Board's WDRs for a system subject to this Order, the Regional Water Board shall coordinate its requirements with stated requirements within this Order, to identify requirements that are more stringent, to remove requirements that are less stringent than this Order, and to provide consistency in reporting.

REGULATORY CONSIDERATIONS

12. California Water Code section 13263 provides that the State Water Board may prescribe general WDRs for a category of discharges if the State Water Board finds or determines that:

- The discharges are produced by the same or similar operations;
- The discharges involve the same or similar types of waste;
- The discharges require the same or similar treatment standards; and
- The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

This Order establishes requirements for a class of operations, facilities, and discharges that are similar throughout the state.

13. The issuance of general WDRs to the Enrollees will:

- a) Reduce the administrative burden of issuing individual WDRs to each Enrollee;
- b) Provide for a unified statewide approach for the reporting and database tracking of SSOs;
- c) Establish consistent and uniform requirements for SSMP development and implementation;
- d) Provide statewide consistency in reporting; and
- e) Facilitate consistent enforcement for violations.

14. The beneficial uses of surface waters that can be impaired by SSOs include, but are not limited to, aquatic life, drinking water supply, body contact and non-contact recreation, and aesthetics. The beneficial uses of ground water that can be impaired include, but are not limited to, drinking water and agricultural supply. Surface and ground waters throughout the state support these uses to varying degrees.

15. The implementation of requirements set forth in this Order will ensure the reasonable protection of past, present, and probable future beneficial uses of water and the prevention of nuisance. The requirements implement the water quality control plans (Basin Plans) for each region and take into account the environmental characteristics of hydrographic units within the state. Additionally, the State Water Board has considered water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect

water quality in the area, costs associated with compliance with these requirements, the need for developing housing within California, and the need to develop and use recycled water.

16. The Federal Clean Water Act largely prohibits any discharge of pollutants from a point source to waters of the United States except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the United States must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. Hence, the unpermitted discharge of wastewater from a sanitary sewer system to waters of the United States is illegal under the Clean Water Act. In addition, many Basin Plans adopted by the Regional Water Boards contain discharge prohibitions that apply to the discharge of untreated or partially treated wastewater. Finally, the California Water Code generally prohibits the discharge of waste to land prior to the filing of any required report of waste discharge and the subsequent issuance of either WDRs or a waiver of WDRs.
17. California Water Code section 13263 requires a water board to, after any necessary hearing, prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. The requirements shall, among other things, take into consideration the need to prevent nuisance.
18. California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
 - a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
 - b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
 - c. Occurs during, or as a result of, the treatment or disposal of wastes.
19. This Order is consistent with State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) in that the Order imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than prescribed in State Water Board or Regional Water Board plans and policies.
20. The action to adopt this General Order is exempt from the California Environmental Quality Act (Public Resources Code §21000 et seq.) because it is an action taken by a regulatory agency to assure the protection of the environment and the regulatory process involves procedures for protection of the environment. (Cal. Code Regs., tit. 14, §15308). In addition, the action to adopt

this Order is exempt from CEQA pursuant to Cal.Code Regs., title 14, §15301 to the extent that it applies to existing sanitary sewer collection systems that constitute “existing facilities” as that term is used in Section 15301, and §15302, to the extent that it results in the repair or replacement of existing systems involving negligible or no expansion of capacity.

21. The Fact Sheet, which is incorporated by reference in the Order, contains supplemental information that was also considered in establishing these requirements.
22. The State Water Board has notified all affected public agencies and all known interested persons of the intent to prescribe general WDRs that require Enrollees to develop SSMPs and to report all SSOs.
23. The State Water Board conducted a public hearing on February 8, 2006, to receive oral and written comments on the draft order. The State Water Board received and considered, at its May 2, 2006, meeting, additional public comments on substantial changes made to the proposed general WDRs following the February 8, 2006, public hearing. The State Water Board has considered all comments pertaining to the proposed general WDRs.

IT IS HEREBY ORDERED, that pursuant to California Water Code section 13263, the Enrollees, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

A. DEFINITIONS

1. **Sanitary sewer overflow (SSO)** - Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:
 - (i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
 - (ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
 - (iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.
2. **Sanitary sewer system** – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

For purposes of this Order, sanitary sewer systems include only those systems owned by public agencies that are comprised of more than one mile of pipes or sewer lines.

3. **Enrollee** - A federal or state agency, municipality, county, district, and other public entity that owns or operates a sanitary sewer system, as defined in the general WDRs, and that has submitted a complete and approved application for coverage under this Order.
4. **SSO Reporting System** – Online spill reporting system that is hosted, controlled, and maintained by the State Water Board. The web address for this site is <http://ciwqs.waterboards.ca.gov>. This online database is maintained on a secure site and is controlled by unique usernames and passwords.
5. **Untreated or partially treated wastewater** – Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.
6. **Satellite collection system** – The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary.
7. **Nuisance** - California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
 - a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
 - b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
 - c. Occurs during, or as a result of, the treatment or disposal of wastes.

B. APPLICATION REQUIREMENTS

1. **Deadlines for Application** – All public agencies that currently own or operate sanitary sewer systems within the State of California must apply for coverage under the general WDRs within six (6) months of the date of adoption of the general WDRs. Additionally, public agencies that acquire or assume responsibility for operating sanitary sewer systems after the date of adoption of this Order must apply for coverage under the general WDRs at least three (3) months prior to operation of those facilities.
2. **Applications under the general WDRs** – In order to apply for coverage pursuant to the general WDRs, a legally authorized representative for each agency must submit a complete application package. Within sixty (60) days of adoption of the general WDRs, State Water Board staff will send specific instructions on how to

apply for coverage under the general WDRs to all known public agencies that own sanitary sewer systems. Agencies that do not receive notice may obtain applications and instructions online on the Water Board's website.

3. Coverage under the general WDRs – Permit coverage will be in effect once a complete application package has been submitted and approved by the State Water Board's Division of Water Quality.

C. PROHIBITIONS

1. Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.
2. Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in California Water Code Section 13050(m) is prohibited.

D. PROVISIONS

1. The Enrollee must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action.
2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDRs. Nothing in the general WDRs shall be:
 - (i) Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
 - (ii) Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
 - (iii) Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
 - (iv) Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.
3. The Enrollee shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO.
4. In the event of an SSO, the Enrollee shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into

flood control channels or waters of the United States by blocking the storm drainage system and by removing the wastewater from the storm drains.

5. All SSOs must be reported in accordance with Section G of the general WDRs.
6. In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:
 - (i) The Enrollee has complied with the requirements of this Order, including requirements for reporting and developing and implementing a SSMP;
 - (ii) The Enrollee can identify the cause or likely cause of the discharge event;
 - (iii) There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives, if the Enrollee does not implement a periodic or continuing process to identify and correct problems.
 - (iv) The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;
 - (v) The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:
 - Proper management, operation and maintenance;
 - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);
 - Preventive maintenance (including cleaning and fats, oils, and grease (FOG) control);
 - Installation of adequate backup equipment; and
 - Inflow and infiltration prevention and control to the extent practicable.
 - (vi) The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.

- (vii) The Enrollee took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.
7. When a sanitary sewer overflow occurs, the Enrollee shall take all feasible steps and necessary remedial actions to 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.

The Enrollee shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:

- (i) Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;
 - (ii) Vacuum truck recovery of sanitary sewer overflows and wash down water;
 - (iii) Cleanup of debris at the overflow site;
 - (iv) System modifications to prevent another SSO at the same location;
 - (v) Adequate sampling to determine the nature and impact of the release; and
 - (vi) Adequate public notification to protect the public from exposure to the SSO.
8. The Enrollee shall properly, manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.
9. The Enrollee shall allocate adequate resources for the operation, maintenance, and repair of its sanitary sewer system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures. These procedures must be in compliance with applicable laws and regulations and comply with generally acceptable accounting practices.
10. The Enrollee shall provide adequate capacity to convey base flows and peak flows, including flows related to wet weather events. Capacity shall meet or exceed the design criteria as defined in the Enrollee's System Evaluation and Capacity Assurance Plan for all parts of the sanitary sewer system owned or operated by the Enrollee.
11. The Enrollee shall develop and implement a written Sewer System Management Plan (SSMP) and make it available to the State and/or Regional Water Board upon request. A copy of this document must be publicly available at the Enrollee's office and/or available on the Internet. This SSMP must be approved by the Enrollee's governing board at a public meeting.

12. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, all engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. Specific elements of the SSMP that require professional evaluation and judgments shall be prepared by or under the direction of appropriately qualified professionals, and shall bear the professional(s)' signature and stamp.
13. The mandatory elements of the SSMP are specified below. However, if the Enrollee believes that any element of this section is not appropriate or applicable to the Enrollee's sanitary sewer system, the SSMP program does not need to address that element. The Enrollee must justify why that element is not applicable. The SSMP must be approved by the deadlines listed in the SSMP Time Schedule below.

Sewer System Management Plan (SSMP)

- (i) **Goal:** The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.
- (ii) **Organization:** The SSMP must identify:
- (a) The name of the responsible or authorized representative as described in Section J of this Order.
 - (b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and
 - (c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).
- (iii) **Legal Authority:** Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:
- (a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);

- (b) Require that sewers and connections be properly designed and constructed;
 - (c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;
 - (d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and
 - (e) Enforce any violation of its sewer ordinances.
- (iv) **Operation and Maintenance Program.** The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:
- (a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;
 - (b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
 - (c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
 - (d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and

- (e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

(v) **Design and Performance Provisions:**

- (a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
- (b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

(vi) **Overflow Emergency Response Plan** - Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

- (a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- (b) A program to ensure an appropriate response to all overflows;
- (c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;
- (d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;
- (e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
- (f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

- (vii) **FOG Control Program:** Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:
- (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
 - (b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
 - (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
 - (d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
 - (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
 - (f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
 - (g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.
- (viii) **System Evaluation and Capacity Assurance Plan:** The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:
- (a) **Evaluation:** Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs

that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;

- (b) **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and
 - (c) **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.
 - (d) **Schedule:** The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D. 14.
- (ix) **Monitoring, Measurement, and Program Modifications:** The Enrollee shall:
- (a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
 - (b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
 - (c) Assess the success of the preventative maintenance program;
 - (d) Update program elements, as appropriate, based on monitoring or performance evaluations; and
 - (e) Identify and illustrate SSO trends, including: frequency, location, and volume.
- (x) **SSMP Program Audits** - As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the

Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

- (xi) **Communication Program** – The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

14. Both the SSMP and the Enrollee's program to implement the SSMP must be certified by the Enrollee to be in compliance with the requirements set forth above and must be presented to the Enrollee's governing board for approval at a public meeting. The Enrollee shall certify that the SSMP, and subparts thereof, are in compliance with the general WDRs within the time frames identified in the time schedule provided in subsection D.15, below.

In order to complete this certification, the Enrollee's authorized representative must complete the certification portion in the Online SSO Database Questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the form to:

State Water Resources Control Board
Division of Water Quality
Attn: SSO Program Manager
P.O. Box 100
Sacramento, CA 95812

The SSMP must be updated every five (5) years, and must include any significant program changes. Re-certification by the governing board of the Enrollee is required in accordance with D.14 when significant updates to the SSMP are made. To complete the re-certification process, the Enrollee shall enter the data in the Online SSO Database and mail the form to the State Water Board, as described above.

15. The Enrollee shall comply with these requirements according to the following schedule. This time schedule does not supersede existing requirements or time schedules associated with other permits or regulatory requirements.

Sewer System Management Plan Time Schedule

<u>Task and Associated Section</u>	Completion Date			
	Population > 100,000	Population between 100,000 and 10,000	Population between 10,000 and 2,500	Population < 2,500
Application for Permit Coverage Section C	6 months after WDRs Adoption			
Reporting Program Section G	6 months after WDRs Adoption ¹			
SSMP Development Plan and Schedule No specific Section	9 months after WDRs Adoption ²	12 months after WDRs Adoption ²	15 months after WDRs Adoption ²	18 months after WDRs Adoption ²
Goals and Organization Structure Section D 13 (i) & (ii)	12 months after WDRs Adoption ²		18 months after WDRs Adoption ²	
Overflow Emergency Response Program Section D 13 (vi)	24 months after WDRs Adoption ²	30 months after WDRs Adoption ²	36 months after WDRs Adoption ²	39 months after WDRs Adoption ²
Legal Authority Section D 13 (iii)				
Operation and Maintenance Program Section D 13 (iv)				
Grease Control Program Section D 13 (vii)	36 months after WDRs Adoption	39 months after WDRs Adoption	48 months after WDRs Adoption	51 months after WDRs Adoption
Design and Performance Section D 13 (v)				
System Evaluation and Capacity Assurance Plan Section D 13 (viii)				
Final SSMP, incorporating all of the SSMP requirements Section D 13				

1. In the event that by July 1, 2006 the Executive Director is able to execute a memorandum of agreement (MOA) with the California Water Environment Association (CWEA) or discharger representatives outlining a strategy and time schedule for CWEA or another entity to provide statewide training on the adopted monitoring program, SSO database electronic reporting, and SSMP development, consistent with this Order, then the schedule of Reporting Program Section G shall be replaced with the following schedule:

Reporting Program Section G	
Regional Boards 4, 8, and 9	8 months after WDRs Adoption
Regional Boards 1, 2, and 3	12 months after WDRs Adoption
Regional Boards 5, 6, and 7	16 months after WDRs Adoption

If this MOU is not executed by July 1, 2006, the reporting program time schedule will remain six (6) months for all regions and agency size categories.

2. In the event that the Executive Director executes the MOA identified in note 1 by July 1, 2006, then the deadline for this task shall be extended by six (6) months. The time schedule identified in the MOA must be consistent with the extended time schedule provided by this note. If the MOA is not executed by July 1, 2006, the six (6) month time extension will not be granted.

E. WDRs and SSMP AVAILABILITY

1. A copy of the general WDRs and the certified SSMP shall be maintained at appropriate locations (such as the Enrollee’s offices, facilities, and/or Internet homepage) and shall be available to sanitary sewer system operating and maintenance personnel at all times.

F. ENTRY AND INSPECTION

1. The Enrollee shall allow the State or Regional Water Boards or their authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the Enrollee’s premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

G. GENERAL MONITORING AND REPORTING REQUIREMENTS

1. The Enrollee shall furnish to the State or Regional Water Board, within a reasonable time, any information that the State or Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Enrollee shall also furnish to the Executive Director of the State Water Board or Executive Officer of the applicable Regional Water Board, upon request, copies of records required to be kept by this Order.
2. The Enrollee shall comply with the attached Monitoring and Reporting Program No. 2006-0003 and future revisions thereto, as specified by the Executive Director. Monitoring results shall be reported at the intervals specified in Monitoring and Reporting Program No. 2006-0003. Unless superseded by a specific enforcement Order for a specific Enrollee, these reporting requirements are intended to replace other mandatory routine written reports associated with SSOs.
3. All Enrollees must obtain SSO Database accounts and receive a "Username" and "Password" by registering through the California Integrated Water Quality System (CIWQS). These accounts will allow controlled and secure entry into the SSO Database. Additionally, within 30 days of receiving an account and prior to recording spills into the SSO Database, all Enrollees must complete the "Collection System Questionnaire", which collects pertinent information regarding a Enrollee's collection system. The "Collection System Questionnaire" must be updated at least every 12 months.
4. Pursuant to Health and Safety Code section 5411.5, any person who, without regard to intent or negligence, causes or permits any untreated wastewater or other waste to be discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State, as soon as that person has knowledge of the discharge, shall immediately notify the local health officer of the discharge. Discharges of untreated or partially treated wastewater to storm drains and drainage channels, whether man-made or natural or concrete-lined, shall be reported as required above.

Any SSO greater than 1,000 gallons discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State shall also be reported to the Office of Emergency Services pursuant to California Water Code section 13271.

H. CHANGE IN OWNERSHIP

1. This Order is not transferable to any person or party, except after notice to the Executive Director. The Enrollee shall submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new Enrollee containing a specific date for the transfer of this Order's responsibility and coverage between the existing Enrollee and the new Enrollee. This agreement shall include an acknowledgement that the existing Enrollee is liable for violations up to the transfer date and that the new Enrollee is liable from the transfer date forward.

I. INCOMPLETE REPORTS

1. If an Enrollee becomes aware that it failed to submit any relevant facts in any report required under this Order, the Enrollee shall promptly submit such facts or information by formally amending the report in the Online SSO Database.

J. REPORT DECLARATION

1. All applications, reports, or information shall be signed and certified as follows:
 - (i) All reports required by this Order and other information required by the State or Regional Water Board shall be signed and certified by a person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official, or by a duly authorized representative of that person, as described in paragraph (ii) of this provision. (For purposes of electronic reporting, an electronic signature and accompanying certification, which is in compliance with the Online SSO database procedures, meet this certification requirement.)
 - (ii) An individual is a duly authorized representative only if:
 - (a) The authorization is made in writing by a person described in paragraph (i) of this provision; and
 - (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.

K. CIVIL MONETARY REMEDIES FOR DISCHARGE VIOLATIONS

1. The California Water Code provides various enforcement options, including civil monetary remedies, for violations of this Order.
2. The California Water Code also provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this Order, or

falsifying any information provided in the technical or monitoring reports is subject to civil monetary penalties.

L. SEVERABILITY

1. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.
2. This order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Enrollee from liability under federal, state or local laws, nor create a vested right for the Enrollee to continue the waste discharge.

CERTIFICATION

The undersigned Clerk to the State Water Board does hereby certify that the foregoing is a full, true, and correct copy of general WDRs duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 2, 2006.

AYE: Tam M. Doduc
Gerald D. Secundy

NO: Arthur G. Baggett

ABSENT: None

ABSTAIN: None



Song Her
Clerk to the Board

STATE OF CALIFORNIA
WATER RESOURCES CONTROL BOARD
ORDER NO. WQ 2013-0058-EXEC

AMENDING MONITORING AND REPORTING PROGRAM
FOR
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR
SANITARY SEWER SYSTEMS

The State of California, Water Resources Control Board (hereafter State Water Board) finds:

1. The State Water Board is authorized to prescribe statewide general Waste Discharge Requirements (WDRs) for categories of discharges that involve the same or similar operations and the same or similar types of waste pursuant to Water Code section 13263(i).
2. Water Code section 13193 *et seq.* requires the Regional Water Quality Control Boards (Regional Water Boards) and the State Water Board (collectively, the Water Boards) to gather Sanitary Sewer Overflow (SSO) information and make this information available to the public, including but not limited to, SSO cause, estimated volume, location, date, time, duration, whether or not the SSO reached or may have reached waters of the state, response and corrective action taken, and an enrollee's contact information for each SSO event. An enrollee is defined as the public entity having legal authority over the operation and maintenance of, or capital improvements to, a sanitary sewer system greater than one mile in length.
3. Water Code section 13271, *et seq.* requires notification to the California Office of Emergency Services (Cal OES), formerly the California Emergency Management Agency, for certain unauthorized discharges, including SSOs.
4. On May 2, 2006, the State Water Board adopted Order 2006-0003-DWQ, "Statewide Waste Discharge Requirements for Sanitary Sewer Systems"¹ (hereafter SSS WDRs) to comply with Water Code section 13193 and to establish the framework for the statewide SSO Reduction Program.
5. Subsection G.2 of the SSS WDRs and the Monitoring and Reporting Program (MRP) provide that the Executive Director may modify the terms of the MRP at any time.
6. On February 20, 2008, the State Water Board Executive Director adopted a revised MRP for the SSS WDRs to rectify early notification deficiencies and ensure that first responders are notified in a timely manner of SSOs discharged into waters of the state.
7. When notified of an SSO that reaches a drainage channel or surface water of the state, Cal OES, pursuant to Water Code section 13271(a)(3), forwards the SSO notification information² to local government agencies and first responders including local public health officials and the applicable Regional Water Board. Receipt of notifications for a single SSO event from both the SSO reporter

¹ Available for download at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf

² Cal OES Hazardous Materials Spill Reports available Online at:

[http://w3.calema.ca.gov/operational/mal haz.nsf/\\$defaultview](http://w3.calema.ca.gov/operational/mal haz.nsf/$defaultview) and <http://w3.calema.ca.gov/operational/mal haz.nsf>

and Cal OES is duplicative. To address this, the SSO notification requirements added by the February 20, 2008 MRP revision are being removed in this MRP revision.

8. In the February 28, 2008 Memorandum of Agreement between the State Water Board and the California Water and Environment Association (CWEA), the State Water Board committed to re-designing the CIWQS³ Online SSO Database to allow "event" based SSO reporting versus the original "location" based reporting. Revisions to this MRP and accompanying changes to the CIWQS Online SSO Database will implement this change by allowing for multiple SSO appearance points to be associated with each SSO event caused by a single asset failure.
9. Based on stakeholder input and Water Board staff experience implementing the SSO Reduction Program, SSO categories have been revised in this MRP. In the prior version of the MRP, SSOs have been categorized as Category 1 or Category 2. This MRP implements changes to SSO categories by adding a Category 3 SSO type. This change will improve data management to further assist Water Board staff with evaluation of high threat and low threat SSOs by placing them in unique categories (i.e., Category 1 and Category 3, respectively). This change will also assist enrollees in identifying SSOs that require Cal OES notification.
10. Based on over six years of implementation of the SSS WDRs, the State Water Board concludes that the February 20, 2008 MRP must be updated to better advance the SSO Reduction Program⁴ objectives, assess compliance, and enforce the requirements of the SSS WDRs.

IT IS HEREBY ORDERED THAT:

Pursuant to the authority delegated by Water Code section 13267(f), Resolution 2002-0104, and Order 2006-0003-DWQ, the MRP for the SSS WDRs (Order 2006-0003-DWQ) is hereby amended as shown in Attachment A and shall be effective on September 9, 2013.

8/6/13

Date



Thomas Howard
Executive Director

³ California Integrated Water Quality System (CIWQS) publicly available at <http://www.waterboards.ca.gov/ciwqs/publicreports.shtml>

⁴ Statewide Sanitary Sewer Overflow Reduction Program information is available at: http://www.waterboards.ca.gov/water_issues/programs/ssor/

ATTACHMENT A

STATE WATER RESOURCES CONTROL BOARD ORDER NO. WQ 2013-0058-EXEC

AMENDING MONITORING AND REPORTING PROGRAM FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" (SSS WDRs). This MRP shall be effective from September 9, 2013 until it is rescinded. The Executive Director may make revisions to this MRP at any time. These revisions may include a reduction or increase in the monitoring and reporting requirements. All site specific records and data developed pursuant to the SSS WDRs and this MRP shall be complete, accurate, and justified by evidence maintained by the enrollee. Failure to comply with this MRP may subject an enrollee to civil liabilities of up to \$5,000 a day per violation pursuant to Water Code section 13350; up to \$1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. The State Water Resources Control Board (State Water Board) reserves the right to take any further enforcement action authorized by law.

A. SUMMARY OF MRP REQUIREMENTS

Table 1 – Spill Categories and Definitions

CATEGORIES	DEFINITIONS [see Section A on page 5 of Order 2006-0003-DWQ, for Sanitary Sewer Overflow (SSO) definition]
CATEGORY 1	Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee's sanitary sewer system failure or flow condition that: <ul style="list-style-type: none">• Reach surface water and/or reach a drainage channel tributary to a surface water; or• Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
CATEGORY 2	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from an enrollee's sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
CATEGORY 3	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.
PRIVATE LATERAL SEWAGE DISCHARGE (PLSD)	Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be voluntarily reported to the California Integrated Water Quality System (CIWQS) Online SSO Database.

Table 2 – Notification, Reporting, Monitoring, and Record Keeping Requirements

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION (see section B of MRP)	<ul style="list-style-type: none"> • Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify the California Office of Emergency Services (Cal OES) and obtain a notification control number. 	Call Cal OES at: (800) 852-7550
REPORTING (see section C of MRP)	<ul style="list-style-type: none"> • Category 1 SSO: Submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. • Category 2 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: Submit certified report within 30 calendar days of the end of month in which SSO the occurred. • SSO Technical Report: Submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • “No Spill” Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: Update and certify every 12 months. 	Enter data into the CIWQS Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by enrollee’s Legally Responsible Official(s).
WATER QUALITY MONITORING (see section D of MRP)	<ul style="list-style-type: none"> • Conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters. 	Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING (see section E of MRP)	<ul style="list-style-type: none"> • SSO event records. • Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO Volume. 	Self-maintained records shall be available during inspections or upon request.

B. NOTIFICATION REQUIREMENTS

Although Regional Water Quality Control Boards (Regional Water Boards) and the State Water Board (collectively, the Water Boards) staff do not have duties as first responders, this MRP is an appropriate mechanism to ensure that the agencies that have first responder duties are notified in a timely manner in order to protect public health and beneficial uses.

1. For any Category 1 SSO greater than or equal to 1,000 gallons that results in a discharge to a surface water or spilled in a location where it probably will be discharged to surface water, either directly or by way of a drainage channel or MS4, the enrollee shall, as soon as possible, but not later than two (2) hours after (A) the enrollee has knowledge of the discharge, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Cal OES and obtain a notification control number.
2. To satisfy notification requirements for each applicable SSO, the enrollee shall provide the information requested by Cal OES before receiving a control number. Spill information requested by Cal OES may include:
 - i. Name of person notifying Cal OES and direct return phone number.
 - ii. Estimated SSO volume discharged (gallons).
 - iii. If ongoing, estimated SSO discharge rate (gallons per minute).
 - iv. SSO Incident Description:
 - a. Brief narrative.
 - b. On-scene point of contact for additional information (name and cell phone number).
 - c. Date and time enrollee became aware of the SSO.
 - d. Name of sanitary sewer system agency causing the SSO.
 - e. SSO cause (if known).
 - v. Indication of whether the SSO has been contained.
 - vi. Indication of whether surface water is impacted.
 - vii. Name of surface water impacted by the SSO, if applicable.
 - viii. Indication of whether a drinking water supply is or may be impacted by the SSO.
 - ix. Any other known SSO impacts.
 - x. SSO incident location (address, city, state, and zip code).
3. Following the initial notification to Cal OES and until such time that an enrollee certifies the SSO report in the CIWQS Online SSO Database, the enrollee shall provide updates to Cal OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial change(s) to known impact(s).
4. PLSDs: The enrollee is strongly encouraged to notify Cal OES of discharges greater than or equal to 1,000 gallons of untreated or partially treated wastewater that result or may result in a discharge to surface water resulting from failures or flow conditions within a privately owned sewer lateral or from other private sewer asset(s) if the enrollee becomes aware of the PLSD.

C. REPORTING REQUIREMENTS

1. **CIWQS Online SSO Database Account:** All enrollees shall obtain a CIWQS Online SSO Database account and receive a “Username” and “Password” by registering through CIWQS. These accounts allow controlled and secure entry into the CIWQS Online SSO Database.
2. **SSO Mandatory Reporting Information:** For reporting purposes, if one SSO event results in multiple appearance points in a sewer system asset, the enrollee shall complete one SSO report in the CIWQS Online SSO Database which includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and provide descriptions of the locations of all other discharge points associated with the SSO event.
3. **SSO Categories**
 - i. **Category 1** – Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee’s sanitary sewer system failure or flow condition that:
 - a. Reach surface water and/or reach a drainage channel tributary to a surface water; or
 - b. Reach a MS4 and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
 - ii. **Category 2** – Discharges of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from an enrollee’s sanitary sewer system failure or flow condition that does not reach a surface water, a drainage channel, or the MS4 unless the entire SSO volume discharged to the storm drain system is fully recovered and disposed of properly.
 - iii. **Category 3** – All other discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system failure or flow condition.
4. **Sanitary Sewer Overflow Reporting to CIWQS - Timeframes**
 - i. **Category 1 and Category 2 SSOs** – All SSOs that meet the above criteria for Category 1 or Category 2 SSOs shall be reported to the CIWQS Online SSO Database:
 - a. Draft reports for Category 1 and Category 2 SSOs shall be submitted to the CIWQS Online SSO Database within three (3) business days of the enrollee becoming aware of the SSO. Minimum information that shall be reported in a draft Category 1 SSO report shall include all information identified in section 8.i.a. below. Minimum information that shall be reported in a Category 2 SSO draft report shall include all information identified in section 8.i.c below.
 - b. A final Category 1 or Category 2 SSO report shall be certified through the CIWQS Online SSO Database within 15 calendar days of the end date of the SSO. Minimum information that shall be certified in the final Category 1 SSO report shall include all information identified in section 8.i.b below. Minimum information that shall be certified in a final Category 2 SSO report shall include all information identified in section 8.i.d below.

- ii. **Category 3 SSOs** – All SSOs that meet the above criteria for Category 3 SSOs shall be reported to the CIWQS Online SSO Database and certified within 30 calendar days after the end of the calendar month in which the SSO occurs (e.g., all Category 3 SSOs occurring in the month of February shall be entered into the database and certified by March 30). Minimum information that shall be certified in a final Category 3 SSO report shall include all information identified in section 8.i.e below.
- iii. **“No Spill” Certification** – If there are no SSOs during the calendar month, the enrollee shall either 1) certify, within 30 calendar days after the end of each calendar month, a “No Spill” certification statement in the CIWQS Online SSO Database certifying that there were no SSOs for the designated month, or 2) certify, quarterly within 30 calendar days after the end of each quarter, “No Spill” certification statements in the CIWQS Online SSO Database certifying that there were no SSOs for each month in the quarter being reported on. For quarterly reporting, the quarters are Q1 - January/ February/ March, Q2 - April/May/June, Q3 - July/August/September, and Q4 - October/November/December.

If there are no SSOs during a calendar month but the enrollee reported a PLSD, the enrollee shall still certify a “No Spill” certification statement for that month.
- iv. **Amended SSO Reports** – The enrollee may update or add additional information to a certified SSO report within 120 calendar days after the SSO end date by amending the report or by adding an attachment to the SSO report in the CIWQS Online SSO Database. SSO reports certified in the CIWQS Online SSO Database prior to the adoption date of this MRP may only be amended up to 120 days after the effective date of this MRP. After 120 days, the enrollee may contact the SSO Program Manager to request to amend an SSO report if the enrollee also submits justification for why the additional information was not available prior to the end of the 120 days.

5. **SSO Technical Report**

The enrollee shall submit an SSO Technical Report in the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall include at a minimum, the following:

- i. **Causes and Circumstances of the SSO:**
 - a. Complete and detailed explanation of how and when the SSO was discovered.
 - b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).
 - c. Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.
 - d. Detailed description of the cause(s) of the SSO.
 - e. Copies of original field crew records used to document the SSO.
 - f. Historical maintenance records for the failure location.
- ii. **Enrollee’s Response to SSO:**
 - a. Chronological narrative description of all actions taken by enrollee to terminate the spill.
 - b. Explanation of how the SSMP Overflow Emergency Response plan was implemented to respond to and mitigate the SSO.

- c. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

iii. **Water Quality Monitoring:**

- a. Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
- b. Detailed location map illustrating all water quality sampling points.

6. **PLSDs**

Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee's sanitary sewer system or from other private sanitary sewer system assets may be voluntarily reported to the CIWQS Online SSO Database.

- i. The enrollee is also encouraged to provide notification to Cal OES per section B above when a PLSD greater than or equal to 1,000 gallons has or may result in a discharge to surface water. For any PLSD greater than or equal to 1,000 gallons regardless of the spill destination, the enrollee is also encouraged to file a spill report as required by Health and Safety Code section 5410 et. seq. and Water Code section 13271, or notify the responsible party that notification and reporting should be completed as specified above and required by State law.
- ii. If a PLSD is recorded in the CIWQS Online SSO Database, the enrollee must identify the sewage discharge as occurring and caused by a private sanitary sewer system asset and should identify a responsible party (other than the enrollee), if known. Certification of PLSD reports by enrollees is not required.

7. **CIWQS Online SSO Database Unavailability**

In the event that the CIWQS Online SSO Database is not available, the enrollee must fax or e-mail all required information to the appropriate Regional Water Board office in accordance with the time schedules identified herein. In such event, the enrollee must also enter all required information into the CIWQS Online SSO Database when the database becomes available.

8. **Mandatory Information to be Included in CIWQS Online SSO Reporting**

All enrollees shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS which can be reached at CIWQS@waterboards.ca.gov or by calling (866) 792-4977, M-F, 8 A.M. to 5 P.M. These accounts will allow controlled and secure entry into the CIWQS Online SSO Database. Additionally, within thirty (30) days of initial enrollment and prior to recording SSOs into the CIWQS Online SSO Database, all enrollees must complete a Collection System Questionnaire (Questionnaire). The Questionnaire shall be updated at least once every 12 months.

i. **SSO Reports**

At a minimum, the following mandatory information shall be reported prior to finalizing and certifying an SSO report for each category of SSO:

- a. **Draft Category 1 SSOs**: At a minimum, the following mandatory information shall be reported for a draft Category 1 SSO report:
1. SSO Contact Information: Name and telephone number of enrollee contact person who can answer specific questions about the SSO being reported.
 2. SSO Location Name.
 3. Location of the overflow event (SSO) by entering GPS coordinates. If a single overflow event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the SSO appearance point explanation field.
 4. Whether or not the SSO reached surface water, a drainage channel, or entered and was discharged from a drainage structure.
 5. Whether or not the SSO reached a municipal separate storm drain system.
 6. Whether or not the total SSO volume that reached a municipal separate storm drain system was fully recovered.
 7. Estimate of the SSO volume, inclusive of all discharge point(s).
 8. Estimate of the SSO volume that reached surface water, a drainage channel, or was not recovered from a storm drain.
 9. Estimate of the SSO volume recovered (if applicable).
 10. Number of SSO appearance point(s).
 11. Description and location of SSO appearance point(s). If a single sanitary sewer system failure results in multiple SSO appearance points, each appearance point must be described.
 12. SSO start date and time.
 13. Date and time the enrollee was notified of, or self-discovered, the SSO.
 14. Estimated operator arrival time.
 15. For spills greater than or equal to 1,000 gallons, the date and time Cal OES was called.
 16. For spills greater than or equal to 1,000 gallons, the Cal OES control number.
- b. **Certified Category 1 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 1 SSO report, in addition to all fields in section 8.i.a :
1. Description of SSO destination(s).
 2. SSO end date and time.
 3. SSO causes (mainline blockage, roots, etc.).
 4. SSO failure point (main, lateral, etc.).
 5. Whether or not the spill was associated with a storm event.
 6. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the overflow; and a schedule of major milestones for those steps.
 7. Description of spill response activities.
 8. Spill response completion date.
 9. Whether or not there is an ongoing investigation, the reasons for the investigation and the expected date of completion.

10. Whether or not a beach closure occurred or may have occurred as a result of the SSO.
 11. Whether or not health warnings were posted as a result of the SSO.
 12. Name of beach(es) closed and/or impacted. If no beach was impacted, NA shall be selected.
 13. Name of surface water(s) impacted.
 14. If water quality samples were collected, identify parameters the water quality samples were analyzed for. If no samples were taken, NA shall be selected.
 15. If water quality samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA shall be selected.
 16. Description of methodology(ies) and type of data relied upon for estimations of the SSO volume discharged and recovered.
 17. SSO Certification: Upon SSO Certification, the CIWQS Online SSO Database will issue a final SSO identification (ID) number.
- c. **Draft Category 2 SSOs**: At a minimum, the following mandatory information shall be reported for a draft Category 2 SSO report:
1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO.
- d. **Certified Category 2 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 2 SSO report:
1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO and Items 1-9, and 17 in section 8.i.b above for Certified Category 1 SSO.
- e. **Certified Category 3 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 3 SSO report:
1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO and Items 1-5, and 17 in section 8.i.b above for Certified Category 1 SSO.

ii. **Reporting SSOs to Other Regulatory Agencies**

These reporting requirements do not preclude an enrollee from reporting SSOs to other regulatory agencies pursuant to state law. In addition, these reporting requirements do not replace other Regional Water Board notification and reporting requirements for SSOs.

iii. **Collection System Questionnaire**

The required Questionnaire (see subsection G of the SSS WDRs) provides the Water Boards with site-specific information related to the enrollee's sanitary sewer system. The enrollee shall complete and certify the Questionnaire at least every 12 months to facilitate program implementation, compliance assessment, and enforcement response.

iv. **SSMP Availability**

The enrollee shall provide the publicly available internet web site address to the CIWQS Online SSO Database where a downloadable copy of the enrollee's approved SSMP, critical supporting documents referenced in the SSMP, and proof of local governing board approval of the SSMP is posted. If all of the SSMP documentation listed in this subsection is not publicly available on the Internet, the enrollee shall comply with the following procedure:

- a. Submit an **electronic** copy of the enrollee's approved SSMP, critical supporting documents referenced in the SSMP, and proof of local governing board approval of the SSMP to the State Water Board, within 30 days of that approval and within 30 days of any subsequent SSMP re-certifications, to the following mailing address:

State Water Resources Control Board
Division of Water Quality
Attn: SSO Program Manager
1001 I Street, 15th Floor, Sacramento, CA 95814

D. WATER QUALITY MONITORING REQUIREMENTS:

To comply with subsection D.7(v) of the SSS WDRs, the enrollee shall develop and implement an SSO Water Quality Monitoring Program to assess impacts from SSOs to surface waters in which 50,000 gallons or greater are spilled to surface waters. The SSO Water Quality Monitoring Program, shall, at a minimum:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.).
3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 48 hours of the enrollee becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents:
 - i. Ammonia
 - ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e-coli.

E. RECORD KEEPING REQUIREMENTS:

The following records shall be maintained by the enrollee for a minimum of five (5) years and shall be made available for review by the Water Boards during an onsite inspection or through an information request:

1. General Records: The enrollee shall maintain records to document compliance with all provisions of the SSS WDRs and this MRP for each sanitary sewer system owned including any required records generated by an enrollee's sanitary sewer system contractor(s).
2. SSO Records: The enrollee shall maintain records for each SSO event, including but not limited to:
 - i. Complaint records documenting how the enrollee responded to all notifications of possible or actual SSOs, both during and after business hours, including complaints that do not

result in SSOs. Each complaint record shall, at a minimum, include the following information:

- a. Date, time, and method of notification.
 - b. Date and time the complainant or informant first noticed the SSO.
 - c. Narrative description of the complaint, including any information the caller can provide regarding whether or not the complainant or informant reporting the potential SSO knows if the SSO has reached surface waters, drainage channels or storm drains.
 - d. Follow-up return contact information for complainant or informant for each complaint received, if not reported anonymously.
 - e. Final resolution of the complaint.
- ii. Records documenting steps and/or remedial actions undertaken by enrollee, using all available information, to comply with section D.7 of the SSS WDRs.
 - iii. Records documenting how all estimate(s) of volume(s) discharged and, if applicable, volume(s) recovered were calculated.
3. Records documenting all changes made to the SSMP since its last certification indicating when a subsection(s) of the SSMP was changed and/or updated and who authorized the change or update. These records shall be attached to the SSMP.
 4. Electronic monitoring records relied upon for documenting SSO events and/or estimating the SSO volume discharged, including, but not limited to records from:
 - i. Supervisory Control and Data Acquisition (SCADA) systems
 - ii. Alarm system(s)
 - iii. Flow monitoring device(s) or other instrument(s) used to estimate wastewater levels, flow rates and/or volumes.

F. CERTIFICATION

1. All information required to be reported into the CIWQS Online SSO Database shall be certified by a person designated as described in subsection J of the SSS WDRs. This designated person is also known as a Legally Responsible Official (LRO). An enrollee may have more than one LRO.
2. Any designated person (i.e. an LRO) shall be registered with the State Water Board to certify reports in accordance with the CIWQS protocols for reporting.
3. Data Submitter (DS): Any enrollee employee or contractor may enter draft data into the CIWQS Online SSO Database on behalf of the enrollee if authorized by the LRO and registered with the State Water Board. However, only LROs may certify reports in CIWQS.
4. The enrollee shall maintain continuous coverage by an LRO. Any change of a registered LRO or DS (e.g., retired staff), including deactivation or a change to the LRO's or DS's contact information, shall be submitted by the enrollee to the State Water Board within 30 days of the change by calling (866) 792-4977 or e-mailing help@ciwqs.waterboards.ca.gov.

5. A registered designated person (i.e., an LRO) shall certify all required reports under penalty of perjury laws of the state as stated in the CIWQS Online SSO Database at the time of certification.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order amended by the Executive Director of the State Water Resources Control Board.

7/30/13

Date



Jeanine Townsend
Clerk to the Board

Type of Spill	Initial Notification Timeframe	Agency to Notify by Phone	Report Timeframe
<p>Category 1 – Discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system failure or flow condition that:</p> <p>A. Reach surface water and/or reach a drainage channel tributary to a surface water; or</p> <p>B. Reach a municipal separate storm sewer system (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the municipal separate storm sewer system is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or ground water infiltration basin (e.g., infiltration pit, percolation pond).</p> <p>Greater than or equal to 1,000 gallons, notify the OES and obtain a notification control number.</p> <p>Category 1 – any volume < 1000 gallons</p>	As soon as practical within 2 hours of becoming aware	Cal OES OCHCA OCPW	<p>- Submit Draft report within 3 business days of becoming aware of the SSO.</p> <p>- Certify within 15 calendar days of SSO end date. SSO Technical Report:</p> <p>- Certify within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater is spilled to surface waters.</p>
	N.A.		
<p>Category 2 – Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from an enrollee’s sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a municipal separate storm sewer system unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.</p>	N.A.		<p>- Submit Draft report within 3 business days of becoming aware of the SSO.</p> <p>- Certify within 15 calendar days of SSO end date.</p>
<p>Category 3 – All other discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system failure or flow condition.</p>	N.A.		<p>- Submit Certified report within 30 calendar days after the end of month in which SSO occurred.</p>
<p>Private lateral – Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee’s sanitary sewer system or from other private sewer assets.</p>	As soon as practical.	Cal OES	<p>- PLSDs that the enrollee becomes aware of may be voluntarily reported to the CIWQS Online SSO Database.</p>
SSO Notification Contacts			
OES (Office of Emergency Services)	(800) 852 - 7550		

Seal Beach Municipal Code

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[Title 1 GENERAL PROVISIONS](#)

Chapter 1.15 ENFORCEMENT

1.15.005 Classification of Offenses.

A. **In General.** No person shall violate any provision, or shall fail to comply with any requirement, of this code. Violations of, and failures to comply with, this code are punishable as set forth in this section. Each person violating any provision, or failing to comply with any requirement, of this code is guilty of a misdemeanor unless such a violation or failure is either (1) designated as an infraction or subsequently prosecuted as an infraction, in which case such person is guilty of an infraction, or (2) prosecuted through the administrative penalty procedure of this chapter. Any violation of, or failure to comply with, any provision of this code may be prosecuted as a misdemeanor, as an infraction or through the administrative penalty procedure in the discretion of the city prosecutor.

B. **Misdemeanor.** Each person convicted of a misdemeanor under the provisions of this code shall be punishable by a fine, imprisonment or both as provided by state law.

C. **Infraction.** Each person convicted of an infraction under the provisions of this code shall be punishable by a fine as provided by state law. Notwithstanding the preceding, any person who violates, or fails to comply with, any requirement of this code 3 times within a 12-month period shall be guilty of a misdemeanor for each subsequent violation of such provision within that period.

D. **Administrative Penalty.** Each person who is assessed with an administrative penalty for a particular offense 3 times within a 12-month period shall be guilty of a misdemeanor for each subsequent offense within that period.

E. **Public Nuisance.** In addition to the penalties provided in this section, any condition caused or permitted to exist in violation of any provision of this code shall constitute a public nuisance and may be abated as such. (Ord. 1515)

1.15.010 Citation Authority.

A. Pursuant to [Penal Code](#) Sections 836.5 and 853.6 et seq., the following city personnel may make arrests and may issue citations for misdemeanor violations of those provisions of this code that such personnel have the duty to enforce:

1. Lifeguards.
2. Code enforcement officer.
3. Designee of the city manager.

B. City personnel designated by the city manager may issue citations for infractions and for administrative penalties for those provisions of this code that such personnel have the duty to enforce. (Ord. 1515)

1.15.015 Administrative Penalty Procedure.

A. **In General.** Administrative penalties shall be set forth in a penalty schedule established by city council resolution and shall be payable directly to the city. Any person who fails to pay an administrative penalty, or to perform in a timely manner the corrective action designated in an administrative citation, is guilty of a misdemeanor. The city manager may dismiss an administrative citation at any time upon a determination that the citation has been erroneously issued. Any deposit submitted in connection with a request for administrative review of a dismissed citation shall be refunded in full.

B. **Definitions.** For purposes of this section, the words and phrases set forth in this subsection shall mean:

___1.___Administrative Citation: a citation containing the following:

- a. The code section violated and a description of the violation including the date, location and approximate time of the violation.
- b. The corrective action required and the deadline for completing such action, if any.

- c. The administrative penalty imposed for the violation and the deadline for paying such penalty.
 - d. The procedure for appealing the citation by requesting administrative review and the deadline for filing an appeal.
 - e. The printed name and signature of the code enforcement officer issuing the citation.
2. Code Enforcement Officer: an officer or employee who is authorized to issue administrative citations.
 3. Legal Interest: an interest in real property that is represented by a deed of trust, quitclaim deed, mortgage, judgment lien, tax or assessment lien, mechanic's lien or other similar instrument that has been recorded with the county recorder.
 4. Responsible Party: a person determined by a code enforcement officer to be responsible for violating any provision, or failing to comply with any requirement, of this code.

C. **Imposition.** An administrative penalty shall be assessed by means of an administrative citation issued by a code enforcement officer. Payment of an administrative penalty shall not excuse the failure to correct the violation, nor shall it bar further enforcement action by the city. If a violation pertains to a building, plumbing, electrical or similar structural or zoning issue, and if the violation does not create an immediate danger to health or safety, then an administrative citation shall not be issued for the violation until the responsible party has been provided notice and has failed to take corrective action after being afforded a reasonable opportunity to do so.

D. **Enforcement.**

1. Service. The code enforcement officer shall successively attempt to issue an administrative citation to the responsible party by means of personal service, mail, posting or publication. Once service has been effected, the code enforcement officer need not undertake any subsequent method of service.

a. Personal Service. If the administrative citation is issued by personal service, then the code enforcement officer shall attempt to obtain the responsible party's signature on the citation. Failure of the responsible party to sign the citation shall not affect the validity of the citation or of subsequent proceedings. Service shall be deemed complete upon delivery of the citation to the responsible party.

b. Mail. To issue an administrative citation by mail, the code enforcement officer shall send the citation by certified mail postage prepaid with return receipt requested. The citation may be sent by regular mail in conjunction with the issuance by certified mail. If a citation sent by certified mail is returned unsigned and a duplicate citation sent by regular mail is not returned due to an incorrect address, then the service shall be deemed effective pursuant to regular mail. Service shall be deemed complete on the date of deposit in the mail.

c. Posting. To issue an administrative citation by posting, the code enforcement officer shall post the citation on a real property parcel that the responsible party has a legal interest in and that is within the city. Service shall be deemed complete on the posting date.

d. Publication. To issue an administrative citation by publication, the code enforcement officer shall cause the citation to be published once a week for 4 successive weeks in a newspaper of general circulation for the city. Service shall be deemed complete on the date of the 4th publication.

2. Satisfaction. Upon receipt of an administrative citation, the responsible party shall satisfy the citation by doing the following on or before the deadlines indicated in the citation: (i) complete the corrective action required, if any, and (ii) pay the administrative penalty. Alternatively, no later than 10 days after service of the citation, the responsible party may appeal the citation by requesting administrative review; provided, however, that if the appeal period expires on a day that city hall is not open for business, then the period shall be extended to the next city business day. An appeal shall be submitted to the city clerk in writing and shall be accompanied by a deposit of the full amount of the administrative penalty or by written proof of financial hardship. Proof of financial hardship shall consist of tax returns, bank statements, salary statements or similar documentation demonstrating that the responsible party is unable to deposit the full amount of the administrative penalty. The city manager shall determine whether the deposit shall be reduced or waived due to financial hardship.

E. **Collection.** If a responsible party fails or refuses to satisfy an administrative citation, then the administrative penalty shall be immediately due the city. Such amount may be collected in any manner allowed by law.

F. **Administrative Review.**

1. **Time and Notice of Hearing.** The administrative review hearing shall be conducted by a hearing officer appointed by the city manager. The hearing officer shall conduct a hearing and take the matter under submission no later than 30 city business days following the timely filing of an appeal, unless the responsible party consents in writing to an extension. At least 10 calendar days prior to such hearing, written notice thereof shall be mailed to the responsible party.

2. **Hearing Procedure.** Administrative review hearings shall be conducted in accordance with procedures established by the hearing officer. All parties involved shall have a right to: (i) offer testimonial and documentary evidence bearing on the issues; (ii) be represented by counsel; and (iii) confront and cross-examine witnesses. The hearing officer shall not be bound by formal rules of evidence and may receive, under penalty of perjury, any relevant evidence that is the sort of evidence upon which reasonable persons are accustomed to rely in the conduct of serious affairs. A hearing may be continued for a reasonable time for the convenience of a party or a witness. An administrative citation is prima facie proof of the violation and the code enforcement officer who issued the citation is not required to participate in the hearing.

3. **Burden of Proof.** The city bears the burden of proof of establishing, by preponderance of the evidence, the occurrence of the violation.

4. **Failure to Attend Hearing.** If a responsible party fails to attend an administrative review hearing that such person has requested, and also fails to send a representative to the hearing, then the hearing officer shall dismiss the appeal and the administrative penalty shall be deemed upheld. The hearing officer shall notify the responsible party in writing within 10 days of the dismissal of an appeal due to non-attendance.

5. **Decision.** The hearing officer may uphold, overturn or modify the administrative penalty and any corrective action imposed by an administrative citation. The hearing officer shall, within 45 city business days of the appeal filing date, render a written decision supported by findings. The time period set forth in this section shall not be extended except upon written consent of the responsible party. Notice of the decision and a copy thereof shall be mailed to the responsible party. The decision of the hearing officer shall be final unless council review is ordered.

6. **Judicial Review.** A responsible party may seek judicial review of a final city decision regarding an administrative penalty in accordance with [Government Code](#) Section 53069.4. (Ord. 1515)

1.15.020 Aiding and Abetting.

Whenever any act or omission is prohibited by this code, such prohibition shall be deemed to prohibit the aiding, abetting, causing, concealing or permitting of such act or omission. Any person who shall aid, abet, cause, conceal or permit such act or omission shall be guilty of a violation of this code and shall be punishable in accordance with the punishment prescribed for such act or omission. (Ord. 1515)

1.15.025 Continuing Violations.

Each person shall be guilty of a separate offense for every day any violation of this code, or any failure to comply with a requirement of this code, is committed, continued or permitted and shall be punishable accordingly. (Ord. 1515)

1.15.030 Recovery of Criminal Justice Administration Fees.

In any case in which a person is arrested for a criminal offense, a criminal justice administrative fee is imposed by the county for the arrest, and the person is convicted of a criminal offense related to the arrest, the convicted person shall reimburse the city for the entire amount of such fee. (Ord. 1515)

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Seal Beach Municipal Code

Title 9 PUBLIC PROPERTY, PUBLIC WORKS, AND BUILDING REGULATIONS

Chapter 9.25 FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

9.25.005 Purpose, Policy and Findings.

- A. The Porter-Cologne Water Quality Act (California Water Code Sections 13000, et seq.) provides for the regulation and reduction of pollutants discharged into the waters of California.
- B. The City of Seal Beach is a permittee under the “General Waste Discharge Requirements for Sewer Collection Agencies in Orange County Within the Santa Ana Region,” (Order No. R8-2002-0014), dated April 26, 2002 [“Sewer WDRs”] issued by the California Regional Water Quality Control Board-Santa Ana Region (“Santa Ana RWQCB”), and, as a permittee under the Sewer WDRs, the city is required to adopt chapters and implement procedures to reduce the amount of fats, oils and grease (“FOG”) discharged into the city’s sanitary sewer collection system.
- C. Section C.12(iii) of the Sewer WDRs requires the city to demonstrate that it possesses the legal authority necessary to control discharges of FOG to and from those portions of the city’s sanitary sewer collection system over which it has jurisdiction, so as to comply with the Sewer WDRs.
- D. FSEs or “food facilities,” as defined in California Uniform Retail Food Facilities Law (“CURFFL”), Division 104 (Environmental Health), Part 7 (Retail Food), Chapter 4, Articles 1-20 of the California Health & Safety Code (“FSEs”), produce FOG as a byproduct of their operations, which, if not properly managed and disposed, create the potential for blockage of sanitary sewer lines, and which can result in damage to both public and private property, and sewage overflows that cause health issues and have the potential to pollute beaches and water courses in the city, as well as in other portions of Orange County.
- E. Studies in Orange County have concluded that FOG is one of the primary causes of sanitary sewer blockages. Based on information collected by the Santa Ana RWQCB, sanitary sewer system overflows (“SSOs”) within Orange County from sewer collection systems have caused numerous beach closures, and the most prevalent cause of the SSOs is FOG accumulation in the small to medium sewer lines serving FSEs.
- F. The current edition of the Uniform Plumbing Code requires FSEs that have the potential to produce a significant amount of FOG to have grease control devices. Many FSEs, such as restaurants within the city do not have grease control devices. These commercial FSEs have the potential to require the city and sanitation districts to perform additional preventive maintenance on sewer lines that service these facilities, as well as respond to and cleanup blockages and sewage overflows caused by improper FOG disposal practices and grease control device maintenance.
- G. The purpose of this chapter is to facilitate the maximum beneficial public use of the city’s sanitary sewer collection system while preventing blockages of sewer lines resulting from discharges of FOG to the system, and to specify appropriate FOG discharge requirements for FSEs discharging into the city’s sewer system.
- H. This chapter shall be interpreted in accordance with the definitions set forth in Section 9.25.010 of this chapter. To the extent a term is not specifically defined in this chapter, such term will be defined according to the definition set forth in Section 9.20.005 of Chapter 9.20 of Title 9 of this code. The provisions of this chapter shall apply to the direct or indirect discharge of all wastewater or waste containing FOG into city’s sanitary sewer collection system.

I. In order to manage and control, in a cost-effective manner, the discharge of FOG into the city's sanitary sewer collection system to the maximum extent practicable, the adoption of reasonable regulations, as set forth herein, is essential and it is the intent of this section to establish regulations for the disposal of FOG and other insoluble waste discharges from FSEs into the city's sewer system.

J. To comply with federal, state, and local policies and to allow the city to meet applicable standards, provisions are made in this chapter for the regulation of wastewater or waste containing FOG discharges to the sewer facilities.

K. Certain FSEs within the boundaries of the city do not discharge wastewater into the city's sewer system and facilities and discharge into sewer systems and facilities operated by regulatory agencies and sanitation districts other than the city. Such FSEs will be permitted and regulated by regulatory agencies other than the city. In order to avoid the possibility of overlapping and potentially contradictory regulation of such FSEs, this chapter is not intended to apply to FSEs or other dischargers which do not discharge into the city's sanitary sewer system.

L. This chapter establishes quantity and quality standards on all wastewater and/or waste discharges containing FOG, which may alone or collectively cause or contribute to FOG accumulation in the sewer facilities causing or potentially causing or contributing to the occurrence of SSOs. (Ord. 1526)

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9.25.015 FOG Discharge Requirement.

No FSE ("FSE") shall discharge or cause to be discharged into the sewer system FOG that exceeds a concentration level adopted by a regulatory agency or that may accumulate and/or cause or contribute to blockages in the sewer system or at the sewer system lateral which connects the FSE to the sewer system. (Ord. 1526)

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9.25.020 Prohibitions.

The following prohibitions shall apply to all FSEs:

- A. No person shall discharge, or cause to be discharged any wastewater from FSEs directly or indirectly into the sewer system without first obtaining a FOG wastewater discharge permit pursuant to this chapter.
- B. Discharge of any waste, including FOG and solid materials removed from the grease control device to the sewer system, is prohibited.
- C. The discharge of any waste or FOG to the sewer system which fails to comply with the FOG discharge manual is prohibited.
- D. The discharge of any waste or FOG to the sewer system in a manner which either violates the Sewer WDRs or causes or contributes to condition which fails to comply with any of the provisions of the Sewer WDRs is prohibited. (Ord. 1526)

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9.25.030 Best Management Practices Required.

- A. All FSEs shall implement best management practices in its operation to minimize the discharge of FOG to the sewer system.
- B. All FSEs must implement and demonstrate compliance with best management practices (BMP) requirements as specified in the city's FOG discharge manual. Detailed requirements for best management practices are specified in the FOG discharge manual and may include kitchen practices and employee training that are essential in minimizing FOG discharges. (Ord. 1526)

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9.25.045 Multiple FSEs at Commercial Properties.

For properties at which multiple FSEs are operated on a single parcel, each FSE operator shall be individually and separately responsible for installation and maintenance of the grease interceptor serving its FSEs and for compliance with this chapter. Furthermore, owners of commercial properties at which multiple FSEs that are operated on a single parcel shall be responsible for ensuring compliance by each FSE on the parcel. Such operators and/or property owner can comply with this chapter by installing and maintaining a grease interceptor or grease interceptors serving multiple FSEs upon approval by the director on such terms and conditions that the director may establish in his or her sole discretion. (Ord. 1526)

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9.25.055 Sewer System Overflows, Public Nuisance, Abatement Orders and Cleanup Costs.

Notwithstanding any waiver of grease interceptor requirements under this chapter, FSEs determined by the director to have contributed to a sewer blockage, SSOs or any sewer system interferences resulting from the discharge of wastewater or waste containing FOG, may be ordered by the director to immediately install and maintain a grease interceptor, and may be subject to a plan determined by the director to abate the nuisance and prevent any future health hazards created by sewer line failures and blockages, SSOs or any other sewer system interferences. SSOs may cause threat and injury to public health, safety, and welfare of life and property and are hereby declared public nuisances. Furthermore, sewer lateral failures and SSOs caused by FSEs alone or collectively are the responsibility of the private property owner or FSE, and individual(s) as a responsible officer or owner of the FSE. If the city must act immediately to contain and clean up an SSO caused by blockage of a private or public sewer lateral or serving a FSE, or at the request of the property owner or operator of the FSE, or because of the failure of the property owner or FSE to abate the condition causing immediate threat of injury to the health, safety, welfare, or property of the public, the city's costs for such abatement may be entirely borne by the property owner or operator of the FSE, and individual(s) as a responsible officer or owner of the FSE(s) and may constitute a debt to the city and become due and immediately payable upon the city's request for reimbursement of such costs. (Ord. 1526)

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9.25.105 Grease Interceptor Requirements.

- A. Grease interceptors shall be maintained in efficient operating condition in accordance with the FOG discharge manual.
- B. Grease interceptors must be cleaned, maintained, and FOG must be removed from grease interceptors at regular intervals.
- C. FOG removed from grease interceptors shall be waste hauled periodically as part of the operation and maintenance requirements for grease interceptors and disposed of in a proper manner and at regular intervals. (Ord. 1526)

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Chapter 9.25 FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

9.25.110 Monitoring and Reporting Conditions.

A. Monitoring for Compliance with FOG Wastewater Discharge Conditions and Reporting Requirements.

1. The director may require periodic reporting of the status of implementation of best management practices, in accordance with the FOG control program and the FOG discharge manual.
2. The director may require visual and other monitoring at the sole expense of the permittee to observe the actual conditions of the FSE's sewer lateral and sewer lines downstream.
3. The director may require reports for self-monitoring of wastewater constituents and FOG characteristics of the permittee needed for determining compliance with any conditions or requirements as specified in the FOG wastewater discharge permit or this chapter. Monitoring reports of the analyses of wastewater constituents and FOG characteristics shall be in a manner and form approved by the director and shall be submitted upon request of the director.
4. Failure by the permittee to perform any required monitoring, or to submit monitoring reports required by the director constitutes a violation of this chapter and shall be cause for the city to initiate all necessary tasks and analyses to determine the wastewater constituents and FOG characteristics for compliance with any conditions and requirements specified in the FOG wastewater discharge permit or in this chapter.
5. The permittee shall be responsible for any and all expenses of the city in undertaking such monitoring analyses and preparation of reports.
6. Other reports may be required such as compliance schedule progress reports, FOG control monitoring reports, and any other reports deemed reasonably appropriate by the director to ensure compliance with this chapter.

B. Record Keeping Requirements. The permittee shall be required to keep all documents identified by the director relating to its compliance with this chapter, including manifests, receipts and invoices of all cleaning, maintenance, grease removal of/from the grease control device, disposal carrier and disposal site location for no less than 2 years. The permittee shall, upon request, make the manifests, receipts and invoices available to any city representative, or inspector.

C. Falsifying Information or Tampering with Process. It shall be unlawful to make any false statement, representation, record, report, plan or other document that is filed with the city, or to tamper with or knowingly render inoperable any grease control device, monitoring device or method or access point required under this chapter. (Ord. 1526)

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9.25.115 Inspection and Sampling Conditions.

A. The director may inspect or order the inspection and sample the wastewater discharges of any FSE to ascertain whether the intent of this chapter is being met and the permittee is complying with all requirements. The permittee shall allow the city access to the FSE premises, during normal business hours, for purposes of inspecting the FSE's grease control devices or interceptor, reviewing the manifests, receipts and invoices relating to the cleaning, maintenance and inspection of the grease control devices or interceptor.

B. The director shall have the right to place or order the placement on the FSE's property or other locations as determined by the director, such devices as are necessary to conduct sampling or metering operations. Where a FSE has security measures in force, the permittee shall make necessary arrangements so that representatives of the city shall be permitted to enter without delay for the purpose of performing their specific responsibilities.

C. For the director to determine the wastewater characteristics of the discharger for purposes of determining the annual use charge and for compliance with permit requirements, the permittee shall make available for inspection and copying by the city all notices, monitoring reports, waste manifests, and records including, but not limited to, those related to wastewater generation, and wastewater disposal without restriction but subject to the confidentiality provision set forth in this chapter. All such records shall be kept by the permittee a minimum of 2 years. (Ord. 1526)

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Seal Beach Municipal Code

Title 9 PUBLIC PROPERTY, PUBLIC WORKS, AND BUILDING REGULATIONS

Chapter 9.25 FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

9.25.120 Right of Entry.

Persons or occupants of premises where wastewater is created or discharged shall allow the director, or city representatives, reasonable access to all parts of the FSE and all wastewater generating and disposal facilities for the purposes of inspection and sampling during all times the discharger's facility is open, operating, or any other reasonable time. No person shall interfere with, delay, resist or refuse entrance to city representatives attempting to inspect any FSE or facility involved directly or indirectly with a discharge of wastewater to the city's sewer system. (Ord. 1526)

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Title 9 PUBLIC PROPERTY, PUBLIC WORKS, AND BUILDING REGULATIONS

Chapter 9.25 FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

9.25.130 Enforcement.

A. The city council finds that, in order for the city to comply with the laws, regulations, and rules imposed upon it by regulatory agencies and to ensure that the city's sewer facilities are protected and are able to operate with the highest degree of efficiency, and to protect the public health and environment, specific enforcement provisions must be adopted to govern the discharges to the city's sewer system by FSEs.

B. To ensure that all interested parties are afforded due process of law and that violations are resolved as soon as possible, a permittee, or applicant for a permit may appeal any determination made by the director, including but not limited to a denial of a discharge permit, a notice of violation; permit suspension or revocation; or a compliance schedule agreement (CSA), pursuant to the procedures set forth in Section 9.25.185.

C. The city, at its discretion, may utilize any one, combination, or all enforcement remedies provided in this chapter in response to any FOG wastewater discharge permit or chapter violations. (Ord. 1526)

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Chapter 9.25 FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

9.25.135 Violations.

- A. The owner and operator of a FSE or permittee shall be in violation of this chapter if such owner or operator or permittee:
1. Fails to install an approved grease control device as required by this chapter; or
 2. Makes any false statement, representation, record, report, plan or other document that is filed with the city; or
 3. Tampers with or knowingly renders inoperable any grease control device required under this chapter; or
 4. Fails to clean, maintain or remove grease from a grease control device within the required time for such cleaning, maintenance or grease removal; or
 5. Fails to keep up-to-date and accurate records of all cleaning, maintenance, and grease removal and upon request to make those records available to any city code enforcement representative, or his or her designee, any representative of a local sanitation agency that has jurisdiction over the sanitary sewer system that services the food facility, or any authorized inspector that has jurisdiction under the water quality chapter; or
 6. Refuses a city code enforcement representative, or his or her designee, a representative of a local sanitary sewer agency that has jurisdiction over the sanitary sewer system that services the food facility, or any authorized inspector, reasonable access to the food facility for the purposes of inspecting, monitoring, or reviewing the grease control device manifests, receipts and invoices of all cleaning, maintenance, grease removal of/from the grease control device, and/or to inspect the grease control device; or
 7. Disposes of, or knowingly allows or directs FOG to be disposed of, in an unlawful manner; or
 8. Fails to remove all food grinders located in the food facility by the date specified by this chapter; or
 9. Introduces additives into a wastewater system for the purposes of emulsifying FOG without the written, specific authorization from the sanitary sewer agency that has jurisdiction of the sanitary sewer system that services the food facility; or
 10. Fails to pay the grease disposal mitigation fee as specified in this chapter when due; or
 11. Fails to comply with the FOG manual; or
 12. Otherwise fails to comply with the provisions of this chapter or any permit issued by the city under this chapter.
- B. Violations under this section shall be subject to the procedures, penalties and remedies set out in this chapter and Chapter 1.15. All costs for the investigations, enforcement actions, and ultimate corrections of violations under this section, incurred by the city shall be reimbursed by the owner/operator of the FSE. (Ord. 1526)

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Chapter 9.25 FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

9.25.155 Damages to Facilities or Interruption of Normal Operations.

A. Any person who discharges any waste, including but not limited to those listed under 40 CFR Section 403.5, which causes or contributes to any sewer blockage, SSOs, obstruction, interference, damage, or any other impairment to the city's sewer facilities or to the operation of those facilities shall be liable for all costs required to clean or repair the facilities together with expenses incurred by the city to resume normal operations. A service charge of 25% of city's costs shall be added to the costs and charges to reimburse the city for miscellaneous overhead, including administrative personnel and record keeping. The total amount shall be payable within 45 days of invoicing by the city.

B. Any person who discharges a waste which causes or contributes to the city violating its discharge requirements established by any regulatory agency incurring additional expenses or suffering losses or damage to the facilities, shall be liable for any costs or expenses incurred by the city, including regulatory fines, penalties, and assessments made by other agencies or a court. (Ord. 1526)

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Title 9 PUBLIC PROPERTY, PUBLIC WORKS, AND BUILDING REGULATIONS

Chapter 9.30 SEWERAGE

9.30.010 Sewer Lateral Maintenance.

Each sewer service lateral from the building to the collector sewer shall be maintained in a safe and sanitary condition by the owner of the property served. For purposes of this section, the term "sewer service lateral" shall mean a pipe that carries sewage from the plumbing system of buildings to a collector sewer located in the public right-of-way and that has no other sewer tributary. (Ord. 1515)

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Seal Beach Municipal Code

Title 9 PUBLIC PROPERTY, PUBLIC WORKS, AND BUILDING REGULATIONS

Chapter 9.30 SEWERAGE

9.30.025 Orange County Sanitation District.

No person shall fail to comply with the provisions of Ordinance No. OCSD-01 of the Orange County Sanitation District. (Ord. 1515)

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[Title 10 SUBDIVISIONS](#)

Chapter 10.15 DESIGN AND IMPROVEMENT REQUIREMENTS

10.15.005 Design and Improvement Standards.

- A. **Required Improvements.** Subdividers shall provide all improvements required by this chapter and any additional improvements required by conditions of approval.
- B. **Applicable Design Standards, Timing of Installation.** Subdividers shall construct all improvements according to standards approved by the city engineer. No final or parcel map shall be presented to the city for approval until the subdivider either completes the required improvements, or enters into an agreement with the city for the work.
- C. **Subdivision Improvement Standards: Conditions of Tentative Map Approval.** The city shall list all improvement and dedication requirements as conditions of approval for each approved tentative map. The design, construction or installation of all subdivision improvements shall comply with the requirements of the city engineer.
- D. **Extent of Improvements Required, 4 or Fewer Parcels.** Improvements required for subdivisions of 4 or fewer parcels shall be limited to the dedication of rights-of-way, easements, and the construction of reasonable offsite and onsite improvements for the parcels being created.
- E. **Oversizing of Improvements.** At the discretion of the city, improvements required to be installed by the subdivider for the benefit of the subdivision may also be required to provide supplemental size, capacity, number, or length for the benefit of property not within the subdivision, and may be required to be dedicated to the city, in compliance with Map Act Sections 66485 et seq.
- F. **Exceptions.**
1. **Processing of Application.** A subdivider may seek an exception by submitting an application and filing fee established by resolution. The application shall include a description of each standard for which an exception is requested and the basis for the request. A request may be filed concurrently with the tentative map application, or after the tentative map has been approved. The approval of an exception shall not constitute approval of the tentative map and shall not extend any time limits for the expiration of the map.
 2. **Council Action and Findings.** The council may approve, conditionally approve or deny a request for an exception, provided it makes all of the following findings:
 - a. The exception is not used to waive or modify any Map Act requirements;
 - b. There are exceptional or extraordinary circumstances or conditions, including size, shape, topography, location, or surroundings, that warrant the exception;
 - c. The exceptional or extraordinary circumstances or conditions are not due to any action of the subdivider;
 - d. The exception is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the vicinity and zoning district and denied to the proposed subdivision;
 - e. The exception will not be materially detrimental to the public welfare nor injurious to surrounding property or improvements; and
 - f. The exception will not render the subdivision inconsistent with the general plan or any applicable specific plan.
 3. In granting an exception, the council shall secure substantially the same objectives of the regulations for which the exception is requested and shall impose whatever conditions it deems necessary to protect the public health, safety, general welfare and convenience, and to mitigate any environmental impacts in compliance with CEQA. (Ord. 1567)

10.15.010 Access, Circulation, Streets.

- A. **General Access and Circulation Requirements.** Subdividers shall provide a comprehensive street system, designed and constructed to provide adequate access from each new parcel to a City street in compliance with the city's improvement standards, the zoning ordinance and the circulation element of the general plan.
1. Streets shall be designed for safe vehicular operation at a specified design speed.
 2. Public streets shall be required if:
 - a. The proposed street is shown as an arterial or collector street in the circulation element of the general plan or any specific or precise plan.
 - b. The proposed street will be used by the general public as a through access route.
 - c. Necessary for special needs including bus routes, public service access, bicycle routes and pedestrian access.
 - d. Necessary to assure fire safety.
 3. Private streets may be allowed pursuant to subsection F of this section.
- B. **Alternative Standards.** The city may consider and approve proposed access and street design solutions that differ from the provisions of this section and the city's improvement standards where deemed necessary to properly address the characteristics of adjacent land uses and/or anticipated traffic volumes, or to maintain neighborhood character. The use of alternative standards may be authorized through the exception procedure in Section 10.15.005.F: Exceptions.
- C. **Access to Subdivision.** The subdivider shall provide access to a city street in:
1. The area of the subdivision abutting a city street, where the length of the subdivision along the street, the street right-of-way, and the width of the right-of-way will accommodate the construction of all required road improvements; or
 2. The area of the subdivision being connected to a city street by a nonexclusive right-of-way easement for street, utility, and appurtenant drainage facilities purposes, where the easement is:
 - a. Offered for dedication;
 - b. Unencumbered by any senior rights that might serve to restrict its proposed use; and
 - c. Of a width and location to accommodate the construction of all improvements required by this section, the city's improvement standards and conditions of approval.
- D. **Access to New Parcels.** Subdividers shall design a proposed subdivision as follows:
1. City Street Access. Each lot shall be located on an existing city street or a new city street designed and improved in compliance with subsection C of this section, or to a private street if allowed by subsection F.
 2. No Direct Access to State Highway or Major Arterial. There shall be no direct access to a state highway or a major arterial. The subdivider shall dedicate reservation strips to the state or city, as appropriate, where required to control access over certain lot lines over the ends of street stubs.
 3. Frontage Roads. The city may require the subdivider to dedicate and improve a service or frontage road separate from the arterial or highway for lots proposed to front on a major arterial or state highway.
 4. Alleys. Proposed alleys shall be subject to the review and approval of the planning commission.
- E. **Design and Improvement of Proposed Streets.** Proposed streets shall comply with the city's improvement standards and be located and designed as follows:
1. Alignment, Intersections, Curves. Streets shall be:
 - a. Consistent with the circulation element of the general plan and the zoning code;
 - b. Aligned with existing adjacent streets by continuation of their centerlines, or by adjustments by curves; and
 - c. Located so that all streets intersect at an angle as near to 90 degrees as feasible. The centerline curve radii of all proposed streets shall be subject to approval by the city engineer.
 2. Right-of-Way and Surfaced Width. The width of the right-of-way and improved surface of streets shall be as provided by Chapter 10.40: Streetscape, except where other standards are approved by the council.

3. **Corners.** All block corners and “T” alley intersections shall be rounded or cut off as approved by the city engineer.
4. **Access to Unsubdivided Property.** The city may require that proposed streets be extended to the boundary of abutting vacant land designated by the general plan for future subdivision and development to provide access to the future development.
5. **Improvements to Existing Streets.** The city may require dedication of additional right-of-way and/or improvements in and to existing streets that provide access to, pass through, or is contiguous with a proposed subdivision, if it determines that the proposed subdivision will create the need for the improvements.
6. **Curbs and Sidewalks.** Subdividers shall construct concrete curbs and sidewalks upon all streets in compliance with the city’s improvement standards and specifications unless specifically waived in the conditions of approval. The city has the discretion to designate the location of sidewalks.

F. Private Streets. The planning commission may approve private streets if it determines that a private street system will adequately serve the proposed subdivision, will not be a substantial detriment to adjoining properties and will not disrupt or prevent the establishment of an orderly circulation system in the vicinity of the subdivision. All private streets approved by the commission shall be shown on the subdivision map.

1. **Maintenance Requirements.** An owners association or other organization shall maintain and own all private streets and right-of-ways, through a recorded instrument satisfactory to the city engineer and city attorney.
2. **Design and Improvement Standards.** Subdividers shall design and improve private streets in compliance with subsections B and C of this section.
3. **Security and Conditions.** The city may require any guarantees and conditions it deems necessary to carry out the provisions of this title pertaining to private streets.
4. **Offer of Dedication.** The city may require that proposed private streets be subject to irrevocable offers of dedication to the city.

G. Alternative Circulation Systems. Subdividers shall provide rights-of-way for pedestrian paths, bikeways and multiple use trails consistent with the circulation element of the general plan, other applicable general plan provisions, or any specific or precise plan. (Ord. 1567)

10.15.015 Energy Conservation.

The subdivider shall provide, to the extent feasible, for future passive or natural heating or cooling opportunities pursuant to Map Act Section 66473.1. (Ord. 1567)

10.15.020 Fire Hydrants.

The subdivider shall install fire hydrants at locations required by the Orange County Fire Authority in accordance with applicable standards. (Ord. 1567)

10.15.025 Grading, Erosion and Sediment Control.

Subdividers shall incorporate appropriate erosion and sediment control measures as required by the city engineer. (Ord. 1567)

10.15.030 Landscaping.

- A. Landscaping Requirements.** Landscaping shall comply with Chapter 10.40: Streetscape, the zoning code, Chapter 11.4.30: Landscaping and Buffer Yards, and these requirements.
- B. Deferral of Landscape Installation.** The installation of required landscaping may be deferred until the development of the subdivided lots through the provisions of Section 10.55.015: Improvement Agreements and Security, provided that interim erosion and sediment control measures are installed in compliance with Section 10.15.025: Grading, Erosion and Sediment Control. (Ord. 1567)

10.15.035 Monuments.

The subdivider shall install monuments in compliance with Chapter 10.60: Surveys and Monuments. (Ord. 1567)

10.15.040 Parcel Design.

The size, shape and configuration of proposed parcels shall comply with this section, the zoning code, any applicable specific or precise plan requirement, and any other municipal code provision applicable to the proposed subdivision.

- A. **Parcel Area.** The minimum area for proposed parcels shall be as required by the zoning code, except as otherwise provided by this section.
- B. **Minimum Lot Area Requirements for Common Interest Projects.** The minimum lot area requirements of the zoning code shall not apply to the individual units in condominium developments, condominium conversions, planned developments, townhouses or zero lot-line projects, but shall apply to the creation of the original parcel or parcels that are the location of the common interest development.
- C. **Dimensions.** The dimensions of proposed parcels shall comply with the applicable provisions of the zoning code.
- D. **Driveway Standards.** Subdividers shall design proposed parcels to accommodate driveways designed in compliance with Title 11: Zoning, Section 11.4.20.030: Driveways. (Ord. 1567)

10.15.045 Public Utilities and Utility Easements.

Public utility connections, including electricity, gas, water, sewer, storm drain, and telecommunications services shall be designed and installed for each parcel.

- A. **Underground Utilities Required.**
 1. **Required Undergrounding.** All utility distribution facilities (including electric, telecommunications and cable television lines) designed to serve a subdivision shall be installed underground. Equipment appurtenant to underground facilities, including transformers, terminal boxes, meter cabinets, and concealed ducts, shall also be underground, unless the city engineer approves an above-ground location. The subdivider is responsible for complying with the requirements of this section and shall make the necessary arrangements with the affected utility companies for facility installation. The city may waive the requirements of this section if topographical, soil, or other conditions make underground installation infeasible.
 2. **Location of Installation.** Underground utility lines may be installed within street rights-of-way or on a lot line. The city engineer may determine the location and method of installation of lines installed within street rights-of-way.
- B. **Utility Easements.**
 1. **Minimum Width.** The city engineer shall determine the minimum width of easements for public or private utilities, sanitary sewers, or water distribution systems. The city engineer may consider the recommendation of the applicable utility company for its utilities.
 2. **Overhead Lines.** If the city approves overhead utility lines, easements shall be located at the rear of the lot, or, where necessary, on or adjacent to the property line of the lot. Where practical, the poles supporting overhead lines shall not be installed within any street, alley, or easement designated for drainage purposes.
- C. **Timing of Installation.** The subdivider shall install underground utilities, water lines, sanitary sewers, and storm drains proposed to be located in the street before the street is surfaced. Connections to all underground utilities, water lines, and sanitary sewers shall be laid to sufficient lengths to avoid disturbing street improvements when service is connected. (Ord. 1567)

10.15.050 Sewage Disposal.

The subdivider shall provide a connection from each parcel to the Orange County Sanitation District's sewage collection, treatment, and disposal system, in compliance with the district's improvement standards and specifications. (Ord. 1567)

10.15.055 Street Lighting.

The subdivider shall provide street lighting facilities designed and constructed in compliance with the city's improvement standards and specifications. (Ord. 1567)

10.15.060 Street Names and Signs.

- A. **Street Name Requirements.** The city shall name all streets within a proposed subdivision. Existing street names within the same area shall not be duplicated unless the proposed street is an extension of that street.
- B. **Street Name Signs.** The subdivider shall provide a minimum of two street name signs in compliance with the city's improvement standards and specifications at each street intersection. The signs shall be located on the diagonally opposite sides of the intersection. One street name sign shall be provided at each "T" intersection. (Ord. 1567)

10.15.065 Storm Drainage.

- A. **Approved Storm Drain System.** The subdivider shall design and install an approved storm drain system to collect and convey all storm water run-off from the subdivision. The system shall be designed with adequate capacity to accommodate ultimate development of the drainage area. The system shall provide for the protection of surrounding properties that would be adversely affected by any increase in runoff attributed to the development; the city may require off-site storm drain improvements to satisfy this requirement. Any easement for drainage or flood control shall be improved as specified by the city engineer.
- B. **Compliance with Regional Water Quality Control Board Requirements.** Discharges into any groundwater or waterways (whether direct or indirect), public or private sewer or sewage disposal system, or into the ground, shall conform with the requirements of the Santa Ana Regional Water Quality Control Board, the California Department of Fish and Game, the California Department of Public Health, or such other relevant governmental agency, and in addition to the provisions of Title 9: Public Property, Public Works and Building Regulations; Chapter 9.20: Storm Water Management; Chapter 9.25: Fats, Oil and Grease Management and Discharge Control; Chapter 9.30: Sewerage; and Chapter 9.35: Water, of the municipal code.
- C. **City Engineer Approval Required.** All storm drainage facilities shall be constructed in compliance with plans approved by the city engineer. (Ord. 1567)

10.15.070 Water Supply.

Each parcel shall be served by the city's water system. (Ord. 1567)

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RECORDED AT THE REQUEST OF
AND WHEN RECORDED MAIL TO:
STATE OF CALIFORNIA
California State Lands Commission
Attn: Title Unit
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

STATE OF CALIFORNIA
OFFICIAL BUSINESS
Document entitled to free recordation
pursuant to Government Code Section 27383

SPACE ABOVE THIS LINE FOR RECORDER'S USE

A.P.N.
County: Orange

LEASE NO. PRC 4006.9

This Lease consists of this summary and the following attached and incorporated parts:

Section 1	Basic Provisions
Section 2	Special Provisions Amending or Supplementing Section 1 or 3
Section 3	General Provisions
Exhibit A	Land Description
Exhibit B	Site and Location Map

SECTION 1

BASIC PROVISIONS

THE STATE OF CALIFORNIA, hereinafter referred to as Lessor acting by and through the **CALIFORNIA STATE LANDS COMMISSION** (100 Howe Avenue, Suite 100-South, Sacramento, California 95825-8202), pursuant to Division 6 of the Public Resources Code and Title 2, Division 3 of the California Code of Regulations, and for consideration specified in this Lease, does hereby lease, demise, and let to **CITY OF SEAL BEACH**, hereinafter referred to as Lessee, those certain lands described in Exhibit A hereinafter referred to as Lease Premises, subject to the reservations, terms, covenants, and conditions of this Lease.

MAILING ADDRESS:

City of Seal Beach
211 Eighth Street
Seal Beach, CA 90740

LEASE TYPE: Public Agency Use

LAND TYPE: Sovereign

LOCATION: Anaheim Bay, near the Sunset Aquatic Regional Park, city of Seal Beach, Orange County

LAND USE OR PURPOSE: Right-of-Way Use, for the continued operation and maintenance of an existing 10-inch-diameter water line and 6-inch-diameter non-operational sewer line.

TERM: 25 years; beginning August 28, 2017; ending August 27, 2042, unless sooner terminated as provided under this Lease.

CONSIDERATION: the Public Health and Safety, with the State reserving the right to fix a monetary rent if the Commission finds such action to be in the State's best interests.

AUTHORIZED IMPROVEMENTS:

X **EXISTING:** A 10-inch-diameter water line and a 6-inch-diameter non-operational sewer line.

 TO BE CONSTRUCTED; CONSTRUCTION MUST BEGIN BY: N/A

AND BE COMPLETED BY: N/A

LIABILITY INSURANCE: N/A

SURETY BOND OR OTHER SECURITY: N/A

**SECTION 2
SPECIAL PROVISIONS**

BEFORE THE EXECUTION OF THIS LEASE, ITS PROVISIONS ARE AMENDED, REVISED, OR SUPPLEMENTED AS FOLLOWS:

1. No other improvements or structures shall be constructed or placed on the Lease Premises without Lessor's prior approval.

2. Lessee acknowledges that the lands described in Exhibit A of this Lease are subject to the Public Trust and are presently available to members of the public for recreational use, waterborne commerce, navigation, fisheries, open space, or other recognized Public Trust uses and that Lessee's use of the Lease Premises shall not interfere or limit the Public Trust rights of the public.
3. Lessee shall comply with all existing and subsequently enacted laws or regulations promulgated by any federal, state, or local government having lawful authority and jurisdiction over the authorized improvements.
4. Lessor shall have the right, at any time, and from time to time, upon reasonable prior notice to the Lessee, to examine all records and data associated with the improvements. Upon Lessor's request, Lessee shall provide Lessor with copies of internal inspections, maintenance reports, and any other information held by Lessee relating to the authorized improvements.
5. On or before August 28, 2019, Lessee shall conduct a bathymetric burial depth survey of the authorized improvements. Additionally, in accordance with the maintenance provisions of this Lease, Lessee shall conduct subsequent surveys to ensure minimum burial depth is consistent with 5-foot depth of the as-built plans. At a minimum, Lessee shall conduct a survey on or before August 28th of the following years: 2024, 2029, 2034, and 2039. Upon request, Lessee shall provide Lessor with copies of the results of all surveys and inspections conducted for the authorized improvements.
6. Upon lessor request to review inspection reports and burial depth surveys, Lessee shall enter into and execute a, lease management, reimbursement agreement with Lessor to pay for any and all reasonable costs and expenditures paid or incurred by the Commission, its staff or both for review and approval of any plan or related materials required herein, including but not limited to any review or preparation of reports, documents or other actions as required pursuant to the California Environmental Quality Act (CEQA), plan reviews, and/or amendments. Payment by Lessee shall be in a form and manner which is determined by Lessor's staff and is consistent with the requirement of State law.
7. Any structural modifications to any part of the authorized improvements within the Lease Premises, including future use of the existing non-operational sewer line shall require Lessor's prior review and approval. In the event of an urgent repair requiring immediate action, Lessor's staff may be contacted at the Commission's 24-hour emergency notification number: (562) 590-5201.
 - a. Should an emergency situation occur that requires the Lessee to immediately return the sewer pipe to an operating condition in order to maintain public health and safety prior to Lessor's authorization, Lessee shall notify Lessor in writing as soon as possible following the emergency event, and within 30 days of said written notice shall submit an application to lessor to request a lease amendment to authorize pipe operation.
8. Lessee agrees to submit no later than two (2) years prior to the expiration of this lease either:

- a. An application and minimum expense deposit for a new lease for the continued use of the Lease Premises; or
- b. A plan for the restoration of the Lease Premises for Lessor's review and approval, to include removal of all decommissioned improvements, and to be completed prior to the expiration of the lease term, pursuant to Section 3, Paragraph 13(a)(3) of this Lease. Failure to submit the application and minimum expense deposit or the restoration plan shall be deemed a default of the Lease under Section 3, Paragraph 12 of this Lease.

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SECTION 3 GENERAL PROVISIONS

1. GENERAL

In the case of any conflict between these General Provisions and Special Provisions found in Section 2, the Special Provisions control.

2. DEFINITIONS

For the purposes of this Lease, the following terms shall be defined as stated below:

“Additions” shall be defined as any use or Improvements other than those expressly authorized in this Lease.

“Alterations” shall be defined as any material change in the size, scope, density, type, nature, or intensity of Improvements on the Lease Premises from what is authorized in this Lease. Alterations shall also include any modifications, alterations, or renovations of the land or waterways on the Lease Premises other than those authorized by this Lease.

“Breach” shall be defined as a party's unjustified or unexcused nonperformance of a contractual duty the party is required to immediately perform.

“Damages” shall include all liabilities, demands, claims, actions or causes of action whether regulatory, legislative or judicial in nature; all assessments, levies, losses, fines, penalties, damages, costs and expenses, including, without limitation: (i) reasonable attorneys', accountants', investigators', and experts' fees and expenses sustained or incurred in connection with the defense or investigation of any such liability, and (ii) costs and expenses incurred to bring the Lease Premises into compliance with Environmental Laws, a court order, or applicable provisions of a Regulatory Agency. The term “Damages” also includes, expressly, those Damages that arise as a result of strict liability, whether arising under Environmental Laws or otherwise.

“Default” shall be defined as a material Breach of magnitude sufficient to justify termination of the Lease.

“Environmental Law” shall be defined as and include all federal, state, and local environmental, health, and safety laws, statutes, ordinances, regulations, rules, judgments, orders, and notice requirements, which were in effect as of the date of execution of this Lease or are subsequently enacted and lawfully applied hereto, which regulate or relate to (a) the protection or clean-up of the environment; (b) the use, treatment, storage, transportation, handling or disposal of hazardous, toxic or otherwise dangerous substances, wastes or materials; (c) the quality of the air and the discharge of airborne wastes, gases, particles, or other emissions; (d) the preservation or protection of waterways, groundwater, or drinking water; (e) the health and safety of persons or property; or (f) impose liability with respect to any of the foregoing, including without limitation, the California Environmental Quality Act (CEQA) [PRC §§ 21000 et seq.]; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) [42 USCS §§ 9601 et seq.]; the Resource Conservation and Recovery Act of 1976 (RCRA) [42 USCS §§ 6901 et seq.]; the Clean Water Act, also known as the Federal Water Pollution Control Act (FWPCA) [33 USCS §§ 1251 et seq.]; the Toxic Substances Control Act (TSCA) [15 USCS §§ 2601 et seq.]; the Hazardous Materials Transportation Act (HMTA) [49 USCS §§ 1801 et seq.]; the Insecticide, Fungicide, Rodenticide Act [7 USCS §§ 136 et seq.]; the Superfund Amendments and Reauthorization Act [42 USCS §§ 6901 et seq.]; the Clean Air Act [42 USCS §§ 7401 et seq.]; the Safe Drinking Water Act [42 USCS §§ 300f et seq.]; the Solid Waste Disposal Act [42 USCS §§ 6901 et seq.]; the Surface Mining Control and Reclamation Act [30 USCS §§ 1201 et seq.]; the Emergency Planning and Community Right to Know Act [42 USCS §§ 11001 et seq.]; the Occupational Safety and Health Act [29 USCS §§ 655 and 657]; the California Underground Storage of Hazardous Substances Act [H & S C §§ 25280 et seq.]; the California Hazardous Substances Account Act [H & S C §§ 25300 et seq.]; the California Hazardous Waste Control Act [H & S C §§ 25100 et seq.]; the California Safe Drinking Water and Toxic Enforcement Act [H & S C §§ 24249.5 et seq.]; the Porter-Cologne Water Quality Act [Water C §§ 13000 et seq.] together with any amendments of or regulations promulgated under the statutes cited above.

“Hazardous Material” shall be defined as and include any substance which falls within the definition of hazardous substance, hazardous waste, hazardous material, toxic substance, solid waste, pollutant, or contaminant, under any Environmental Law.

“Improvements” shall be defined as any modification, alteration, addition, or removal of any material, and any other action which serves to change the condition of the Lease Premises from the natural state whether situated above, on, or under the

Lease Premises. Improvements include, but are not limited to buildings, structures, facilities, decks, docks, wharves, piers, walks, curbs, bridges, buoys, landscaping, roadways, shoreline protective structures of all types, foundations, pilings or similar support structures whether above or below the water line, fences, utilities, pipelines, and any other construction of any type situated on the Lease Premises.

"Lease" shall be defined as this lease contract together with all amendments and exhibits.

"Lease Premises" shall be defined as the area of land, together with any improvements located thereon, the use and occupancy of which is authorized by this Lease.

"Lessor" shall be defined as the state of California, acting by and through the California State Lands Commission, including the Commissioners, their alternates and designates, the Executive Officer, and the staff of the California State Lands Commission.

"Regulatory Agency" shall include any Federal, State, County, Municipal, or Local agency having jurisdiction over the Lease Premises.

"Repairs" shall be defined as all work of any kind made to maintain, change, restore, strengthen, replace, alter, or otherwise affect any Improvement on the Lease Premises.

"Residence" shall be defined as any Improvement, whether permanent, movable, or temporary, or a portion thereof, which is for the time being a home or place of lodging. A Residence includes any Improvement affixed to the land such as trailers or cabins, built on a raised foundation such as stilts or pilings, and floating residences such as boats, barges, arks, and houseboats, and any combination of such Improvements which provide residential accommodations to the Lessee or others. "Residence" shall not include transitory, intermittent, recreational use of facilities such as campgrounds.

"Residential Use" shall be defined as Improvements such as, but not limited to, sundecks, and sunrooms which are extensions of, or additions to, the upland property and are not water-dependent uses. Although the various uses or Improvements which may fall under this definition may vary by geographic area, lease type, or other factors, it is the intention of the parties to include in this definition all uses and Improvements which are not water-dependent but residential in nature, or those uses and Improvements which are not consistent with common law public trust principles and values.

3. CONSIDERATION

(a) Absolute Triple Net Lease

This Lease is an absolute triple net lease, pursuant to which Lessor has no obligation with respect to the payment of taxes, insurance, the cost of maintenance, utilities and repairs or other costs or obligations associated with the Leased Premises, except as expressly stated herein.

(b) Rent

Lessee agrees to pay Lessor rent as stated in this Lease, in annual installments, for the use and occupancy of the Lease Premises. The first installment shall be due on or before the beginning date of this Lease and all subsequent installments shall be due on or before each anniversary of its beginning date during each year of the Lease term, or as otherwise provided in this Lease. Said sums shall be paid in lawful money of the United States of America. Lessee shall send said rent to the mailing address of Lessor. Timeliness of receipt of remittances sent by mail shall be governed by the postmark date as stated in Government Code Section 11002. Invoices for rent due may be provided by Lessor as a courtesy. Lessor's failure to, or delinquency in, providing invoices shall neither excuse Lessee from paying rent, nor extend the time for paying rent.

(c) Modification

Lessor may modify the method, amount, or rate of consideration effective on each fifth anniversary of the beginning date of this Lease. Should Lessor fail to exercise such right effective on any fifth anniversary it may do so effective on any one (1) of the next four (4) anniversaries following such fifth anniversary, without prejudice to its right to effect such modification on the next or any succeeding fifth anniversary of the beginning date. No such modification shall become effective unless Lessee is given at least thirty (30) days' notice prior to the date of the Commission meeting wherein the rent modification is considered, or thirty (30) days' notice prior to the effective date of the increase, whichever provides a greater notice period.

If the consideration for this Lease is based on a percentage of income, royalties, profits, or any similar business performance indicators, Lessee shall provide Lessor with financial statements and all other documents necessary to determine the relevant basis for income.

(d) Penalty and Interest

Any installments of rent accruing under this Lease not paid when due shall be subject to a delinquency charge equal to five percent (5%) of the principal sum due. Annual payments shall bear interest as specified in Public Resources Code Section 6224 and the Lessor's then existing administrative regulations governing penalty and interest.

(e) Non-Monetary Consideration

If the consideration to Lessor for this Lease is the public use, benefit, health, or safety, Lessor shall have the right to review such consideration at any time and set a monetary rental if the Lessor, at its sole discretion, determines that such action is in the best interest of the State. Lessee's assignment or transfer of this Lease pursuant to Section 3 Paragraph 11 below to any third party which results in royalties, profits, or any form of compensation, whether monetary or otherwise, shall give Lessor the right to reevaluate the requirements of this Lease as stated in Section 3 Paragraph 11. Lessee shall be given at least thirty (30) days' notice prior to the date of the Commission meeting wherein the rent modification is considered, or thirty (30) days' notice prior to the effective date that this Lease is converted to a monetary rental, whichever provides more notice.

(f) Place for Payment of Rent

All rent that becomes due and payable under this Lease shall be paid to Lessor in person or by United States mail at the Sacramento Offices of the California State Lands Commission, currently at 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825-8202, or at any other place or places that Lessor may designate by written notice to Lessee. Alternately, Lessee may contact Lessor's accounting department for Lessor's current practices for payment by credit card or electronic fund transfer.

4. BOUNDARIES

This Lease is not intended to establish the State's boundaries and is made without prejudice to either party regarding any boundary or title claims which may be asserted presently or in the future.

5. LAND USE

(a) General

(1) Lessee shall use the Lease Premises only for the purpose or purposes stated in this Lease and only for the operation and maintenance of the Improvements expressly authorized in this Lease. Lessee shall commence use of the Lease Premises within ninety (90) days of the beginning date of this Lease or within ninety (90) days of the date set for construction to commence as set forth in this Lease, whichever is later.

(2) All demolition, construction, remodeling, reconstruction, maintenance, repairs, removal, or remediation performed on the Lease Premises at any time by Lessee shall first be authorized by all appropriate Regulatory Agencies. Lessee is solely responsible for determining what approvals, authorizations, or certifications are required, and shall be solely responsible for all costs incurred thereby. In addition, Lessee shall obtain and comply with preventative or remedial measures required by any environmental reports, assessments, or inspections, including, but not limited to those required by the California Environmental Quality Act and/or the National Environmental Policy Act, or as otherwise required by law or reasonably requested by Lessor. Nothing in this Lease shall be interpreted as a pre-approval of any permit, certification, or any other precondition required for the use of the Lease Premises.

(b) Continuous Use

Lessee's use of the Lease Premises shall be continuous from commencement of the Lease until its expiration. Lessee's discontinuance of such use for a period of ninety (90) days shall be presumed to be an abandonment unless Lessee demonstrates to Lessor's satisfaction that Lessee's use of the Lease Premises is consistent with similarly situated properties. In the event of an abandonment, Lessor may elect to terminate the Lease as provided in Paragraph 12(a)(3). Abandonment of the Lease Premises shall not relieve Lessee of any obligations under this Lease.

(c) Repairs and Maintenance

(1) Lessor shall not be required to make any Repairs in, on, or about all or part of the Lease Premises. Lessee shall, at all times during the term of this Lease and without any cost or expense to Lessor, keep and maintain the Lease Premises, including all Improvements, in good order and repair and in a clean, safe, sanitary, and orderly condition.

(2) Lessee shall make, or cause to be made, any Repairs which may be required by any Regulatory Agency. Lessee shall observe and comply with, any law, statute, ordinance, plan, regulation, resolution, or policy applicable to the Lease Premises in making such Repairs. All work shall be performed with reasonable diligence, completed within a reasonable time, and performed at the sole cost and expense of Lessee.

(3) Lessee expressly accepts the Lease Premises "as is" and expressly acknowledges that:

(i) Lessor has made no representations or warranties as to the suitability of the Lease Premises for any Improvements. Lessee shall conduct all tests necessary to determine the suitability of the Lease Premises for any proposed use or Improvements authorized; and

(ii) Lessor has made no representations or warranties as to the quality or value of any Improvements found on the Lease Premises, or of their conformity to any applicable building codes, zoning ordinances, or other regulations. Lessee agrees to inspect any preexisting Improvements at its own cost to determine whether such Improvements are safe and suitable for the Lessee's intended use; and

(iii) Lessee shall neither be entitled to any reduction in rent, nor any extension of the terms of this Lease because of damage to or destruction of any Improvements on the Lease Premises.

(iv) Lessee and Lessor agree that any Improvements on the Lease Premises constitute the personal property of Lessee and that fixture law does not apply.

(4) In the event that the Lease Premises is partly, or in whole, comprised of tidal, submerged, or waterfront property, Lessee expressly accepts the hazards involved in using or improving such lands. Lessor is not responsible for, and Lessee shall not be reimbursed for nor receive any offset of rent for, any damages or reduced use of the Lease Premises caused by: local or invasive flora or fauna, flooding, erosion, sea level rise, storms, freezing, inclement weather of any kind, acts of god, maintenance or failure of protective structures, and any other such hazards.

(d) Additions, Alterations, and Removal

No Improvements other than those expressly authorized in this Lease shall be constructed by the Lessee on the Lease Premises without the prior written consent of Lessor. Any Additions or Alterations are expressly prohibited. Lessee is also prohibited from any Additions or Alterations which cause a material change to the environmental impact on or around the Lease Premises.

(e) Enjoyment

This Lease is non-exclusive, and is subject to the provisions of Section 3, Paragraph 6 below. Lessee shall have the right to exclude persons from the Lease Premises only when their presence or activity constitutes a material interference with Lessee's use and enjoyment of the Lease Premises.

(f) Discrimination

Lessee, in its use of the Lease Premises, shall not discriminate against any person or class of persons on any basis protected by federal, state, or local law, including: race, color, creed, religion, national origin, sex, sexual orientation, gender identity, age, marital/parental status, veteran status, or disability.

(g) Residential Use

Unless otherwise provided for in this Lease, no portion of the Lease Premises shall be used as a location for a Residence, for the purpose of mooring or maintaining a structure which is used as a Residence, or for Residential Uses.

(h) Commercial Use

Unless otherwise provided for in this Lease, the Lease Premises is to be used by Lessee and Lessee's invitees or guests only. Use of the Lease Premises for commercial purposes; conducting a business, whether for profit or otherwise; and any subleasing, rental, or any transaction whereby Lessee directly or indirectly receives compensation from a third party in exchange for use of the Lease Premises shall constitute an immediate Default of this lease with no cure period.

6. RESERVATIONS, ENCUMBRANCES, AND RIGHTS-OF-WAY

(a) Reservations

(1) Lessor expressly reserves all natural resources in or on the Lease Premises, including but not limited to timber, minerals, and geothermal resources as defined under Public Resources Code sections 6401, 6407, and 6903, respectively; the right to grant and transfer the same; as well as the right to grant leases in and over the Lease Premises which may be necessary or convenient for the extraction of such natural resources. Such leasing shall be neither inconsistent nor incompatible with the rights or privileges of Lessee under this Lease.

(2) Lessor expressly reserves a right to go on the Lease Premises and all Improvements for any purposes associated with this Lease or for carrying out any function required by law, or the rules, regulations, or management policies of the State Lands Commission. Lessor shall have a right of reasonable access to the Lease Premises across Lessee owned or occupied lands adjacent to the Lease Premises for any purpose associated with this Lease.

(3) Lessor expressly reserves to the public an easement for convenient access across the Lease Premises to other State-owned lands located near or adjacent to the Lease Premises and a right of reasonable passage across and along any right-of-way granted by this Lease; however, such easement or right-of-way shall be neither inconsistent nor incompatible with the rights or privileges of Lessee under this Lease.

(4) Lessor expressly reserves the right to lease, convey, or encumber the Lease Premises, in whole or in part, during the Lease term for any purpose not inconsistent or incompatible with the rights or privileges of Lessee under this Lease.

(b) Encumbrances

The Lease Premises may be subject to pre-existing contracts, leases, licenses, easements, encumbrances, and claims and is made without warranty by Lessor of title, condition, or fitness of the land for the stated or intended purpose.

7. RULES, REGULATIONS, AND TAXES

(a) Lessee shall comply with and be bound by all presently existing or subsequently enacted rules, regulations, statutes or ordinances of the State Lands Commission or any Regulatory Agency. Occupancy or use of the Lease Premises provides no exemption from applicable regulations including, but not limited to, federal, state, county and local regulations, regulations promoting public health, safety, or welfare, building codes, zoning ordinances, and sanitation regulations. Lessee expressly acknowledges that Regulatory Agencies have jurisdiction over the Lease Premises unless such laws are in direct conflict with state law or public trust principles.

(b) Lessee understands and agrees that a necessary condition for the granting and continued existence of this Lease is that Lessee obtains and maintains all permits or other entitlements. Lessee expressly acknowledges that issuance of this Lease does not substitute for, or provide preference in obtaining authorizations from other Regulatory Agencies.

(c) Taxes

(1) In addition to the rent due under this Lease, Lessee accepts responsibility for and shall pay any and all real and personal property taxes, including possessory interest taxes, assessments, special assessments, user fees, service charges, and other charges of any description levied, imposed on, assessed, or associated with the leasehold interest, Improvements on the Lease Premises, any business or activity occurring on the Lease Premises, the Lease Premises itself, or any portion thereof, levied by any governmental agency or entity. Such payment shall not reduce rent due Lessor under this Lease and Lessor shall have no liability for such payment.

(2) In the event that this Lease commences, terminates or expires during a tax year, Lessee shall pay the taxes for the period of such year during which this Lease was in effect.

(3) Any and all taxes and assessments and installments of taxes and assessments required to be paid by Lessee under this Lease shall be paid when due and the official and original receipt for the payment of such tax, assessment, or installment shall be delivered to Lessor upon request.

(4) Lessee shall indemnify and hold Lessor, the Lease Premises, and any Improvements now or hereafter located thereon, free and harmless from any liability, loss, or Damages resulting from any taxes, assessments, or other charges required by this Lease to be paid by Lessee and from all interest, penalties, and other sums imposed thereon and from any sales or other proceedings to enforce collection of any such taxes, assessments, or other charges.

8. INDEMNITY

(a) Lessee's use of the Lease Premises and any Improvements thereon is at Lessee's sole and exclusive risk.

(b) In addition to any other obligation to indemnify Lessor as otherwise provided in this Lease, except to the extent caused by the sole negligence and/or willful misconduct of the Lessor, Lessee shall indemnify, hold harmless, and, at the option of Lessor, defend Lessor, its officers, agents, and employees from any and all Damages resulting from Lessee's occupation and use of the Lease Premises. Lessee shall reimburse Lessor in full for all reasonable costs and attorneys' fees, specifically including, without limitation, any Damages arising by reason of: (1) The issuance, enjoyment, interpretation, Breach, or Default of this Lease; (2) The challenge to or defense of any environmental review upon which the issuance of this Lease is based; (3) The death or injury of any person, or damage to or destruction of any property from any cause whatever in any way connected with the Lease Premises, or with any of the Improvements or personal property on the Lease Premises; (4) The condition of the Lease Premises, or Improvements on the Lease Premises; (5) An act or omission on the Lease Premises by Lessee or any person in, on, or about the Lease Premises; (6) Any work performed on the Lease Premises or material furnished to the Lease Premises; (7) Lessee's failure to comply with any material legal or other requirement validly imposed on Lessee or the Lease Premises by a Regulatory Agency.

(c) The reimbursement provisions of this Paragraph 8 shall not apply to any claims, litigation, or other actions which may be brought by either Lessee or Lessor against each other.

(d) Nothing in this paragraph shall be construed as requiring that Lessor defend itself against all or any aspect of any challenge to this Lease or any associated environmental review. However, Lessee may take whatever legal action is available to it to defend this Lease or any associated environmental review against any challenge by a third party, whether or not Lessor chooses to raise a defense against such a challenge.

(e) Lessee shall notify Lessor immediately in case of any accident, injury, or casualty on the Lease Premises.

9. INSURANCE

(a) Lessee shall obtain and maintain in full force and effect during the term of this Lease comprehensive general liability insurance and property damage insurance, with such coverage and limits as may be reasonably requested by Lessor from time to time, but in no event for less than the sum(s) specified against any and all claims or liability arising out of the ownership, use, occupancy, condition, or maintenance of the Lease Premises and all Improvements.

(b) The insurance policy shall identify the Lease by its assigned number. The specific Improvements shall also be generally identified, as well as their location on state owned property. The coverage provided shall be primary and non-contributing. Lessee shall keep such policy current. Lessor shall be named as a "certificate holder" and/or an "additional interest" on the policy. Lessee shall provide Lessor with a current certificate of insurance at all times. At Lessor's request, Lessee shall provide a full copy of the current insurance policy, along with any and all endorsements or other such documents affecting the coverage. Lessor will not be responsible for any premiums or other assessments on the policy.

(c) The insurance coverage specified in this Lease shall be in effect at all times during the Lease term and subsequently until Lessor has either accepted all of the Lease Premises as improved or restored by Lessee as provided elsewhere in this Lease. Lessee shall notify Lessor within five (5) business days if the insurance is canceled for any reason.

10. SURETY BOND

(a) When required by Section 1 of this Lease, Lessee shall provide a surety bond or other security device acceptable to Lessor, for the specified amount, and naming the State of California, California State Lands Commission as the assured, to guarantee to Lessor the faithful observance and performance by Lessee of all of the terms, covenants, and conditions of this Lease.

(b) Lessor may require an increase in the amount of the surety bond or other security device to cover any additionally authorized Improvements, any modification of consideration, or to provide for inflation or other increased need for security. The surety bond or other security device may be increased on each fifth anniversary of the beginning date of this Lease. Should Lessor fail to exercise such right effective on any fifth anniversary, it may do so effective on any one (1) of the next four (4) anniversaries following such fifth anniversary without prejudice to its right to effect such modification on the next or any succeeding fifth anniversary. No such modification shall become effective unless Lessee is given at least thirty (30) days' notice prior to the date of the Commission meeting wherein the modification of the bond or security is considered, or thirty (30) days' notice prior to the effective date of the increase, whichever provides more notice.

(c) The surety bond or other security device shall be maintained in full force and effect at all times during the Lease term and subsequently until Lessor has either accepted all of the Lease Premises as improved or restored by Lessee as provided elsewhere in this Lease. Lessee must first seek approval of Lessor before changing the type of security device used, or the bond holder.

11. ASSIGNMENT, ENCUMBRANCING OR SUBLETTING

(a) Lessee shall not either voluntarily or by operation of law, assign, transfer, mortgage, pledge, hypothecate or encumber this Lease and shall not sublet the Lease Premises, in whole or in part, or allow any person other than the Lessee's employees, agents, servants and invitees to occupy or use all or any portion of the Lease Premises without the prior written consent of Lessor, which consent shall not be unreasonably withheld.

(1) Notwithstanding the foregoing prohibition against transfer and assignment, the Lease may be transferred by Lessee if the transfer is caused by the death of a spouse and the full interest of the deceased spouse is transferred to a surviving spouse; or the transfer is caused by the dissolution of the marriage of Lessee and the full interest of one of the spouses is transferred to the other spouse. In the event of such a transfer, Lessor shall be notified in writing within 30 days of the transfer.

(2) Notice to Lessor of Successor Trustee(s): In the event this Lease is held in trust, and the Lessee is a trustee thereof, the substitution or succession of a new trustee shall not be an assignment or transfer for the purposes of this Paragraph. Lessee (and by operation of law, any successor trustee) agrees to provide prompt notice to Lessor of any succession or substitution of trustee in accordance with Paragraph 16(c) of General Provisions, no later than sixty (60) days after the named trustee as appears on the face of this Lease becomes unable or ceases to serve as trustee for any reason.

(b) The following shall be deemed to be an assignment or transfer within the meaning of this Lease:

(1) If Lessee is a business entity, any dissolution, merger, consolidation or other reorganization of Lessee, or the sale or other transfer of substantially all the assets of Lessee. If Lessee is a publicly traded entity, transfers of interests in Lessee shall not constitute an assignment requiring the consent of Lessor.

(2) If Lessee is a partnership, a transfer of any interest of a general partner, a withdrawal of any general partner from the partnership, or the dissolution of the partnership.

(c) If this Lease is for sovereign lands appurtenant to adjoining littoral or riparian land, Lessee shall not transfer or assign its ownership interest or use rights in such adjoining lands separately from the leasehold rights granted herein without the prior written consent of Lessor.

(d) If Lessee desires to assign, sublet, encumber or otherwise transfer all or any portion of the Lease Premises, Lessee shall do all of the following:

(1) Give not less than 90 days' prior written notice to Lessor;

(2) Provide the name, complete business organization, operational structure, and formation documents of the

proposed assignee, sublessee, secured third party, or other transferee; and the nature of the use of and interest in the Lease Premises proposed by the assignee, sublessee, secured third party or other transferee.

(3) Provide the terms and conditions of the proposed assignment, sublease, or encumbrance or other transfer;

(4) Provide audited financial statements for the two most recently completed fiscal years of the proposed assignee, sublessee, secured party or other transferee; and provide *pro forma financial statements* showing the projected income, expense and financial condition resulting from use of the Lease Premises; and

(5) Provide such additional or supplemental information as Lessor may reasonably request concerning the proposed assignee, sublessee, secured party or other transferee.

(6) Lessor will evaluate proposed assignees, sublessees, secured third parties and other transferees and grant approval or disapproval according to standards of commercial reasonableness considering the following factors within the context of the proposed use: the proposed party's financial strength and reliability, their business experience and expertise, their personal and business reputation, their managerial and operational skills, their proposed use and projected rental, as well as other relevant factors.

(e) Lessor shall have a reasonable period of time from the receipt of all documents and other information required under this provision to grant or deny its approval of the proposed party. Lessor may reevaluate the rent, insurance and/or bond provisions of this Lease, and may condition its approval of the proposed assignment, sublease, hypothecation, mortgage, or other transfer on the party's acceptance of the new terms. Lessee's rights stated in this paragraph shall apply regardless of whether the proposed transfer coincides with a regular rent review period as stated in Section 3 Paragraph 3(c) above.

(f) Lessee's mortgage or hypothecation of this Lease, if approved by Lessor, shall be subject to terms and conditions imposed by a separately negotiated encumbrancing agreement.

(g) Upon the express written assumption of all obligations and duties under this Lease by an assignee approved by Lessor, the Lessee may be released from all liability under this Lease arising after the effective date of assignment and not associated with Lessee's use, possession or occupation of or activities on the Lease Premises; except as to any hazardous wastes, substances or materials as defined under federal, state or local law, regulation, or ordinance manufactured, generated, used, placed, disposed, stored or transported on the Lease Premises during Lessee's tenancy.

(h) If the Lessee files a petition or an order for relief is entered against Lessee, under Chapters 7, 9, 11 or 13 of the Bankruptcy Code (11 USC Sect. 101, et seq.) then the trustee or debtor-in-possession must elect to assume or reject this Lease within sixty (60) days after filing of the petition or appointment of the trustee, or the Lease shall be deemed to have been rejected, and Lessor shall be entitled to immediate possession of the Lease Premises. No assumption or assignment of this Lease shall be effective unless it is in writing and unless the trustee or debtor-in-possession has cured all Defaults under this Lease (monetary and non-monetary) or has provided Lessor with adequate assurances (1) that within ten (10) days from the date of such assumption or assignment, all monetary Defaults under this Lease will be cured; and (2) that within thirty (30) days from the date of such assumption, all non-monetary Defaults under this Lease will be cured; and (3) that all provisions of this Lease will be satisfactorily performed in the future.

(i) In the event of any transfer or assignment, under this Paragraph 11 or by any other means authorized by this Lease, the Lease terms shall be for the remaining years existing on the Lease prior to the transfer or assignment. A transfer or assignment shall not extend the term of this Lease.

12. **DEFAULT AND REMEDIES**

(a) **Default**

The occurrence of any one or more of the following events shall immediately and without further notice constitute a Default of this Lease:

(1) Lessee's failure to make any payment of rent, royalty, or other consideration as required under this Lease; or

(2) Lessee's failure to obtain or maintain liability insurance or a surety bond or other security device as required under this Lease; or

(3) Lessee's abandonment of the Lease Premises (including the covenant for continuous use as provided for in Paragraph 5(b)) during the Lease term; or

(4) Lessee's failure to obtain and maintain all necessary governmental permits or other entitlements; or

(5) The maintenance of the Lease Premises in violation of, or failure to comply with, any applicable provisions of any Regulatory Agency, Environmental Law, or maintenance of the Lease Premises in a condition constituting nuisance; or

(6) Lessee's Failure to commence to construct and to complete construction of the Improvements authorized by this Lease within the time limits specified in this Lease.

(7) Lessee is found to sublet or otherwise surrender daily management and control of the Lease Premises to a third party without the knowledge, expressed written consent or authorization of the Lessor.

(b) Lessee's failure to observe or perform any other term, covenant, or condition of this Lease when such failure shall continue for a period of thirty (30) days after Lessor's giving written notice shall constitute a Default of this lease. However, if the nature of Lessee's Default under this paragraph is such that more than thirty (30) days are reasonably required for its cure, then Lessee shall not be deemed to be in Default if Lessee commences such cure within such thirty (30) day period and diligently proceeds with such cure to completion.

(c) Should Lessee Breach any term, covenant, or condition of this Lease under Paragraph 12(b) above three (3) times in any three hundred and sixty-five (365) day period, the third Breach will be a Default under this Lease and Lessor will be entitled to immediately terminate this Lease, and take other appropriate action. Lessor will provide written notice of each Breach as provided above, and provide written notice that future Breaches will constitute immediate Default with no cure period.

(d) Remedies

In the event of a Default by Lessee and Lessee's failure to cure such Default if such a cure period is applicable, Lessor may at any time and with or without notice do any one or more of the following in addition to any rights or remedies permitted by law:

(1) Re-enter the Lease Premises, remove all persons and property, and repossess and enjoy such premises; or

(2) Terminate this Lease and Lessee's right of possession of the Lease Premises by any lawful means. The termination shall not relieve Lessee of any obligation, monetary or otherwise, which has accrued prior to the date of termination. Such termination shall be effective upon Lessor's giving written notice and upon Lessee's receipt of such notice. Lessee shall immediately surrender possession of the Lease Premises to Lessor. Lessor shall be entitled to recover from Lessee all amounts to which Lessor is entitled pursuant to Section 1951.2 of the California Civil Code, or any other provision of law, including any necessary Repair, renovation, alteration, remediation, or removal of Improvements; or

(3) Maintain this Lease in full force and effect and recover any rent, royalty, or other consideration as it becomes due without terminating Lessee's right of possession regardless of whether Lessee shall have abandoned the Lease Premises, subject to the conditions imposed by Cal. Civil Code § 1951.2; or

(4) Exercise any other right or remedy which Lessor may have at law or equity.

(e) Determination of Rental Value

If rent under this Lease is calculated as a percentage of Lessee's income attributable to the Lease Premises and Lessee abandons the Lease Premises during some or all of the applicable period, then the reasonable rental value shall be the percentage of proceeds Lessor would have received had Lessee operated the Lease Premises in the usual and customary manner.

(f) Waiver of Rights

The failure or delay of either party to exercise any right or remedy shall not be construed as a waiver of such right or remedy or any Breach by the other party. Lessor's acceptance of any rent shall not be considered a waiver

of any preexisting Breach by Lessee other than the failure to pay the particular rent accepted regardless of Lessor's knowledge of the preexisting Breach at the time rent is accepted.

13. RESTORATION OF LEASE PREMISES AND ENVIRONMENTAL MATTERS

(a) Restoration of Lease Premises

(1) Upon expiration or sooner termination of this Lease, Lessee must immediately surrender possession of the Lease Premises to Lessor. Prior to the time of surrender, Lessee must remove all or any Improvements together with the debris and all parts of any such Improvements at its sole expense and risk, regardless of whether Lessee actually constructed or placed the Improvements on the Lease Premises; or Lessor, at its sole and absolute discretion, may itself remove or have removed all or any portion of such Improvements at Lessee's sole expense. Lessor may waive all or any part of this obligation in its sole discretion if doing so is in the best interests of the State.

(2) As a separate and related obligation, Lessee shall restore the Lease Premises as nearly as possible to the conditions existing prior to the installation or construction of any Improvements. For purposes of this Lease, restoration includes removal of any landscaping; removal of any Hazardous Materials; and to the extent possible, undoing any grading, fill, excavation, or similar alterations of the natural features of the Lease Premises. Lessor may waive all or any part of this obligation in its sole and absolute discretion.

(3) Unless otherwise provided for in this Lease, Lessee shall submit to Lessor no later than one (1) year prior to the expiration of this Lease either: (a) an application and minimum expense deposit for a new lease for the continued use of the Lease Premises, or (b) a plan for the restoration of the Lease Premises to be completed prior to the expiration of the lease term together with a timeline for obtaining all necessary permits and conducting the work prior to the expiration of this Lease.

(4) In removing any or all Improvements, or conducting any restoration work, Lessee shall be required to obtain any permits or other governmental approvals as may then be required by any Regulatory Agency, including, without limitation, any Environmental Law.

(5) Lessor may, upon written notice, in its sole and absolute discretion, accept title to any or all Improvements at the termination of this Lease. Lessor shall notify Lessee that Lessor intends to take title to any or all Improvements within six (6) months of Lessee submitting a plan for restoration under Paragraph 13(a)(3)(b) above. If Lessor elects to take title to any such Improvements, Lessee shall deliver to Lessor such documentation as may be necessary to convey title to such Improvements to Lessor free and clear of any liens, mortgages, loans, or any other encumbrances. Lessor shall not pay, and Lessee shall not be entitled to compensation for Lessor's taking title to such property.

(b) Environmental Matters

(1) Lessee's Obligations:

(i) Lessee will not use, occupy, or permit any portion of the Lease Premises to be used or occupied in violation of any Environmental Law. Lessee shall not manufacture or generate or store Hazardous Material on the Lease Premises unless specifically authorized under other terms of this Lease.

(ii) Lessee shall practice conservation of water, energy, and other natural resources.

(iii) Lessee shall notify Lessor and the appropriate governmental emergency response agency, or agencies immediately in the event of any release or threatened release of any Hazardous Material.

(2) Lessor may at any time during the Lease term require Lessee to conduct at its own expense and by a contractor approved by Lessor an independent environmental site assessment or inspection for the presence or suspected presence of Hazardous Material generated, used, placed, disposed, stored, or transported on the Lease Premises during the term of the Lease. Lessee shall provide the results of the assessment or inspection to Lessor and the appropriate governmental response agency or agencies and shall further be responsible for removing or taking other appropriate remedial action regarding such Hazardous Material in accordance with applicable Environmental Law.

(3) **Environmental Indemnity.**

Lessee shall indemnify, defend, and hold Lessor and Lessor's, officer, appointees, volunteers, employees, agents, successors and assigns free and harmless from and against all Damages that may at any time be imposed upon, incurred by, or asserted or awarded against Lessor in connection with or arising from any Breach of Lessee's obligations hereunder; or out of any violation by Lessee of any Environmental Law; or resulting in the imposition of any lien or claim for the recovery of any costs for environmental cleanup or other response costs relating to the release or threatened release of Hazardous Materials on the Lease Premises during the Lessee's tenancy. This obligation shall include any prior leases between Lessor and Lessee and will continue through any periods Lessee is in holdover, unlawful detainer, or any subsequent month-to-month tenancies created by operation of law. Lessee's obligations hereunder will survive the expiration or sooner termination of this Lease.

(4) Violation of this section shall constitute grounds for termination of the Lease. Lessor, shall notify Lessee when, in Lessor's opinion, Lessee has violated the provisions of this section. Lessee shall immediately discontinue the conduct and respond within five (5) business days. Lessee shall take all measures necessary to remedy the condition.

14. QUITCLAIM

Lessee shall, upon the early termination of this Lease and at Lessor's request, execute and deliver to Lessor in a form provided by Lessor a good and sufficient release of all rights under this Lease. Should Lessee fail or refuse to deliver such a release, Lessor may record a written notice reciting such failure or refusal. This written notice shall, from the date of its recordation, be conclusive evidence against Lessee of the termination of this Lease and all other claimants.

15. HOLDING-OVER

(a) This Lease shall terminate without further notice upon the expiration of the term of this Lease. Lessee shall have removed any Improvements and completed any restoration as required by Lessor prior to the expiration of this Lease, and shall surrender possession of the Lease Premises. Any failure by the Lessee to remove Improvements, restore the Lease Premises, and/or surrender possession of the Lease Premises at the expiration or sooner termination of this Lease shall not constitute a renewal or extension and shall not give Lessee any rights in or to the Lease Premises or any part thereof except as expressly provided in this Lease. Lessee shall be deemed in unlawful detainer of the Lease Premises and Lessor shall be entitled to all resulting legal remedies.

(b) Lessor may, in its sole discretion, choose to accept Rent for the Lease Premises instead of immediately taking legal action to recover possession of the Lease Premises. Any tenancy created by operation of law on Lessor's acceptance of rent shall be deemed a month-to-month tenancy regardless of what sum or sums Lessee delivers to Lessor. Except as set forth below, any subsequent tenancy created in this manner shall be on the same terms, covenants, and conditions set forth in this Lease insofar as such terms, covenants, and conditions can be applicable to a month-to-month tenancy

(c) In recognition of the increased accounting, land management, and supervisory staff time required for month-to-month tenancies, the rent for each month or any portion thereof during such holdover period may be an amount equal to one hundred fifty percent (150%) of one-twelfth (1/12) of the total compensation for the most recent year paid. In the event this Lease does not require monetary compensation, Lessor shall have the right to establish rent based on the fair market value of the Lease Premises. The month-to-month tenancy may be terminated by Lessee or Lessor upon thirty (30) calendar days' prior written notice to the other.

16. ADDITIONAL PROVISIONS

(a) Waiver

(1) No term, covenant, or condition of this Lease and no omission, neglect, Default or Breach of any such term, covenant or condition shall be deemed to have been waived by Lessor's acceptance of a late or nonconforming performance or otherwise, unless such a waiver is expressly acknowledged by Lessor in writing. No delay or omission of Lessor to exercise any right or power arising from any omission, neglect, Default or Breach of term, covenant, or condition of this Lease shall be construed as a waiver or any acquiescence therein.

(2) Any such waiver shall not be deemed to be a waiver of any other term, covenant or condition; of any successive Breaches of the same term, covenant, or condition; or of any other Default or Breach of any term, covenant or condition of this Lease.

(b) Time

Time is of the essence for this Lease and each and all of its terms, covenants or conditions in which performance is a factor.

(c) Notice

All notices required to be given under this Lease shall be given in writing, sent by U.S. Mail with postage prepaid, to Lessor at the offices of the State Lands Commission and the Lessee at the address specified in this Lease. Lessee shall give Lessor notice of any change in its name or address.

(d) Consent

Where Lessor's consent is required under this Lease its consent for one transaction or event shall not be deemed to be a consent to any subsequent occurrence of the same or any other transaction or event.

(e) Changes

This Lease may be terminated and its term, covenants, and conditions amended, revised, or supplemented only by mutual written agreement of the parties.

(f) Successors

The terms, covenants, and conditions of this Lease shall extend to and be binding upon and inure to the benefit of the heirs, successors, and assigns of the respective parties.

(g) Joint and Several Obligation

If more than one Lessee is a party to this Lease, the obligations of the Lessees shall be joint and several.

(h) Captions

The section and paragraph captions used in this Lease are for the convenience of the parties. The captions are not controlling and shall have no effect upon the construction or interpretation of this Lease.

(i) Severability

If any term, covenant or condition of this Lease is determined by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Lease shall not be affected thereby, and each term and provision of this Lease shall remain valid and enforceable to the fullest extent permitted by law.

(j) Representations

Lessee agrees that no representations have been made by Lessor or by any person or agent acting for Lessor. Lessor and Lessee agree and acknowledge that this document contains the entire agreement of the parties, that there are no verbal agreements, representations, warranties or other understandings affecting this Lease, and Lessor and Lessee, as a material part of the consideration of this Lease, waive all claims against the other for rescission, damages, or otherwise by reason of any alleged covenant, agreement or understanding not contained in this Lease.

(k) Gender and Plurality

In this Lease, the masculine gender includes both the feminine and neuter, and the singular number includes the plural whenever the context so requires.

(l) Survival of Certain Covenants

All covenants pertaining to bond, insurance, indemnification, restoration obligations, Breach, Default, and remedies shall survive the expiration or earlier termination of this Lease until Lessee has fulfilled all obligations to restore the Lease Premises as required by this Lease.

(m) Counterparts

This agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement.

(n) Delegation of Authority

Lessor and Lessee acknowledge Lessor as defined herein includes the Commission Members, their alternates or designees, and the staff of the Commission. The ability of staff of the Commission to give consent, or take other

discretionary actions described herein will be as described in the then-current delegation of authority to Commission staff. All other powers are reserved to the Commission.

[Remainder of Page Intentionally Left Blank]

STATE OF CALIFORNIA - STATE LANDS COMMISSION

LEASE NO. PRC 4006.9

This Lease shall become effective only when approved by and executed on behalf of the State Lands Commission of the State of California and a duly executed copy has been delivered to Lessee. The submission of this Lease by Lessor, its agent, or representative for examination by Lessee does not constitute an option or offer to lease the Lease Premises upon the terms and conditions contained herein, or a reservation of the Lease Premises in favor of Lessee. Lessee's submission of an executed copy of this Lease to Lessor shall constitute an offer to Lessor to lease the Lease Premises on the terms and conditions set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Lease as of the date hereafter affixed.

LESSEE:

CITY OF SEAL BEACH

By: Jill R. Ingram

Title: City Manager

Date: 7/27/17

LESSOR:

STATE OF CALIFORNIA
STATE LANDS COMMISSION

By: [Signature]

Title: Chief
Land Management Division

Date: DEC 15 2017

ATTACH ACKNOWLEDGMENT

Execution of this document was authorized by
the California State Lands Commission on

6-22-2017.
(Month Day Year)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Orange }

On July 27, 2017 before me, Robin Lynn Roberts, Notary Public
Date Here Insert Name and Title of the Officer

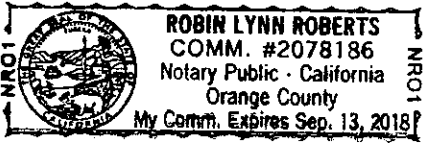
personally appeared Jill Renee Ingram
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Robin Lynn Roberts
Signature of Notary Public



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: State Lease Agreement PRC 4006.9

Document Date: August 28, 2017 Number of Pages: 20 (not including this page)

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: City Manager

Signer Is Representing: City Seal Beach



Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

Signer Is Representing: _____

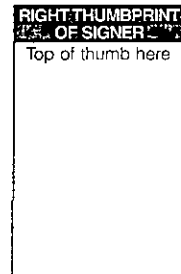


EXHIBIT A

PRC 4006.9

LAND DESCRIPTION

An easement for sewer and water lines over 20.00-foot strip of tide and submerged land in the Northeast Quarter of Section 24, Township 5 South, Range 12 West, S.B.M., in the County of Orange, State of California, lying 10.00 feet on each side of the following described centerline:

COMMENCING at a point in the centerline of construction of California State Highway known as Pacific Coast Highway, as shown on map filed in Book 14, Page 36, of Records of Surveys of said Orange County, said point being at the Northwestern terminus of the course shown on last mentioned map as "S 43° 28' E 1113.88 feet" and being marked by PK nail and washer marked 126+90.25 back, 122+05.92 ahead and shown in California Division of Highways field Book No. A0R001E, Page 0307, dated March 1, 1967; thence along the Northwestern prolongation of said centerline North 43° 28' 00" West 410.76 feet; thence North 71° 32' 49" East 252.87 feet, more or less, to a point in the Northeasterly line of Location No. 141 State Tide Lands described in Patent issued April 4, 1901, as shown on map recorded in Book 3, Page 45, Records of Surveys of said Orange County, said point being the POINT OF BEGINNING; thence North 71° 32' 49" East 669.75 feet; thence South 53° 03' 51" East approximately 1000 feet to the east line of said Section 24 and the TERMINUS of said centerline.

EXCEPTING THEREFROM those portions lying within Lot 1 of Tract No. 893, as per map recorded in book 27, Page 23 and 24, of Miscellaneous Maps, in the office of the County Recorder of said Orange County.

The sidelines of said 20.00-foot easement are lengthened or shortened at the angle point and to terminate at said Northeasterly line.

END OF DESCRIPTION

Revised by the California State Lands Commission Boundary Unit on March 1, 2017. Original description prepared on August 28, 1968 as found in PRC 4006 file, Calendar Item 31.



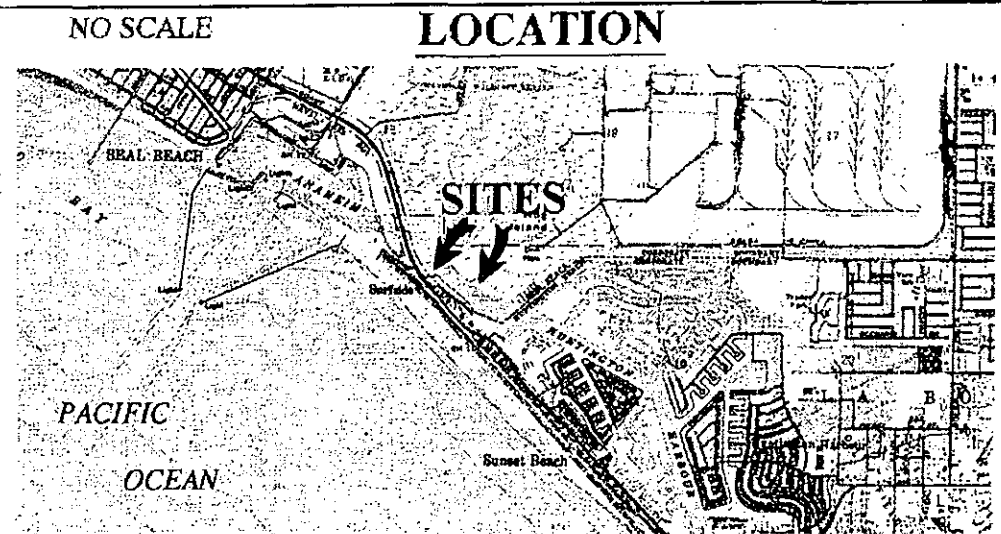
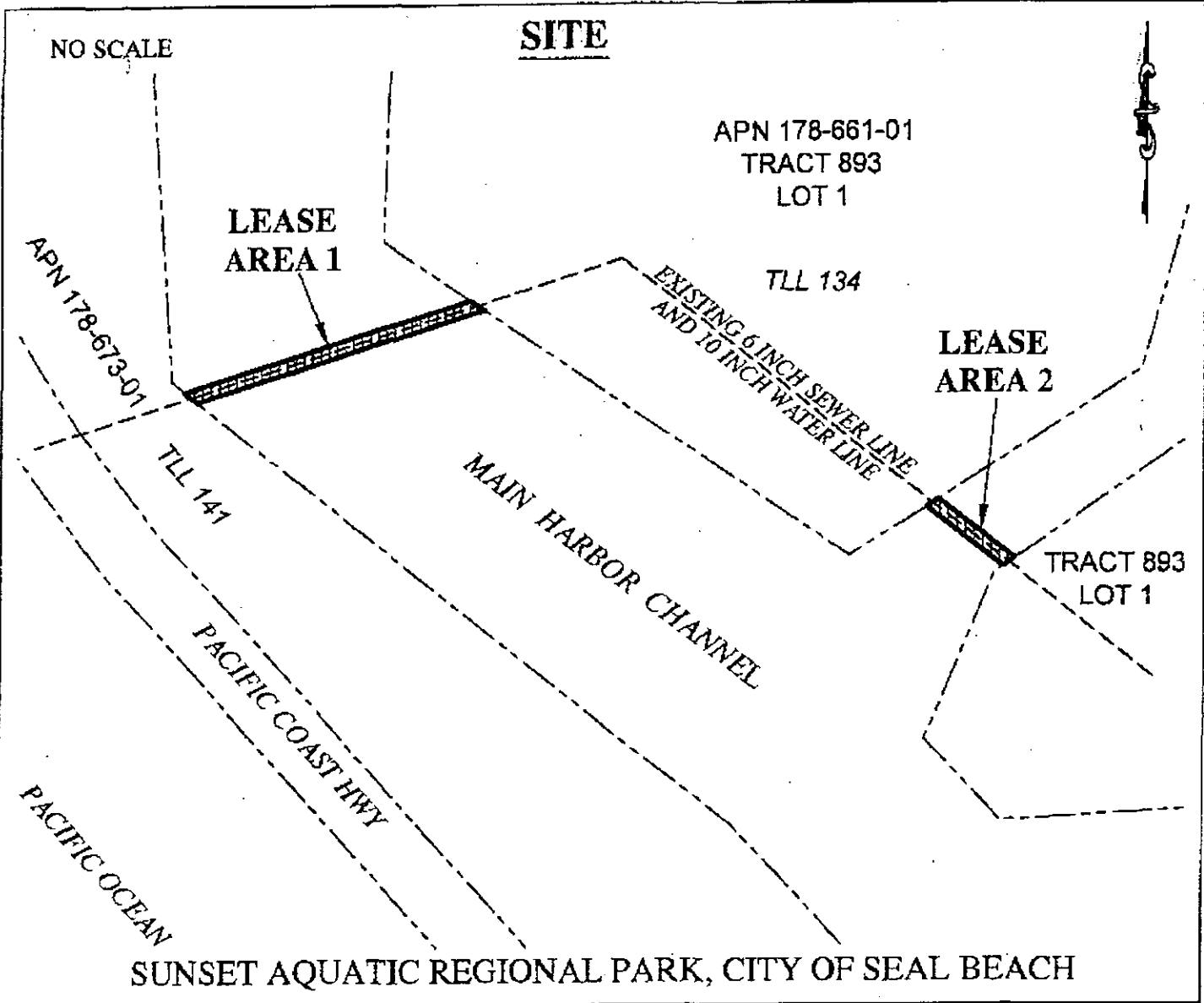


Exhibit B

PRC 4006.9
CITY OF SEAL BEACH
APNs 178-673-01 & 178-661-01
GENERAL LEASE -
RIGHT-OF-WAY USE
ORANGE COUNTY



This Exhibit is solely for purposes of generally defining the lease premises, is based on unverified information provided by the Lessee or other parties and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

A G R E E M E N T

THIS AGREEMENT made and entered into this 9th day of July, 1973 by and between

the CITY OF SEAL BEACH, CALIFORNIA,
a Charter City and a municipal
corporation hereinafter referred
to as "CITY"

and

SANITATION DISTRICT NUMBER FOUR OF
ORANGE COUNTY hereinafter referred
to as "DISTRICT"

pursuant to Resolution Number 2229,
adopted by City on the 9th day of July, 1973 and Resolution
Number 73-2 adopted by District on the 9th day of July, 1973.

WHEREAS, the District does not own or operate sewer treatment facilities; and

WHEREAS, the City owns and is capable of operating a sewer treatment facility with a capacity of approximately 1.5 million gallons per day; and

WHEREAS, the District desires to enter into an agreement with the City whereby City performs the maintenance and operation of a sewer treatment plant serving only the area encompassed by the District;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, it is hereby mutually agreed by and between the parties hereto as follows:

Section 1. City shall provide a sewer treatment facility with an estimated rated capacity of approximately 1,500,000 gallons per day.

Section 2. City shall operate said facility in a reasonable and prudent manner following the same operational policies that were followed by the City in prior years.

Section 3. City shall have exclusive administrative control over the operation and maintenance of the sewer treatment facility and the operating personnel.

Section 4. Personnel operating or maintaining the sewer treatment facility shall not be deemed employees of the District.

Section 5. City shall keep proper accounting records indicating the cost of operating the sewer treatment facility. Costs of operation shall include the salaries plus payroll burden for all personnel assigned directly to the plant, a pro-ration of salaries and payroll burden for supervisory personnel, materials, supplies, contracts for services and equipment items, a pro-ration of City costs of providing accounting, purchasing personnel, and other centralized supporting services, and all consulting engineering fees incurred on behalf of the treatment plant.

Section 6. District shall pay to the City the operational cost of the plant for the term of this contract as defined in Paragraph 5 herein upon demand of the City.

Section 7. District shall pay to City the sum of \$1.00 for use of the sewer treatment facilities existing as of July 1, 1973.

Section 8. District shall pay to the City the cost of all improvements, engineering costs for improvements to the sewer treatment plant which are incurred or for which contracts have been entered into during the term of this agreement, provided said contracts have prior approval of the District.

Section 9. District shall pay to City all other costs incurred by City on behalf of District when such are approved by District and shall repay to City any and all other funds that may from time to time be advanced to District for District Board of Directors expense, general management expense and attorney fees.

Section 10. District shall file with City a liability insurance policy, naming the City as an added insured, in the minimum amounts of \$300,000/\$500,000 public liability and \$100,000 property damage. If the District does not secure such an insurance policy, City shall have the right to secure such a policy on behalf of the District and consider the cost of such policy to be an operational cost.

Section 11. City shall not be obligated to accept sewage flows beyond the operational capacity of the sewer treatment facility as the plant existed on July 1, 1967, or as it may thereafter be improved.

Section 12. The term of this Agreement shall commence on July 1, 1973, and shall terminate at Midnight on June 30, 1974.

SANITATION DISTRICT NUMBER FOUR OF ORANGE COUNTY

By Thomas A. Bernard
Chairman

Date 7-16-73

CITY OF SEAL BEACH

By Annis Cantemacke
City Manager

Date: 7-16-73

A G R E E M E N T

THIS AGREEMENT made and entered into this 10th day of July, 1972, by and between the CITY OF SEAL BEACH, CALIFORNIA, a charter City and a municipal corporation hereinafter called "CITY" and SANITATION DISTRICT NUMBER FOUR OF ORANGE COUNTY hereinafter called "DISTRICT" pursuant to Resolution Number 2122, adopted by City on the 10th day of July, 1972, and Resolution Number 72-3, adopted by District on the 10th day of July, 1972.

WHEREAS, The District was formed on September 6, 1966, to provide services as authorized in Section 4700 et seq of the State of California Health and Safety Code; and

WHEREAS, The District does not own or operate sewer treatment facilities; and

WHEREAS, The City owns and is capable of operating a sewer treatment facility with a capacity of approximately 1,5 Million Gallons per day; and

WHEREAS, The District desires to enter into an agreement with the City whereby City performs the maintenance and operation of a sewer treatment plant serving only the area encompassed by the District;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, it is hereby mutually agreed by and between the parties hereto as follows:

Section 1. City shall provide a sewer treatment facility with an estimated rated capacity of approximately 1,500,000 gallons per day.

Section 2. City shall operate said facility in a reasonable and prudent manner following the same operational policies that were followed by the City in prior years.

Section 3. City shall have exclusive administrative control over the operation and maintenance of the sewer treatment facility and the operating personnel.

Section 4. Personnel operating or maintaining the sewer treatment facility shall not be deemed employees of the District.

Section 5. City shall keep proper accounting records indicating the cost of operating the sewer treatment facility. Costs of operation shall include the salaries plus payroll burden for all personnel assigned directly to the plant, a pro-ration of salaries and payroll burden for supervisorial personnel, materials, supplies, contracts for services and equipment items, a pro-ration of city costs of providing accounting, purchasing personnel, and other centralized supporting services, and all consulting engineering fees incurred on behalf of the treatment plant.

Section 6. District shall pay to the City the operational cost of the plant for the term of this contract as defined in Paragraph 5 herein upon demand of the City.

Section 7. District shall pay to City the sum of \$1,00 for use of the sewer treatment facilities existing as of July 1, 1972.

Section 8. District shall pay to the City the cost of all improvements, engineering costs for improvements to the sewer treatment plant which are incurred or for which contracts have been entered into during the term of this agreement, provided said contracts have prior approval of the District.

Section 9. District shall pay to City all other costs incurred by City on behalf of District when such are approved by District and shall repay to City any and all other funds that may from time to time be advanced to District for District Board of Directors expense, general management expense and attorney fees.

Section 10. District shall file with City a liability insurance policy, naming the City as an added insured, in the minimum amounts of \$300,000/\$500,000 public liability and \$100,000 property damage. If the District does not secure such an insurance policy City shall have the right to secure such a policy on behalf of the District and consider the cost of such policy to be an operational cost.

Section 11. City shall not be obligated to accept sewage flows beyond the operational capacity of the sewer treatment facility as the plant existed on July 1, 1967, or as it may thereafter be improved.

Section 12. The term of this Agreement shall commence on July 1, 1972, and shall terminate at Midnight on June 30, 1973.

SANITATION DISTRICT FOUR OF
ORANGE COUNTY

Date July 10, 1972

By

Thomas J. McPherson
Chairman

CITY OF SEAL BEACH

Date July 10, 1972

By

Dennis Courtneidge
City Manager

A G R E E M E N T

THIS AGREEMENT made and entered into this 17th day of June, 1968, by and between the CITY OF SEAL BEACH, CALIFORNIA, a charter city and a municipal corporation, hereinafter called "CITY" and SANITATION DISTRICT NUMBER FOUR OF ORANGE COUNTY, hereinafter called "DISTRICT" pursuant to Resolution Number 1683 adopted by City on the 17th day of June, 1968, and Resolution Number 68-4 adopted by the District on the 17th day of June, 1968.

WHEREAS, The District was formed on September 6, 1966, to provide services as authorized in Section 4700 et seq of the State of California Health and Safety Code; and

WHEREAS, The District does not own or operate sewer treatment facilities; and

WHEREAS, The City owns and is capable of operating a sewer treatment facility with a capacity of approximately 1,000,000 gallons per day; and

WHEREAS, The District desires to enter into an agreement with the City whereby City performs the maintenance and operation of a sewer treatment plant serving only the area encompassed by the District;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, IT IS HEREBY MUTUALLY AGREED by and between the parties hereto as follows:

1. City shall provide a sewer treatment facility with an estimated rated capacity of approximately 1,000,000 gallons per day.
2. City shall operate said facility in a reasonable and prudent manner following the same operational policies that were followed by the City in prior years.
3. City shall have exclusive administrative control over the operation and maintenance of the sewer treatment facility and the operating personnel.
4. Personnel operating or maintaining the sewer treatment facility shall not be deemed employees of the District.
5. City shall keep proper accounting records indicating the cost of operating the sewer treatment facility. Costs of operation shall include the salaries plus payroll burden for all personnel assigned directly to the plant, a pro-ration of salaries and payroll burden for supervisorial personnel, materials, supplies, contracts for services and equipment items, a pro-ration of city costs of providing accounting, purchasing, personnel, and other centralized supporting services, and all consulting engineering fees incurred on behalf of the treatment plant.

6. District shall pay to the City the operational cost of the plant for the term of this contract as defined in Paragraph 5 herein upon demand of the City.

7. District shall pay to the City the sum of \$1.00 for use of the sewer treatment facilities existing as of July 1, 1967.

8. District shall pay to the City the cost of all improvements, engineering costs for improvements to the sewer treatment plant which are incurred or for which contracts have been entered into during the term of this agreement, provided said contracts have prior approval of the District.

9. District shall pay to City all other costs incurred by City on behalf of District when such are approved by District and shall repay to City any and all other funds that may from time to time be advanced to District for District Board of Directors expense, general management expense and attorney fees.

10. District shall file with City a liability insurance policy, naming the City as an added insured, in the minimum amounts of \$300,000/\$500,000 public liability and \$100,000 property damage. If District does not secure such an insurance policy, City shall have the right to secure such a policy on behalf of the District and consider the cost of such a policy to be an operational cost.

11. City shall not be obligated to accept sewerage flows beyond the operational capacity of the sewer treatment facility as the plant existed on July 1, 1967, or as it may thereafter be improved.

12. The term of this agreement shall commence on July 1, 1968, and shall terminate at Midnight on June 30, 1969.

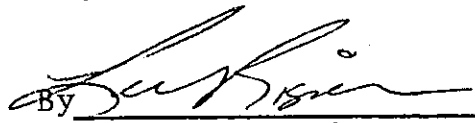
Date June 17, 1968

Date June 17, 1968

SANITATION DISTRICT NUMBER
FOUR OF ORANGE COUNTY

By 
Chairman

CITY OF SEAL BEACH

By 
Lee Risner, City Manager

A G R E E M E N T

THIS AGREEMENT made and entered into this 7th day of June 1967, 1967, by and between the CITY OF SEAL BEACH, CALIFORNIA, a charter city and a municipal corporation, hereinafter called "CITY" and COUNTY SANITATION DISTRICT NUMBER 4 OF ORANGE COUNTY, hereinafter called "DISTRICT" pursuant to Resolution Number 1552 adopted by the City on the 15th day of May, 1967 and Resolution Number 67-1 adopted by the DISTRICT on the 5th day of June, 1967.

WHEREAS, the District was formed on September 6, 1966, to provide services as authorized in Section 4700 et seq of the State of California Health and Safety Code; and

WHEREAS, the District does not own or operate sewer treatment facilities; and

WHEREAS, the City owns and is capable of operating a sewer treatment facility with a capacity of under 1,000,000 gallons per day; and

WHEREAS, the District desires to enter into an agreement with the City whereby City performs the maintenance and operation of a sewer treatment plant serving only the area encompassed by the District;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, IT IS HEREBY MUTUALLY AGREED by and between the parties hereto as follows:

1. City shall provide a sewer treatment facility with an estimated rated capacity of between 900,000 and 1,000,000 gallons per day.
2. City shall operate said facility in a reasonable and prudent manner following the same operational policies that were followed by the City in prior years.
3. City shall have exclusive administrative control over the operation and maintenance of the sewer treatment facility and the operating personnel.
4. Personnel operating or maintaining the sewer treatment facility shall not be deemed employees of the District.
5. City shall keep proper accounting records indicating the cost of operating the sewer treatment facility. Costs of operation shall include the salaries plus payroll burden for all personnel assigned directly to the plant, a pro-ration of salaries and payroll burden for supervisory personnel, materials, supplies, contracts for services and equipment items, a pro-ration of city costs of providing accounting, purchasing, personnel, and other centralized supporting services, and all consulting engineering fees incurred on behalf of the treatment plant when said fees were incurred or agreed upon subsequent to July 1, 1967.

6. District shall pay to the City the operational cost of the plant for the term of this contract as defined in Paragraph 5 herein upon demand of the City.

7. District shall pay to the City the sum of \$1.00 for use of the sewer treatment facilities existing as of July 1, 1967.

8. District shall pay to the City the cost of all improvements, engineering costs for improvements to the sewer treatment plant which are incurred or for which contracts have been entered into during the term of this agreement, provided said contracts have prior approval of the District.

9. District shall pay to City all other costs incurred by City on behalf of District when such are approved by District and shall repay to City any and all other funds that may from time to time be advanced to District for District Board of Directors expense, general management expense and attorney fees.

10. District shall file with City a liability insurance policy, naming the City as an added insured, in the minimum amounts of \$300,000/\$500,000 public liability and \$100,000 property damage. If District does not secure such an insurance policy, City shall have the right to secure such a policy on behalf of the District and consider the cost of such a policy to be an operational cost.

11. City shall not be obligated to accept sewerage flows beyond the operational capacity of the sewer treatment facility as the plant existed on July 1, 1967, or as it may thereafter be improved.

12. The term of this agreement shall commence on July 1, 1967, and shall terminate at Midnight on June 30, 1968.

Date

June 16, 1967

By

Roy E. Sumner
Chairman

COUNTY SANITATION DISTRICT
NUMBER 4 OF ORANGE COUNTY

CITY OF SEAL BEACH

Date

June 16, 1967

By

Lee Risner
Lee Risner, City Manager

A G R E E M E N T

THIS AGREEMENT is made and entered into this 6th day of Feb. 1967, by and between the

CITY OF SEAL BEACH, CALIFORNIA,
a Charter City, hereinafter
referred to as "City"

and

COUNTY SANITATION DISTRICT
NUMBER 4 OF ORANGE COUNTY,
hereinafter referred to as
"DISTRICT"

pursuant to authorization by the City Council of the City of Seal Beach on January 16, 1967, and County Sanitation District Number 4 of Orange County on February 6, 1967.

WHEREAS, On November 12, 1966, City and District did enter into an agreement whereby the City performs the maintenance and operation of a sewer treatment plant serving only the area encompassed by the District; and

WHEREAS, said agreement provides for the District to pay to the City the cost of all improvements and engineering costs connected with said sewer treatment plant; and

WHEREAS, City has under consideration the rezoning of certain property which will result in the development of said property and thereby increase the sewage flows to said sewer treatment plant; and

WHEREAS, Developer of the property proposed to be rezoned has agreed to pay to City the sum of Two Hundred Twenty Five Dollars (\$225) per residential lot, and for each three thousand three hundred (3,300) square feet of commercial and recreational property (Lots 42 and 67 of Tract 6345) for expanding sewage treatment facilities in a manner that will enable the sewer treatment plant to handle the sewage flows resulting from said subdivision development.

NOW, THEREFORE, in consideration of covenants herein contained, IT IS MUTUALLY AGREED by and between the parties hereto as follows:

1. City agrees to deposit funds received from Suburbia, Inc., developer of property described in Exhibit A, attached hereto and made a part hereof, which funds are designated for financial assistance for the improvement of the present sewer treatment plant serving the area encompassed by District into the General Fund - Special Sanitation Reserve. Said funds are to be paid to the City by Suburbia, Inc., at the time of approval of final tract maps 6345 and 6346 and are to be in the amount of Two Hundred Twenty Five Dollars (\$225) for each residential lot and for each three thousand three hundred (3,300) square feet of commercial property and/or recreational property (excluding Lot A of Tract 6346 and all areas being deeded to City).

2. City agrees to utilize the funds deposited as required in Paragraph 1 to modify and improve the sewer treatment plant which is operated by City, and which serves District.

3. City agrees that in computing the cost of improving the sewer treatment plant, that the District shall be charged the total amount of the cost of said improvements including engineering fees less the amount received by City from Suburbia, Inc., as specified in Paragraph 1, and less any financial assistance received under PL 86-660. The resulting amount shall be referred to as net cost.

4. District agrees to pay to City the net cost of the improvements to the sewer treatment plant serving District, as charged to District by City under provisions of Paragraph 3 in the following manner:

a. The first payment shall be due Jan. 1, 1968, and shall be equal to twenty (20) per cent of the net cost of improving the sewer treatment plant.

b. The remaining eighty (80) per cent, together with simple interest at the rate of four (4) per cent per annum computed from Jan. 1, 1968, shall be paid in four (4) successive equal installments due January 1, 1969, January 1, 1970, January 1, 1971, and January 1, 1972.

Executed with all the formalities required by law on the date first appearing herein.

CITY OF SEAL BEACH

By

Les Biser
City Manager

COUNTY SANITATION DIST. #4
Of Orange County

By

Lloyd E. Summers
Chairman

A G R E E M E N T

THIS AGREEMENT made and entered into this 12th day of October, 1966, by and between the CITY OF SEAL BEACH, CALIFORNIA, a charter city, hereinafter called "CITY" and COUNTY SANITATION DISTRICT NUMBER 4 OF ORANGE COUNTY, hereinafter called "District" pursuant to Resolution Number 1467 adopted by the City on the 18th day of July, 1966, and Resolution Number 66-2 adopted by the District on the 12th day of November, 1966.

WHEREAS, the District was formed on September 6, 1966, to provide services as authorized in Section 4700 et seq of the State of California Health and Safety Code; and

WHEREAS, the District does not own or operate sewer treatment facilities; and

WHEREAS, the City owns and is capable of operating a sewer treatment facility with a capacity of under 1,000,000 gallons per day; and

WHEREAS, the District desires to enter into an agreement with the City whereby City performs the maintenance and operation of a sewer treatment plant serving only the area encompassed by the District; and

WHEREAS, the District does not have financial resources during the current fiscal year ending June 30, 1967, to pay for the operation, maintenance, and repair of a sewer treatment plant or funds for constructing treatment facilities; and

WHEREAS, the City is willing to accept a deferred payment plan;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, IT IS HEREBY MUTUALLY AGREED by and between the parties hereto as follows:

1. City shall provide a sewer treatment facility with an estimated rated capacity of between 900,000 and 1,000,000 gallons per day.
2. City shall operate said facility in a reasonable and prudent manner following the same operational policies that were followed by the City in prior years.
3. City shall have exclusive administrative control over the operation and maintenance of the sewer treatment facility and the operating personnel.

4. Personnel operating or maintaining the sewer treatment facility shall not be deemed employees of the district.

5. City shall keep proper accounting records indicating the cost of operating the sewer treatment facility. Costs of operation shall include the salaries plus payroll burden for all personnel assigned directly to the plant, a pro ration of salaries and payroll burden for supervisorial personnel, materials, supplies, contracts for services and equipment items with a value of less than \$2,000, a pro ration of city costs of providing accounting, purchasing, personnel and other centralized supporting services, and all consulting engineering fees incurred on behalf of the treatment plant when said fees were incurred or agreed upon subsequent to July 1, 1966, but prior to the effective date of this agreement.

6. District shall pay to the City the operational cost of the plant for the term of this contract. The first payment shall be due January 1, 1968, and shall be equal to 20 per cent of the operation cost incurred during the term of this agreement. The remaining 80 per cent together with simple interest at the rate of 4 per cent per annum computed from January 1, 1968, shall be paid in four successive equal installments due January 1, 1969, January 1, 1970, January 1, 1971, and January 1, 1972.

7. District shall pay to the City the sum of \$1.00 for use of the sewer treatment facilities existing as of July 1, 1966.

8. District shall pay to the City the cost of all improvements, engineering costs for improvements to the sewer treatment plant which are incurred or for which contracts have been entered into during the term of this agreement, provided said contracts have prior approval of the District. District shall make payments to the City for improvements and necessary engineering costs of such improvements in the same manner, method, and percentages as payments are made for operating costs.

9. District shall pay to City all other costs incurred by City on behalf of District when such are approved by District and shall repay to City any and all other funds that may from time to time be advanced to District for District Board of Directors expense, general management expense and attorney fees.

10. District shall file with City a liability insurance policy, naming the City as an added insured, in the minimum amounts of \$300,000/\$500,000 public liability and \$100,000 property damage. If District does not secure such an insurance policy, City shall have the right to secure such a policy on behalf of the District and consider the cost of such a policy to be an operational cost.

11. City shall not be obligated to accept sewerage flows beyond the operational capacity of the sewer treatment facility as the plant existed on July 1, 1966, or as it may thereafter be improved.

12. The term of the agreement shall commence upon the execution of said agreement by the District and shall terminate at Midnight on June 30, 1967

COUNTY SANITATION DISTRICT
NUMBER 4

By

Ray E. Summers
Chairman

CITY OF SEAL BEACH

By

F. W. Sullivan
City Manager

AMENDMENT NO. 1 TO THE JOINT EXERCISE
OF POWERS AGREEMENT BETWEEN THE CITY OF
SEAL BEACH AND ORANGE COUNTY SANITATION
DISTRICT NO. 4 CREATING THE SEAL BEACH
ADMINISTRATION BUILDING AUTHORITY.

WHEREAS, the City of Seal Beach (hereinafter called "City") and Orange County Sanitation District No. 4 (hereinafter called "District"), have entered into that certain document entitled JOINT EXERCISE OF POWERS AGREEMENT BETWEEN THE CITY OF SEAL BEACH AND ORANGE COUNTY SANITATION DISTRICT NO. 4 CREATING THE SEAL BEACH ADMINISTRATION BUILDING AUTHORITY, dated as of April 1, 1968; and

WHEREAS, City and District are desirous of amending said Joint Exercise of Powers Agreement;

NOW, THEREFORE, City and District, for and in consideration of the mutual promises and agreements set forth herein, DO AGREE AS FOLLOWS:

Section 1. Section 6 of said Joint Exercise of Powers Agreement is amended to read as follows:

"SECTION 6 - Disposition of Assets.

At the end of the term hereof or upon earlier termination of this Agreement, as set forth in Section 2 hereof, the real property of the Authority shall vest in City, and shall thereafter remain the sole property of City. Any other property, including surplus money, on hand at such time shall be returned to City and District in proportion to the contributions made by each. For purposes of this computation, the aggregate of all moneys, property and the fair value of all services rendered during the entire terms shall be deemed to constitute the contributions made by each."

Section 2. Section 8 of said Joint Exercise of Powers Agreement is amended to read as follows:

"SECTION 8. Right and Obligation of District.

District shall have the right to use space in the project for administrative and meeting purposes. District shall pay to City annually, as its part of the year-to-year costs of using space in the project and of operating and maintaining the Project, the sum of two thousand five hundred dollars (\$2,500.00). Such sum shall be due and payable by District to City on the first day of each fiscal year."

Section 3. Section 12 of the said Joint Exercise of Powers Agreement is amended to read as follows:

"SECTION 12. Lease and Operation by City.

The Authority shall lease the Project to City for a term to end prior to the time the lease of the Site to the Authority ends. Such lease of the Project to City shall not result in a merger of the interest of the Authority under the lease of the Site to the Authority so long as revenue bonds of the Authority are outstanding. City shall pay an annual rent to the Authority in an amount which will be not less than the amount required by the Authority each year to discharge all of its debts and obligations, including, without limitation, payment of the principal of and interest on its revenue bonds. City shall operate and maintain the Project in such manner as shall comply with any covenants which the Authority makes in the proceedings for the issuance of revenue bonds. Except for such payments as District is required to make to City in accordance with Section 8 of this Agreement, City shall operate and maintain the Project at its own cost and expense. City reserves the right to determine the methods and standards of operation.

City may in the appropriate circumstances when required hereunder: (a) make contributions from its treasury for the purposes set forth herein, (b) make payments of public funds to defray the cost of such purposes, (c) make advances of public funds for such purposes, such advances to be repaid as provided herein, or (d) use its personnel, equipment or property in lieu of other contributions or advances. Payments by City which are

not necessary for obligations of the Authority or committed for other purposes under the resolution authorizing the issuance of revenue bonds of the Authority and which should be repaid to City by the Authority hereunder shall be so repaid by refunding the amount thereof to City. The provisions of Government Code 6513 are hereby incorporated into this Agreement."

In Witness Whereof, the parties hereto have caused this Agreement to be executed and attested by their proper officers thereunto duly authorized, and their official seals to be hereto affixed, as of the 21st day of October, 1968.

CITY OF SEAL BEACH

By Loyd E. Summers
Mayor

ATTEST:

Jordys Weir
City Clerk

I Hereby Approve the form and legality of the foregoing Agreement this _____ day of _____, 1968.

City Attorney

ORANGE COUNTY SANITATION
DISTRICT NO. 4

By John B. Hamilton
Chairman of the Board of
Directors.

ATTEST:

Jordys Weir
Secretary

(SEAL)

JOINT EXERCISE OF POWERS AGREEMENT
BETWEEN THE CITY OF SEAL BEACH AND
ORANGE COUNTY SANITATION DISTRICT
NO. 4 CREATING THE SEAL BEACH AD-
MINISTRATION BUILDING AUTHORITY.

THIS AGREEMENT, dated for convenience as of April 1, 1968, is between the CITY OF SEAL BEACH, a municipal corporation duly organized and existing under the laws of the State of California (hereinafter called "City"), and ORANGE COUNTY SANITATION DISTRICT NO. 4, a public corporation duly organized and existing under the laws of the State of California (hereinafter called "District");

W I T N E S S E T H:

WHEREAS, City and District are empowered by law to acquire, construct, maintain and operate a building to provide offices and facilities for the orderly administration of their respective functions in providing services to the public; and

WHEREAS, City and District are desirous of obtaining an administration building to provide additional offices and facilities; and

WHEREAS, City and District deem it advisable to enter into an agreement to provide a vehicle for financing the construction of an administration building;

NOW, THEREFORE, City and District, for an

in consideration of the mutual promises and agreements set forth herein, DO AGREE AS FOLLOWS:

SECTION 1. Purpose.

This Agreement is made pursuant to the provisions of Article 1, Chapter 5, Division 7, Title 1 of the Government Code of the State of California (commencing with Section 6500, hereinafter called "Act") relating to the joint exercise of powers common to public agencies, in this case being City and District City and District each possess the powers referred to in the recitals hereof. The purpose of this Agreement is to exercise such powers by acquiring, constructing, maintaining, operating and leasing an administration building for City and District services, including offices and meeting facilities, and appurtenances, accessory structures, walks and landscaping necessary or convenient for the foregoing (said facilities and appurtenances are herein referred to as "Project"). Such purpose will be accomplished and said common powers exercised in the manner set forth in this Agreement.

SECTION 2. Term.

This Agreement shall become effective as of the date hereof and shall continue in full force and effect for a period of thirty-five (35) years from the date hereof; provided, that this Agreement shall terminate when the revenue bonds issued as provided in this Agreement, and the interest thereon, have been paid in full

or adequate provision for such payments have been made in accordance with the proceedings for the issuance thereof; and provided further, that this Agreement shall terminate three (3) years from the date hereof in the event no revenue bonds shall have been issued on or before said date.

SECTION 3. Authority.

A. Creation of Authority.

Pursuant to the provisions of the Act, there is hereby created a public entity to be known as "Seal Beach Administration Building Authority" (hereinafter called "Authority"), and said Authority shall be a public entity separate and apart from City and District. The debts, liabilities and obligations of the Authority do not constitute debts, liabilities or obligations of any party to this Agreement.

B. Governing Board.

The Authority shall be administered by a governing board of five (5) members, each serving in their individual capacities as members of the governing board. Three (3) members shall be appointed by the City Council of City, subject to the approval of the Board of Directors of District, and two (2) members shall be appointed by the Board of Directors, subject to the approval of the City Council. All voting power shall reside in the governing board.

Members of the governing board shall serve for

a four (4) year term; provided, that initial appointments shall be for a staggered period to assure continuity, as follows: City shall appoint two (2) of its initial members for a two (2) year term and the other initial member for a four (4) year term, District shall appoint one (1) of its initial members for a two (2) year term and the other initial member for a four (4) year term. The term of all of the initial members shall be deemed to commence on April 1, 1968. Members of the governing board shall serve until their respective successors are appointed and qualified. Members appointed by City and District, respectively, may be removed from office by the appointing entity without the approval of the other entity. Any vacancy in the governing board caused by the removal, death or resignation of any member, or in any other manner, shall be filled by the entity that appointed said member, subject to the approval of the other entity.

C. Meetings of the Governing Board.

(1) Regular Meetings.

The governing board shall provide for its regular, adjourned regular and special meetings; provided, that it shall hold at least one regular meeting each year. The date, hour and place of the regular meetings shall be fixed by resolution of the governing board and a copy of such resolution shall be filed with City and District.

(2) Ralph M. Brown Act.

All meetings of the governing board, including, without limitation, regular, adjourned regular and special meetings, shall be called, noticed, held and conducted in accordance with the provisions of the Ralph M. Brown Act (commencing with Section 54950 of the Governing Code).

(3) Minutes.

The Secretary of the governing board shall keep minutes of the regular, adjourned regular and special meetings of the governing board, and shall, as soon as possible after each meeting, cause a copy of the minutes to be forwarded to each member of the governing board and to City and District.

(4) Quorum.

A majority of the members of the governing board shall constitute a quorum for the transaction of business, except that less than a quorum may adjourn from time to time; provided, that the affirmative vote of at least three (3) members of the governing board shall be required for the approval of any resolution as to which action of the governing board is required.

D. Officers.

City shall appoint the chairman of the governing board of the Authority for a term ending March 31,

1969, and thereafter, prior to each successive March 31, said governing board shall elect its chairman for the following year. The governing board shall also elect a vice-chairman whose term shall be the same as that of the chairman, and said governing board shall appoint a secretary who may, but need not, be a member of the governing board. The administrative officer of the Authority shall be the city manager of City. Except as hereinafter provided, the treasurer of the Authority shall be the duly appointed and acting treasurer of City serving ex officio as treasurer of the Authority. The governing board may appoint legal counsel who may be the duly appointed, qualified and acting city attorney, or his duly authorized deputy, serving ex officio as attorney for the governing board. The governing board shall have the power, with the prior consent of City, to appoint and employ such other officers, employees consultants, advisors and independent contractors as it may deem necessary.

E. Rules.

The members of the governing board may adopt, from time to time, such rules and regulations for the conduct of its meetings and affairs as may be required.

SECTION 4. Powers.

The Authority shall have the powers common to City and District set forth in Section 1 of this Agreement, to wit: the powers necessary or convenient

for the acquisition and construction of the Project. The Authority is hereby authorized, in its own name, to do all acts necessary for the exercise of said common powers for said purpose, including, but not limited, to any or all of the following: to make and enter into contracts, to employ agents and employees, to acquire, construct, manage, maintain and operate any buildings, works or improvements, to acquire, hold or dispose of property within the County of Orange, to lease, in any manner to carry out the purposes hereof, the Project or any part thereof, to incur debts, liabilities or obligations which do not constitute a debt, liability or obligation of City or District, and to sue and be sued in its own name. Such powers shall be exercised in the manner provided in the Act, and, except as expressly set forth herein, subject only to such restrictions upon the manner of exercising such powers as are imposed upon City in the exercise of similar powers. The Authority may also issue revenue bonds pursuant to Article 2, Chapter 5, Division 7, Title 1 of the Government Code of the State of California (commencing with Section 6540, hereinafter called "Bond Act"), and any other applicable laws of the State of California.

SECTION 5. Fiscal Year.

For the purposes of this Agreement the term "fiscal year" shall mean the fiscal year as established from time to time by City, being, at the date of this

Agreement, the period from July 1 to and including the following June 30.

SECTION 6. Disposition of Assets.

At the end of the term hereof or upon the earlier termination of this Agreement, as set forth in Section 2 hereof, the real property of the Authority shall automatically vest in City, and shall thereafter remain the sole property of City. Any other property, including surplus money, on hand at such time shall be returned to City and District in proportion to the contributions made by each. For purposes of this computation the aggregate of all moneys, property and the fair value of all services rendered during the entire term shall be deemed to constitute the contributions made by each.

SECTION 7. Acquisition of Land or Interest Thereon.

City is the owner in fee simple of certain real property described in Exhibit A attached hereto and incorporated herein (said real property herein referred to as "Site"). City agrees to lease the Site to the Authority, subject to conditions, reservations, exceptions and rights of way which are of record; provided, that City may reserve such subsurface rights and surface easements as are necessary or convenient for other city purposes. The Site shall be leased to the Authority for a period not to exceed thirty-two (32) years, or until earlier terminated as provided in the lease, for a consideration of one dollar (\$1.00) per annum.

SECTION 8. Obligation of District.

District shall pay to City annually, as its part of the year to year costs of operating and maintaining the Project, the sum of two thousand five hundred dollars (\$2,500). Such sum shall be due and payable by District to City on the first day of each fiscal year.

SECTION 9. Plans and Specifications

City has employed architects for the Project and said architects are hereby approved by District. District has approved the general concept of the Project and no further approval of District shall be required. As between the parties only the City's building code shall be applied to the construction of the Project. City shall cause the architects to prepare plans and specifications for the construction of the Project and to provide general administrative supervision of the construction and periodic inspection of the work. The Authority shall, when it has funds available therefor, reimburse City for all costs and expenses incurred in connection with the preparation of said plans and specifications from the proceeds of the revenue bonds.

SECTION 10. Construction of Project.

City, as agent for the Authority, shall contract for the construction of the Project and carry such construction through to completion. Authority shall pay or reimburse City, as the case may be, for costs incurred and payments made by City in connection with construction of the Project and the costs incurred and payments

made by City in connection with re-location of utilities necessary or convenient for the purpose of preparing the Site for construction of the Project. City shall let the construction contract or contracts by competitive bidding. Such construction contracts shall be let and administered and the work shall be performed in accordance with City standards in substantially the same manner and upon the same conditions as are normally followed by City in constructing its own buildings. The trustee appointed pursuant to the resolution for the issuance of bonds of the Authority shall administer the construction funds for the Project in accordance with the applicable procedures set forth in said resolution approved by City. Such procedure shall provide, in substance, that City shall be paid on demand such amounts as it requires to meet construction payments a reasonable time prior to the time when such payments are due, upon such demand forms as City shall establish.

SECTION 11. Revenue Bonds.

The Authority shall issue revenue bonds in accordance with the provisions of the Bond Act for the purpose of exercising its powers and raising funds necessary to carry out its obligations under this Agreement. The sale and issuance of such revenue bonds by the Authority shall be subject to the prior approval by resolution of the City Council. Revenue bonds may be sold by public competitive bidding or, with the approval of the City Council, by private negotiated sale.

The services of Bond Counsel, Financing Consultant and other consultants and advisors working on the Project, and/or its financing shall be used by the Authority. The fees and expenses of such counsel, consultants and advisors shall be paid from the proceeds of the revenue bonds and City shall be reimbursed from such proceeds for any portion of such fees and expenses which it has paid prior to the issuance of such revenue bonds.

SECTION 12. Lease and Operation by City.

The Authority shall lease the Project to City for a term to end at the same time the lease of the Site to the Authority ends. City shall pay an annual rent to the Authority in an amount which will be not less than the amount required by the Authority each year to discharge all of its debts and obligations, including, without limitation, payment of the principal of and interest on its revenue bonds. City shall operate and maintain the Project in such manner as shall comply with any covenants which the Authority makes in the proceedings for the issuance of revenue bonds. Except for such payments as District is required to make to City in accordance with Section 8 of this Agreement, City shall operate and maintain the Project at its own cost and expense. City reserves the right to determine the methods and standards of operation.

City may in the appropriate circumstances when

required hereunder: (a) make contributions from its treasury for the purposes set forth herein, (b) make payments of public funds to defray the cost of such purposes, (c) make advances of public funds for such purposes, such advances to be repaid as provided herein, or (d) use its personnel, equipment or property in lieu of other contributions or advances. Payments by City which are not necessary for obligations of the Authority or committed for other purposes under the resolution authorizing the issuance of revenue bonds of the Authority and which should be repaid to City by the Authority hereunder shall be so repaid by refunding the amount thereof to City. The provisions of Government Code 6513 are hereby incorporated into this Agreement.

SECTION 13. Accounts and Reports.

To the extent not covered by the duties assigned to the trustee, the treasurer of the Authority shall establish and maintain such funds and accounts as may be required by good accounting practice or by any provision of the resolution for the issuance of bonds of the Authority. The books and records of the Authority in the hands of the trustee or the treasurer shall be open to inspection at all reasonable times by representatives of City and District. The trustee appointed under the resolution for the issuance of revenue bonds of the Authority shall establish suitable funds, furnish financial reports and provide suitable accounting procedures to carry out the provisions of said resolution. Said

trustee may be given such duties in said resolution as may be desirable to carry out this Agreement.

SECTION 14. Funds.

Subject to the applicable provisions of the resolution for the issuance of revenue bonds of the Authority, which may provide for a trustee to receive, have custody of and disburse the Authority funds, the treasurer of the Authority shall receive, have the custody of and disburse the Authority funds (i) pursuant to the accounting procedures developed under Section 13 hereof, and (ii) as nearly as possible in accordance with normal City procedures, shall make the disbursements required by this Agreement or to carry out any of the provisions or purposes of this Agreement.

SECTION 15. Notices.

Notices hereunder shall be sufficient if delivered to:

City	- -	City Clerk
District	-	Secretary of the Board of Directors
Authority	-	Secretary - At such address as Authority shall designate for such purpose.

SECTION 16. Miscellaneous

The section headings herein are for convenience only and are not to be construed as modifying or governing the language in the section referred to.

Whenever in this Agreement any consent or

approval is required, the same shall not be unreasonably withheld.

This Agreement is made in the State of California under the Constitution and laws of such State and is to be so construed.

SECTION 17. Partial Invalidity.

If any one or more of the terms, provisions, promises, covenants or conditions of this Agreement shall to any extent be adjudged invalid, unenforceable, void or voidable for any reason whatsoever by a court of competent jurisdiction each and all of the remaining terms, provisions, promises, covenants and conditions of this Agreement shall not be affected thereby, and shall be valid and enforceable to the fullest extent permitted by law.

SECTION 18. Successors.

This Agreement shall be binding upon and shall inure to the benefit of the successors of the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and attested by their proper officers thereunto duly authorized, and their official seals to be hereto affixed,

as of the day and year first above written.

THE CITY OF SEAL BEACH

By


Mayor

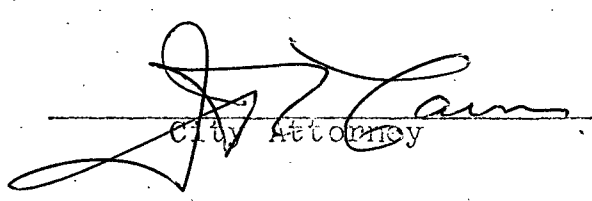
ATTEST:

By


City Clerk

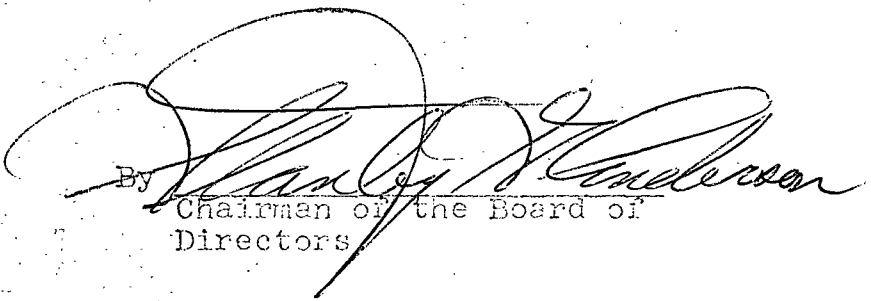
(SEAL)

I HEREBY APPROVE the form and legality of
the foregoing Agreement this 16th day of April,
1968.


City Attorney

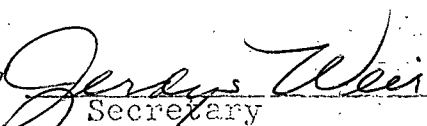
ORANGE COUNTY SANITATION
DISTRICT NO. 4

By


Chairman of the Board of
Directors

ATTEST:

By


Secretary

(SEAL)

AGREEMENT

THIS AGREEMENT, is made and entered into, to be effective the ____ day of

_____, 2003, by and between:

ORANGE COUNTY SANITATION DISTRICT, hereinafter referred to as "OCSD";

AND

City of Seal Beach., hereinafter referred to as "AGENCY";

collectively referred to herein as the "Parties".

RECITALS

WHEREAS, OCSD is the regional agency with primary responsibility for collecting, treating, and disposing of wastewater in central and north Orange County, California, and within the jurisdiction of the California Regional Water Quality Control Board – Santa Ana Region, hereinafter referred to as "RWQCB-SA"; and

WHEREAS, from January 2000 through August 2001, there were approximately 250 sewer system overflows ("SSOs") within Orange County, of which almost 75 percent were from sewer collection systems owned by cities and local wastewater agencies. During this same period, there were 31 beach closures due to SSOs, of which 17 were from systems owned by cities and local wastewater agencies. The most prevalent cause of the SSOs is grease accumulation in the small to medium sewer lines commonly known as and hereinafter referred to as "local collector sewers." These local collector sewer lines are owned and operated by cities and local wastewater agencies, with the exception of those located in the unincorporated area

known as North Tustin and in the City of Tustin, where OCSD also provides the local collector sewer service; and

WHEREAS, the 2000-01 Orange County Grand Jury ("Grand Jury") investigated SSOs County-wide and published its Findings in April, 2001 in a Report entitled, *Sewage Spills, Beach Closures-Trouble in Paradise*. The Grand Jury identified as the main cause of SSOs, sewer pipes clogged with grease from restaurants and high-density residential areas (e.g., apartment complexes). The Grand Jury also suggested that a regional coalition be formed to resolve the SSO problems and develop a regional, consolidated approach to controlling grease, which, if implemented, would encompass areas outside of the jurisdiction of the RWQCB-SA and within the jurisdiction of the Regional Water Quality Control Board-San Diego ("RWQCB-SD"); and

WHEREAS, to address a portion of the County-wide SSO incidents, the RWQCB-SA has adopted its Order No. R8-2002-0014, General Waste Discharge Requirements (the "Order"), requiring cities and local wastewater agencies within its jurisdiction in northern and central Orange County to monitor and control SSOs. The Order names OCSD as one of 31 Co-Permittees and as a facilitator agency to assist in obtaining regional compliance with the Order by all Co-Permittees. The Co-Permittees include 16 cities and 13 local wastewater agencies that provide sewer service in northern and central Orange County (although the City of Los Alamitos is named in the Order, the RWQCB-SA is expected to remove it from the Order because it does not provide sewer service in its jurisdiction; sewer service in Los Alamitos is provided by the Rossmoor-Los Alamitos Area Sewer District). Agency is one of the Co-Permittees.

As part of the Order, each Co-Permittee is also required to develop a "Fats, Oil, and Grease Source Control Program ("FOG Control Program") by December 30, 2004. To enable the development of FOG Control Programs that are practical, equitable, and implementable by all Co-Permittees, OCSD has proposed to conduct a study to evaluate FOG control technologies, practices, and programs, and based thereon, to develop technical and administrative practices and procedures, together with the elements or building blocks to implement the FOG Control Programs; and

WHEREAS, the Co-Permittees have determined that the interests of all developed areas within the County of Orange would be best met by conducting a County-wide, comprehensive FOG Control Study ("Study") to develop a consistent, practical, and equitable approach to FOG control throughout Orange County, including the jurisdiction of Co-Permittees. The Study was divided into two phases. Phase I is a research Study that evaluates the current FOG control practices, technologies, and programs in the United States. Phase II is a follow up to the findings of Phase I and would involve field-testing of selected FOG control technologies identified in Phase I before they are considered for adoption in local FOG control programs and ordinances. Additional follow-up issues may be addressed in Phase II, subject to budget constraints. Some additional follow-up issues include: Efficient Kitchen Best Management Practices; Education and Outreach; Program Costs, Fees, and Incentives; Monitoring and Enforcement; Standardized Grease Interceptor Plumbing, Design, and Sizing Criteria; Waste Grease Tracking; and Private Lateral Sewer Line Cleaning Notification; and

WHEREAS, the Study, managed centrally by OCSD, will result in significant cost savings to the Co-Permittees. The expected cost of this consolidated approach to develop and conduct the Study, is \$600,000.00, which represents a significant cost savings to the Co-Permittees compared with the estimated cumulative cost of \$3,000,000.00 to \$5,000,000.00 if all Co-Permittees conducted individual studies; and

WHEREAS, to meet the December 30, 2004 deadline, interim schedules, resource requirements, and other constraints, OCSD has contracted for professional services with Environmental Engineering & Contracting, Inc. ("EEC"), to conduct the 2-Phase Study. The cost for Phase I of the Study was \$268,000.00. Phase I commenced in May 2002, and was completed during Fiscal Year 2002-03. Phase II will commence on or about December 1, 2003, and will be completed during Fiscal Year 2003-2004. The cost for Phase II of the Study is approximately \$300,000.00; and

WHEREAS, the parties have agreed in principle to contribute towards the cost of performing Phase II of the Study subject to the fair-share allocation of the costs for Phase II based upon Co-Permittee population.

AGREEMENT

NOW, THEREFORE, OCSD and AGENCY agree as follows:

Section 1: OCSD shall contract with EEC for purposes of conducting Phase II of a Fats, Oils, and Grease Control Study in an amount not-to-exceed \$300,000.00.

Section 2: AGENCY acknowledges that OCSD has been designated as one of the Co-Permittees and as a facilitator among the Co-Permittees, by the RWQCB-

SA, to assist in obtaining compliance by each of the Co-Permittees with RWQCB Order No. R8-2002-0014.

Section 3: OCSD shall be solely responsible for the administration of the above-referenced Professional Services Agreement between OCSD and EEC, wherein EEC will undertake a scientific study to perform evaluations and field testing of three technologies that Phase I identified as having potential success in controlling FOG in pilot tests and applications.

Section 4: AGENCY agrees that it shall pay the sum of \$ 2,582 - to OCSD as its proportionate share, based on AGENCY's population, of the cost of Phase II of the Study. It is intended that the balance of the cost of Phase II of the Study will be paid by the other Co-Permittees according to their respective proportionate shares identified in Exhibit A attached hereto.

Section 5: AGENCY shall pay OCSD the sum due, concurrently upon execution and delivery of this Agreement.

Section 6: Upon collection by OCSD of the proportionate shares from Co-Permittees participating in the Phase II Study, if the funds collected total a sum below the estimated costs of \$300,000.00, OCSD shall determine at its own discretion to adjust the scope of the Phase II Study commensurate with the funding available. Additionally, if OCSD determines that the funding available is below the cost of a reasonable and useful Phase II Study, OCSD may, in its discretion, decline to proceed with the Study. If OCSD declines to proceed, the funds collected from the Agency pursuant to this Agreement shall be refunded by OCSD, without interest, within thirty (30) days of OCSD's decision not to proceed with the Phase II Study.

Section 7: All reasonable administrative costs to coordinate and manage the Agreement with EEC shall be borne by OCSD.

Section 8: OCSD shall be solely responsible to ensure full compliance and completion by EEC of all services within the scope of work for the Phase II Study, and approval of the Final Report from the Study shall rest in the sole discretion of OCSD.

Section 9: AGENCY shall receive a copy of the Final Report from OCSD immediately following approval and acceptance of the Report by OCSD.

Section 10: AGENCY agrees to cooperate with OCSD and representatives of EEC, in providing information as requested by OCSD and/or EEC in the performance of Phase II of the Study.

Section 11: AGENCY shall not be obligated in any manner by this Agreement, to implement any finding or recommendation set forth in the Final Report for the Phase II Study.

Section 12: OCSD shall administer all payments to EEC due under the terms of the Phase II Agreement between OCSD and EEC from the funds collected from Co-Permittees pursuant to this Agreement.

Section 13: It is the intention of OCSD and AGENCY that each party shall bear responsibility for the negligence, if any, of its respective officers, employees, agents, representatives, and successors-in-interest.

OCSD agrees to hold harmless, defend, and indemnify AGENCY, its officers, employees, agents, representatives, and successors-in-interest against any and all loss, damage, cost, or expense that AGENCY, its officers, employees, agents, representatives, and successors-in-interest may incur or be required to pay by any

reason of any injury or property damage caused or incurred by OCSD or their officers, employees, agents, representatives, or contractors arising out of or in connection with this contract, excepting that portion of such loss, damage, cost, or expense caused or incurred by AGENCY.

AGENCY agrees to hold harmless, defend, and indemnify OCSD, its officers, employees, agents, representatives, and successors-in-interest against any and all loss, damage, cost, or expense that OCSD, its officers, employees, agents, representatives, and successors-in-interest may incur or be required to pay by any reason of any injury or property damage caused or incurred by AGENCY or their officers, employees, agents, representatives, or contractors arising out of or in connection with this contract, excepting that portion of such loss, damage, cost, or expense caused or incurred by OCSD.

This indemnity does not apply to any work, action, or decisions by OCSD or AGENCY to implement any part or provision of the Program, as recommended by contractor, EEC.

Section 14: Each Party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and bind each respective Party.

Section 15: All notices, demands, invoices, and written communications required to be provided under this Agreement, shall be delivered at the following addresses or such other addresses as the Parties may designate by written notice:

If to AGENCY:

City of Seal Beach
Attn: John Bahorski
211 8th St.
Seal Beach, CA 90740

With Copy To: City of Seal Beach
Attention: Doug Dams
211 8th St.
Seal Beach, CA 90740

If to OCSD: Orange County Sanitation District
Attention: Mark Kawamoto
P.O. Box 8127
Fountain Valley, California 92728-8127

With Copy To: Director of Technical Services
Orange County Sanitation District
P.O. Box 8127
Fountain Valley, California 92728-8127

Depending on the method of transmittal, notice shall be deemed received as follows:
by facsimile or other electronic transmission, as of the date and time sent, based on
electronic confirmation of receipt; or by messenger, as of the date delivered; or by U.S.
Mail first class postage prepaid, as of seventy-two (72) hours after deposit in the U. S.
Mail.

Section 16: It being agreed that both Parties or their agents have participated
in the preparation of this Agreement, the language of this Agreement shall be
construed according to its fair meaning, and not strictly for or against any Party. Any
term referencing time, days, or period for performance shall be deemed calendar days
and not work days.

Section 17: No supplement, modification, or amendment of this Agreement
shall be binding unless executed in writing and signed by the Parties.

Section 18: No waiver of any default shall constitute a waiver of any other
default or breach, whether of the same or other covenant or condition. No waiver,

benefit, privilege, or service voluntarily given or performed by a Party shall give the other Party any contractual right by custom, estoppel, or otherwise.

Section 19: Each and all of the covenants and conditions shall be binding on and shall inure to the benefit of the Parties, and their successors, heirs, personal representatives, or assigns. This Section shall not be construed as an authorization for any Party to assign any right or obligation under this Agreement.

Section 20: Should any part of this Agreement be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid, or beyond the authority of either party to enter into or carry out, such decision shall not affect the validity of the remainder of this Agreement, which shall continue in full force and effect, provided that the remainder of this Agreement, absent the unexcised portion, can be reasonably interpreted to give effect to the intentions of the parties.

Section 21: Time is of the essence in this Agreement, and the Parties agree to execute all documents and proceed with due diligence to complete all covenants and conditions.

Section 22: This Agreement may be signed in counterparts, each of which shall constitute an original and which collectively shall constitute one instrument.

Section 23: This Agreement contains the entire Agreement between the Parties and supersedes any prior oral or written statements or Agreements between the Parties.

Section 24: This Agreement shall become effective on the date first set forth above.

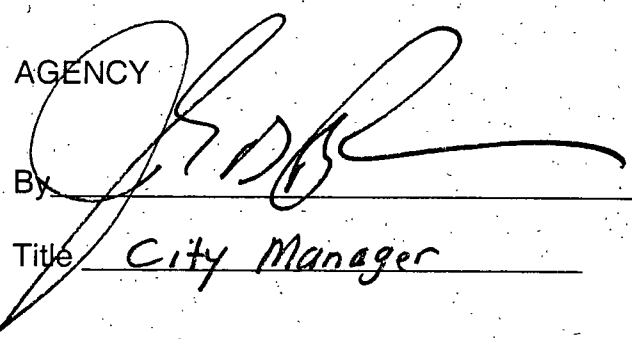
[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, OCSD and AGENCY have each caused this Agreement to be executed by its duly authorized representative on the day and year set forth above.

ORANGE COUNTY SANITATION DISTRICT

By _____
Blake P. Anderson, General Manager

By _____
Secretary, Board of Directors

AGENCY
By  _____
Title City Manager

By _____
Title City Clerk

Attachment: FOG Phase II Cost Fair Share Allocations

FOG PHASE II COST FAIR SHARE ALLOCATIONS

Jurisdiction	Population	Cost(Pop) ¹
Anaheim	334,700	\$34,985
Brea	38,850	\$4,061
Buena Park	79,800	\$8,341
Costa Mesa	110,700	\$11,571
Cypress	47,250	\$4,939
Fountain Valley	55,900	\$5,843
Fullerton	129,300	\$13,515
Garden Grove	168,600	\$17,623
Huntington Beach	194,600	\$20,341
Irvine	157,500	\$16,463
La Habra	60,700	\$6,345
La Palma	16,000	\$1,672
Los Alamitos	11,700	\$1,223
Newport Beach	77,000	\$8,049
Orange	132,900	\$13,892
Placentia	48,300	\$5,049
Santa Ana	343,700	\$35,926
Seal Beach	24,700	\$2,582
Stanton	38,100	\$3,982
Tustin	69,100	\$7,223
Villa Park	6,175	\$645
Westminster	89,700	\$9,376
Yorba Linda	24,320	\$2,542
Yorba Linda WD	36,480	\$3,813
Subtotal	2,296,075	\$240,000
County of Orange		\$30,000
OCSD		\$30,000
Grand Total		\$300,000

¹"Cost(Pop)" = Population/Total*(Cost Basis - 20%)²

²OCSD and Orange County as regional agencies agreed to contribute 10% each towards the cost of Phase II.

*pulled contract
06/09/03
(FOG control)*

Attachment

NOTICE OF INTENT FOR PARTICIPATION IN
PHASE II OF THE FOG CONTROL STUDY AND THE SSO DATABASE

Date: June 2, 2003

- The City of Seal Beach will participate in Phase II of the FOG Control Study (Study) and SSO database and agrees, therefore, to co-fund both through a "fair share" population-based formula. I understand that Agency's share is approximately \$3,789 based on a population of 24,700 and a proposed FOG Phase II and SSO Study cost of \$330,000. The SSO share is a flat fee based on the estimated \$30,000 cost of developing the database. I have reviewed the population estimate and:

- It is correct to use the funding formula

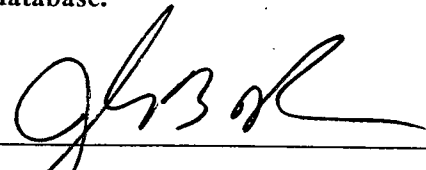
I understand that based on this input and upon receipt of the notices of intent from the co-permittees, a final decision will be made whether to proceed and a funding share estimate will be provided, based on a final evaluation of the level of participation and funding needs.

I understand Phase II administration by the Orange County Sanitation District (District) and contracting consultant services are subject to approval and authorization by the District's Board of Directors.

Please be advised that final commitment of participation by Agency is subject to approval by City Council and will occur upon Board execution of an understanding between the agency and the District. I understand that the District will not enter into a contract with the consultant conducting Phase II until all funding is received from participants.

Also, I understand that Phase II is a continuation of Phase I and, therefore, it will be conducted by the same consultant, namely Environmental Engineering and Contracting, Inc.

- The City of Seal Beach will participate in Phase II of the FOG Control Study and SSO database.



6/19/03

John Bahorski
Name (Please Print)

City Manager
Title

Return form to: Adriana Renescu, Source Control
Orange County Sanitation District
P.O. Box 8127
Fountain Valley, CA 92728-8127

STANDARD AGREEMENT FOR COLLECTION OF
SEWER CONNECTION CHARGES

THIS AGREEMENT, made and entered into this 10th day of September, 1973, by and between the City of SEAL BEACH, a municipal corporation, hereinafter called "City", and County Sanitation District No. 3 of Orange County, California, hereinafter called "District",

W I T N E S S E T H:

WHEREAS, District has by the enactment of Ordinance No. 303 established a schedule of sewer connection charges; and

WHEREAS, all or a portion of the improved territory of the District is within the city limits of City; and

WHEREAS, the City by and through its building department regulates all new construction within the City; and

WHEREAS, it is for the mutual benefit of City and District that the sewer connection charges provided for in said Ordinance No. 303 of the District be collected in a manner most expedient and least burdensome on the owners of property within the City; and

WHEREAS, the City will benefit by the construction and maintenance of sewerage facilities of the District within the city limits of City by District from the funds to be collected from said sewer connection charges.

NOW THEREFORE, it is mutually agreed as follows:

1. City as agent will and does hereby agree to issue permits and collect the charges established by District under said Ordinance No. 303, as amended from time to time.

2. District shall prescribe those classifications of charges to be collected by City.

3. City will account for the charges collected and remit to District monthly the monies so collected, except as provided in Section 6 hereof.

4. Procedures mutually agreeable to City and District shall be established for collection and remittance of said fees.

5. District does hereby appoint and nominate City and its Agents and employees as the same may be designated by City as agents of the District for the purpose of issuing permits and determining and collecting the sewer connection charges established under Ordinance No. 303 , as amended. This does not authorize City to act as agent for the General Manager or to perform the duties of the General Manager of the District as set forth and established in said Ordinance No. 303 , as amended, except as expressly set forth in this Agreement.

6. City agrees to act as agent for District as herein provided for a fee equal to five percent (5%) of the fees collected by City for permits issued pursuant to the provisions of this agreement, and District agrees to pay said fee monthly. Said five percent (5%) fee of City shall be deducted from the charges collected by City and the balance remitted to District pursuant to Section 3 herein.

7. It is agreed that at the request of either party hereto, formal renegotiation of this agreement shall be made at two years from the effective date hereof.

8. This agreement may be terminated by either party giving 180 day written notice to the other party designating a termination date, which date shall be the first day of a calendar month.

9. This agreement shall become effective on the 1st day of October, 1973.

(SEAL)

CITY OF SEAL BEACH
a municipal corporation

By Thomas E. Blackman
Mayor

By Jerry Weir
City Clerk

CITY

(SEAL)

COUNTY SANITATION DISTRICT NO. 3
of Orange County, California,
a public corporation

By Ronald L. J.
Chairman, Board of Directors

By Rayne S. Seltzer
Secretary, Board of Directors

SUPPLEMENT TO AGREEMENT FOR COLLECTION OF
SEWER CONNECTION CHARGES

1. That certain agreement entitled "Standard Agreement for Collection of Sewer Connection Charges" dated September 10, 1973 by and between the City of SEAL BEACH, hereinafter called "City", and County Sanitation District No. 3, hereinafter called "District", is hereby supplemented and amended by the addition thereto of the following agreements:

a) If the City is presented with a dispute as to the validity, reasonableness, enforcibility, or applicability of the charges agreed to be collected by it for the District, the City shall notify the District of the problem and the District shall take over the collection and enforcement of its ordinances in subject cases. It is contemplated that this shall be the procedure for serious disputes made upon some current legal right or basis as distinguished from crank-type or ill-founded disagreements.

b) The City shall not be liable to the District for its unintentional and inadvertent failure to collect a connection charge actually due District or its unintentional or inadvertent miscalculation of the amount of the charges, fee, or fees due District.

c) District hereby agrees to hold City free and harmless of any and all liability that might arise if any such fees collected by the City shall be determined to have been illegally collected.

d) District agrees to provide legal services in the defense of any action seeking to collect sewer connection fees alleged to have been illegally collected.

2. Except as herein supplemented and amended, that certain agreement hereinabove referred to in Paragraph 1 above is hereby ratified and confirmed.

DATED August 8, 1973.

COUNTY SANITATION DISTRICT NO. 3

By *Ronald L. Fox*
Chairman, Board of Directors

By *Steve Sestito*
Secretary, Board of Directors

(CITY)

By *Thomas E. Blackman*
Mayor

By *Jersey Ulin*
City Clerk

SUPPLEMENT TO AGREEMENT FOR COLLECTION OF
SEWER CONNECTION CHARGES

1. That certain agreement entitled "Standard Agreement for Collection of Sewer Connection Charges" dated September 10, 1973 by and between the City of SEAL BEACH, hereinafter called "City", and County Sanitation District No. 3, hereinafter called "District", is hereby supplemented and amended by the addition thereto of the following agreements:

a) If the City is presented with a dispute as to the validity, reasonableness, enforcibility, or applicability of the charges agreed to be collected by it for the District, the City shall notify the District of the problem and the District shall take over the collection and enforcement of its ordinances in subject cases. It is contemplated that this shall be the procedure for serious disputes made upon some current legal right or basis as distinguished from crank-type or ill-founded disagreements.

b) The City shall not be liable to the District for its unintentional and inadvertent failure to collect a connection charge actually due District or its unintentional or inadvertent miscalculation of the amount of the charges, fee, or fees due District.

c) District hereby agrees to hold City free and harmless of any and all liability that might arise if any such fees collected by the City shall be determined to have been illegally collected.

- C. Upon the effective date of this consolidation, all of the assets including but not limited to property taxes receivable from the equalization of Orange County Assessor's Tax Roll and the State Board of Equalization Tax Roll effective March 1, 1974, and all liabilities of District Number Four shall become the assets and liabilities of the consolidated district, and said consolidated district shall assume all of the contractual obligations of District Number Four including but not limited to those arising from or incurred by virtue of the Joint Exercise of Powers Agreement between City and District Number Four creating the Seal Beach Administration Building Authority.
- D. The effective date of consolidation shall be July 1, 1974.
- E. District Number Four represents and agrees that all its sewerage facilities will be transferred and conveyed to the City of Seal Beach prior to the effective date of consolidation.
- F. That all unencumbered funds, including cash and receivables of District Number Four shall be transferred to and become the property of District Number Three and shall reduce the consolidation fee as recited herein by an amount equal to that of said unencumbered funds, cash, and receivables existing as of June 30, 1974.
- G. That District Number Four shall pay District Number Three all operating costs incurred by District Number Three in treating and disposing of waste water from District Number Four prior to July 1, 1974.
- H. That District Number Three shall assume all costs of treatment of waste water from District Number Four from and after the effective date of consolidation.
- I. The City is to terminate the lease of certain city hall facilities by District Number Four reciting an annual rent of \$2,500 upon the effective date of consolidation; and to hold District Number Three harmless from any liability resulting from the assumption of the obligations of District Number Four as to the Joint Exercise of Powers Agreement.
- J. That the sewage facilities necessary to integrate the systems of District Numbers Three and Four shall be constructed and paid for from funds of District Number Four and the funds provided in Federal Grant Number C-06-0632 (formerly WPC-Cal-632).
- K. The Agency agrees to pay to the Consolidated District the consolidation fee in the sum of \$394,190., payable in five, equal, annual payments of \$78,838., beginning July 1, 1974.

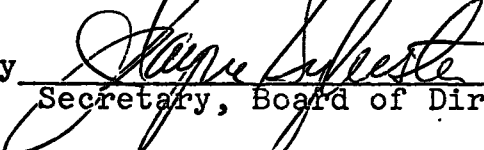
d) District agrees to provide legal services in the defense of any action seeking to collect sewer connection fees alleged to have been illegally collected.


2. Except as herein supplemented and amended, that certain agreement hereinabove referred to in Paragraph 1 above is hereby ratified and confirmed.

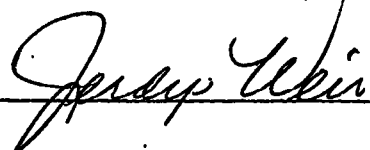
DATED August 8, 1973.

COUNTY SANITATION DISTRICT NO. 3

By 
Chairman, Board of Directors

By 
Secretary, Board of Directors
(CITY)

By 
Mayor

By 
City Clerk

AGREEMENT FOR THE CONVEYANCE OF WASTEWATER
BETWEEN THE CITY OF HUNTINGTON BEACH AND
THE CITY OF SEAL BEACH

This Agreement is entered into this 4th day of August, 2003, by
and between the CITY OF HUNTINGTON BEACH, a municipal corporation, hereinafter
referred to as "CITY", and the CITY OF SEAL BEACH, hereinafter referred to as "SEAL
BEACH", a municipal corporation, in recognition of the following matters:

RECITALS

A. WHEREAS, the CITY is empowered to enter into contracts for the conveyance of wastewater originating outside its boundaries and SEAL BEACH is empowered to maintain and operate sewers and other sanitary disposal matters either in or out of SEAL BEACH through joint powers agreements or through other means with any municipality; and

B. SEAL BEACH has a continued need to provide for the discharge of wastewater; and

C. CITY and SEAL BEACH desire to provide for the conveyance of wastewater originating within SEAL BEACH through CITY's sewer system as depicted on "Exhibit A,"

NOW, THEREFORE, CITY and SEAL BEACH do agree as follows:

1. DEFINITIONS. As used in this Agreement the following terms shall have the meanings herein set forth:

- (a) Average Flow means the daily average discharge of wastewater during the fiscal year expressed as a rate of flow in million gallons per day, and shall be computed by dividing the total gallons discharged during the fiscal year by the number of days within such year.
- (b) Capacity Right means the right of SEAL BEACH to deliver and the obligation of CITY to receive and convey to ORANGE COUNTY SANITATION DISTRICT, hereinafter referred to as "DISTRICT" the stated flow of wastewater expressed in terms of average flow and peak flow.
- (c) Fiscal Year means the period between October 1 and the next succeeding September 30 inclusive, subject to slight modifications due to administrative and accounting procedures of the parties hereto.
- (d) Operation and Maintenance Costs means the actual costs incurred by CITY in a given fiscal year for or in connection with the operation, maintenance, upkeep, repair, improvement, alteration, renewal, replacement and reconstruction of the facilities used for the conveyance of wastewater pursuant to this Agreement. Such costs shall include those relating to tools, equipment, labor, supplies, materials, appliances, power, fuel, engineering and inspection. Operation and maintenance costs shall be deemed to include overhead costs attributable to administrative and supervisory functions, but only to the extent that such costs are directly related to the services and facilities furnished to SEAL BEACH by CITY pursuant to this Agreement.

- (e) Peak Flow means the maximum discharge of wastewater permitted under this Agreement for a 24-hour period. For purposes of measuring peak flow, the 24 hour period shall commence at 12:00 a.m. each day.
- (f) Permitted Flow means the rate of flow set forth herein and is the maximum amount of wastewater flow which SEAL BEACH has the right to discharge into the CITY's facilities under terms of this Agreement. Permitted flow is expressed as an average flow or a peak flow or as both.
- (g) Wastewater means the water carried wastes of the community derived from public, residential, commercial or industrial sources.

2. CAPACITY RIGHT.

- (a) Obligation to Accept and Convey. As of the effective day of this Agreement, CITY grants to SEAL BEACH a capacity right in CITY's existing and expanded facilities.
- (b) Quantity of Capacity Right. Said capacity right shall be an average flow not to exceed Eleven Thousand Eight Hundred (11,800) gallons per day and a peak flow not to exceed Forty Four Thousand Seven Hundred (44,700) gallons per day.

3. POINT OF DELIVERY. CITY agrees to accept the flows set forth above from one point of connection generally located at a manhole near the intersection of Edinger Avenue and Trinidad Lane within the territorial limits of the CITY, as more particularly described in Exhibit A hereto.

4. FLOW MEASUREMENT. SEAL BEACH shall maintain at its expense a flow meter and a recorder totalizer capable of measuring the quantities of wastewater discharged from SEAL BEACH's wastewater system to the wastewater system of CITY.

SEAL BEACH shall report the volume of wastewater contributed to the CITY's system as determined by the aforesaid meter totalizer. Such reports, showing a summary month by month for the entire term year, shall be made by SEAL BEACH to CITY within 30 days of the end of the fiscal year.

Said meter shall be subject to inspection and testing by CITY at its expense.

5. TELEMETRY. SEAL BEACH shall provide and maintain a telemetry system compatible with CITY's telemetry system. Said telemetry shall be utilized to monitor discharge flows and/or prohibit sewer flows from SEAL BEACH in the event of a CITY sewer system failure.

6. RIGHT TO FUTURE CAPACITY. Should the capacity right afforded to SEAL BEACH by this Agreement prove in the future to be insufficient, CITY may provide added capacity to SEAL BEACH to the extent that such additional capacity is available at the sole determination of CITY. To the extent that such capacity is unavailable but can be made available in the sole determination of CITY, SEAL BEACH shall be responsible for all costs to achieve additional capacity to the satisfaction of CITY. CITY shall have the right to approve any land use changes within the service area of SEAL BEACH, covered under this agreement, that change the general quantity, quality, or properties of the sewage to be discharged to the sewer system of CITY. CITY and SEAL BEACH shall negotiate a written amendment to reflect any terms of added capacity and costs of construction to achieve added capacity.

7. CHARGES. Commencing October 1, 2003, SEAL BEACH shall pay to CITY the portion of CITY's operation, maintenance, and capital facilities replacement costs attributable to the facilities utilized by SEAL BEACH pursuant to this Agreement that the average flow from SEAL BEACH during the preceding fiscal year bears to the total average flow in said facilities as identified on "Exhibit B."

SEAL BEACH shall submit to CITY on or before October 31st of each fiscal year the total flow for the previous fiscal year ending September 30th. On or before November 28th of each year CITY shall invoice SEAL BEACH for their proportionate share of all costs from the prior fiscal year based upon its actual operation, maintenance, upkeep and repair expenses for the preceding fiscal year, in addition to the pro rata share of capital facilities replacement costs attributable to the facilities utilized by SEAL BEACH. The sum as determined above shall be paid by SEAL BEACH to CITY within the period of 60 days of receipt of a statement therefore.

8. DISPOSAL OF EXCESS WASTEWATERS. SEAL BEACH agrees that in the event it discharges wastewater to the CITY's conveyance system in excess of the total annual flow based upon the average daily flow of Eleven Thousand Eight Hundred (11,800) gallons per day, or a peak flow of Forty-Four Thousand Seven Hundred (44,700) gallons per day, or as otherwise permitted by this Agreement, SEAL BEACH shall pay to CITY five (5) times the amount of the gallonage charge as determined in paragraph 7 above for all wastewater in excess of the permitted flow. In addition, should said release of excess flow result in a release of sewage from CITY system, SEAL BEACH shall be responsible for any and all clean up costs, fines, fees or the like to clean up and correct the sewer overflow.

9. MAINTENANCE OF SEWER LINES. SEAL BEACH agrees to continue its efforts, as far as is practicable, to reduce or eliminate surface waters and infiltration of ground waters into its sewerage system. In the event CITY determines or has reason to believe that SEAL BEACH's system is failing to reasonably reduce or exclude surface or underground inflow/infiltration, CITY reserves the right to require an inspection of the facilities owned and operated by SEAL BEACH which are used for collection of wastewater within SEAL BEACH's service area. Said inspection shall be at no cost to CITY. A report, with findings, shall be submitted to the City summarizing the results of the inspection. The CITY shall request needed corrections of the inflow/infiltration in writing. Upon notification by CITY, SEAL BEACH shall immediately correct identified problems or otherwise discontinue discharging flow to CITY system.

10. ACTS OF GOD. Neither party hereto shall be liable for failure to comply with the terms or conditions of this Agreement by reason of flood, fire, earthquake, or act of God, provided, that due diligence is exercised to repair or replace facilities damaged and to perform hereunder following such occurrence. CITY and SEAL BEACH shall each pay their proportional share to the net cost of such replacement, based upon the capacity ratio held and used by each at such time.

11. RIGHT TO INSPECT.

(a) SEAL BEACH shall have the right at all reasonable times to inspect all records of CITY that pertain to its operation and maintenance expenses applicable to this Agreement. CITY shall, at the request of SEAL BEACH, advise SEAL BEACH of the manner in which CITY has determined the

charges payable under Sections 7 and 8, and the records that were used in making such determination.

- (b) CITY shall have the right at all reasonable times to inspect all records of SEAL BEACH that pertain to its operation and maintenance expenses applicable to this Agreement. SEAL BEACH shall, at the request of CITY, advise CITY of the manner in which SEAL BEACH has determined the charges payable under Section 6 and the records that were used in making such determination.

12. INDEMNITY. CITY shall protect, defend, indemnify and hold harmless SEAL BEACH, its officers, officials, employees and agents from and against any and all liability, loss, damage, expenses, costs (including without limitation costs and fees of litigation of every nature) arising out of or in connection with performance of this Agreement or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage which was caused by the sole negligence or willful misconduct of the SEAL BEACH.

SEAL BEACH shall protect, defend, indemnify and hold harmless CITY, its officers, officials, employees and agents from and against any and all liability, loss, damage, expenses, costs (including without limitation costs and fees of litigation of every nature) arising out of or in connection with performance of this Agreement or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage which was caused by the sole negligence or willful misconduct of the CITY.

13. TERM. This Agreement shall remain in effect until terminated by either party as set forth herein. Should either party wish to terminate this Agreement, a minimum

one year written notice of termination shall be given to the other party with no other cause required.

14. ASSIGNMENT. This Agreement shall not be assigned by either party hereto without the express written consent of the other party to this Agreement provided that such consent shall not unreasonably be withheld.

15. NOTICES. Any notice or special instructions required to be given in writing under this Agreement shall be given either by personal delivery to SEAL BEACH's agent or to CITY's Director of Public Works as the situation shall warrant, or by enclosing the same in a sealed envelope, certified mail, postage prepaid, and depositing the same in the United States Postal Service, addressed as follows:

TO CITY:

Director of Public Works
City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

TO SEAL BEACH:

DIRECTOR OF PUBLIC WORKS
CITY OF SEAL BEACH
211 EIGHTH STREET
SEAL BEACH, CA 90740

16. MODIFICATION. No waiver or modification of any language in this Agreement shall be valid unless in writing and duly executed by both parties.

17. LEGAL SERVICES SUBCONTRACTING PROHIBITED. SEAL BEACH and CITY agree that CITY is not liable for payment of any subcontractor work involving legal services, and that such legal services are expressly outside the scope of services contemplated hereunder. SEAL BEACH understands that pursuant to Huntington Beach City Charter Section 309, the City Attorney is the exclusive legal counsel for CITY; and CITY shall not be liable for payment of any legal services expenses incurred by SEAL

BEACH. This Section 17 does not affect in any way the provisions contained in Section 12 of this Agreement.

18. ATTORNEY'S FEES & ARBITRATION. In the event suit is brought by either party to enforce the terms and provisions of this Agreement or to secure the performance hereof, each party shall bear its own attorney fees.

In the event of a dispute regarding the interpretation or implementation of this Agreement or any rights or obligations hereunder, the issues in dispute shall be submitted to arbitration. (*California Code of Civil Procedure, Part 3, Title 9, Section 1280 et seq.*) For such purpose, an agreed arbitrator shall be selected, or in the absence of such agreement, each party shall select an arbitrator and the two arbitrators shall select a third. Discovery may be conducted in connection with the arbitration proceeding pursuant to *California Code of Civil Procedure, Section 1283.05.* The arbitrator, or three arbitrators acting as a board, shall take such evidence and make such investigations as deemed appropriate and shall render a written decision on the matter in question. The arbitrator(s) shall decide each dispute and every dispute in accordance with the laws of the State of California. The arbitrator(s)' decision and award shall be binding on both parties but subject to the judicial review for errors of fact or law in the Superior Court for the County of Orange.

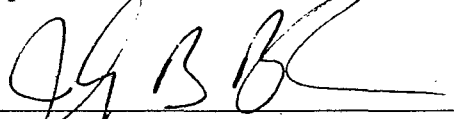
19. PARTIAL INVALIDITY. Should any provision of this Agreement be held by a court of competent jurisdiction to be either invalid, void, or unenforceable, the remaining provisions of this Agreement shall remain in full force and effect unimpaired by the holding, so long as the reasonable expectations of the parties hereto are not materially impaired.

20. INTERPRETATION OF GOVERNING LAW. This Agreement shall be governed by and construed pursuant to the laws of the State of California.


21. ENTIRETY. This Agreement contains the entire agreement between the parties respecting the subject matter of this Agreement and supercedes all prior understanding and agreements whether oral or in writing. The foregoing sets forth the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties have executed this Agreement, consisting of ten (10) pages, including this page, on the dates set forth beside their respective signatures.

CITY OF SEAL BEACH, a municipal corporation of the State of California




CITY MANAGER



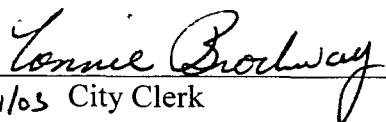
CITY CLERK

CITY OF HUNTINGTON BEACH, a municipal corporation of the State of California



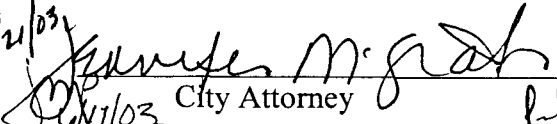
Mayor

ATTEST:



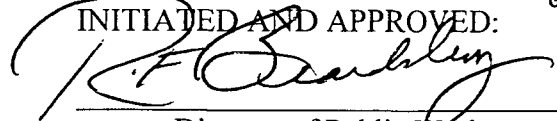
8/11/03 City Clerk

APPROVED AS TO FORM:



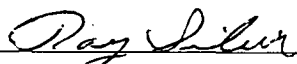
7/21/03
8/11/03 City Attorney pl
6-11-03

INITIATED AND APPROVED:



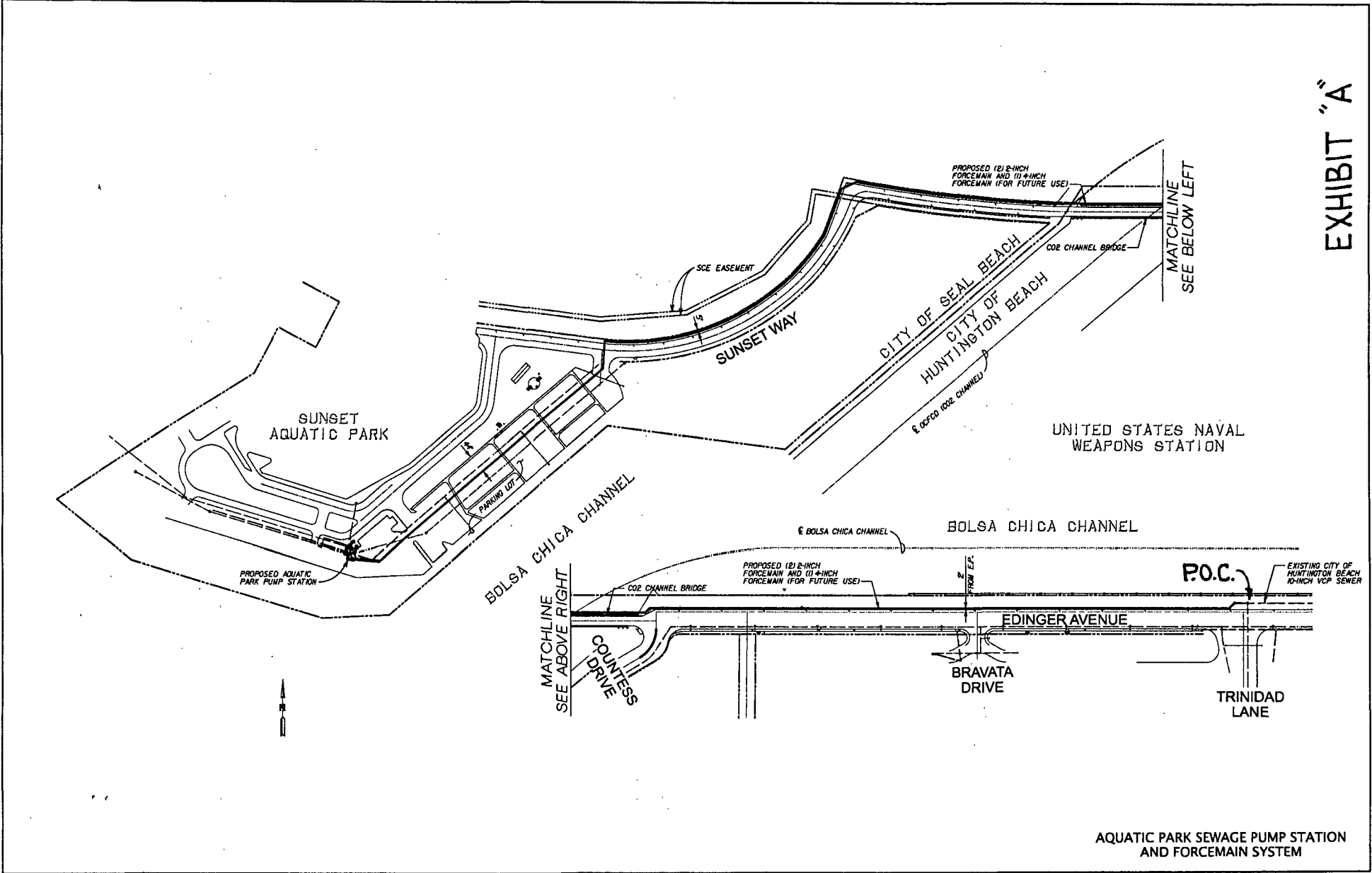
Director of Public Works

REVIEWED AND APPROVED:



City Administrator

EXHIBIT "A"



AQUATIC PARK SEWAGE PUMP STATION AND FORCEMAIN SYSTEM

City of Huntington Beach / Seal Beach
PRO-RATA COSTS

SAMPLE ONLY

Actual cost will depend on actual flows and Maintenance efforts

Sewer Infrastructure	HB	S.B.	S.B.	Replacement/Rehab. Cost			Maintenance Cost		Total
	Average Flow (gpm) ¹	Avg. Flow (gpm) ²	Flow Ratio (%)	HB Cost (40 year life) ^{3,4}	S.B. Share (total)	S.B. Share (Per Yr.)	HB Maint. Cost (Per Yr.) ⁵	S.B. Share (Per Yr.)	S.B. Cost (Per Yr.)
Sewer Main 165-174 ⁴	175	8.0	0.05	\$173,790	\$7,945	\$198.62	\$1,000	\$45.71	\$244.33
(25) Edinger & Santa Barbara	175	8.0	0.05	\$1,100,000	\$50,286	\$1,257.14	\$6,000	\$274.29	\$1,531.43
Sewer Main 202-261 ⁴	329	8.0	0.02	\$292,190	\$7,105	\$177.62	\$1,000	\$24.32	\$201.94
(22) Saybrook & Heil	329	8.0	0.02	\$1,400,000	\$34,043	\$851.06	\$8,000	\$194.53	\$1,045.59
Sewer Main 261-347 ⁴	670	8.0	0.01	\$100,000	\$1,194	\$29.85	\$1,000	\$11.94	\$41.79
(10) Algonquin & Boardwalk	670	8.0	0.01	\$1,800,000	\$21,493	\$537.31	\$10,000	\$119.40	\$656.72

Total \$3,721.80
SAMPLE ONLY

¹ Actual flow supplied by CITY

² Actual flow supplied by Seal Beach

³ 2000 IIMP (Lift Sta.)

⁴ Line ID, Cost per '03 SMP

⁵ Actual maintenance cost to be supplied by CITY

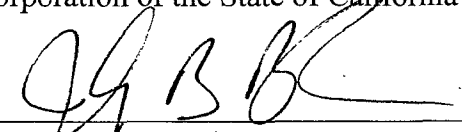
EXHIBIT "B"

20. INTERPRETATION OF GOVERNING LAW. This Agreement shall be governed by and construed pursuant to the laws of the State of California.

21. ENTIRETY. This Agreement contains the entire agreement between the parties respecting the subject matter of this Agreement and supercedes all prior understanding and agreements whether oral or in writing. The foregoing sets forth the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties have executed this Agreement, consisting of ten (10) pages, including this page, on the dates set forth beside their respective signatures.

CITY OF SEAL BEACH, a municipal corporation of the State of California



CITY MANAGER



CITY CLERK


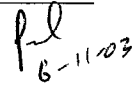
CITY OF HUNTINGTON BEACH, a municipal corporation of the State of California

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

 JUN 10 2003 City Attorney  pd 6-11-03

INITIATED AND APPROVED:

Director of Public Works

REVIEWED AND APPROVED:

City Administrator

20. INTERPRETATION OF GOVERNING LAW. This Agreement shall be governed by and construed pursuant to the laws of the State of California.

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CITY OF SEAL BEACH, a municipal corporation of the State of California

J. B. B.
CITY MANAGER

Joan M. Leo
CITY CLERK

CITY OF HUNTINGTON BEACH, a municipal corporation of the State of California

Connie Boardman
Mayor

ATTEST:
Connie Brockway
8/11/03 City Clerk

APPROVED AS TO FORM:
James M. Gray
7/21/03
8/11/03 City Attorney

INITIATED AND APPROVED:
R. F. Beasley
Director of Public Works

REVIEWED AND APPROVED:
Ray Silver
City Administrator

The foregoing instrument is a correct copy of the original on file in this office.
Attest August 11 2003
CONNIE BROCKWAY

City Clerk and Ex-officio Clerk of the City Council of the City of Huntington Beach, California.
By Connie Brockway City Clerk
Deputy

15 pages

ARTICLE 2. GENERAL PROHIBITIONS, LIMITS AND REQUIREMENTS FOR DISCHARGE

201. PROHIBITED DISCHARGES

These prohibitions apply to all Users of OCSD's Sewerage Facilities whether or not they are subject to Federal Categorical Pretreatment Standards or any other national, state, or local Pretreatment Standards or requirements.

A. General Prohibitions.

1. No User shall introduce or cause to be introduced into OCSD's Sewerage Facilities any Pollutant, Wastewater, or flow which causes Pass Through or Interference or would cause OCSD to violate any federal, state, or local regulatory requirement.
2. No User shall increase the contribution of flow, Pollutants, or change the nature of Pollutants where such contribution or change does not meet applicable standards and requirements or where such contribution would cause OCSD to violate any federal, state, or local regulatory permit.
3. No Person shall transport Wastewater from one location or facility to another for the purpose of treating or discharging it directly or indirectly to OCSD's Sewerage Facilities without written permission from OCSD.
4. No Person shall deliver by vehicular transport, rail car, or dedicated pipeline, directly or indirectly to OCSD's Sewerage Facilities, Wastewater which contains any substance that is defined as a hazardous waste by the Regulatory Agencies.

B. Specific Prohibitions. No User shall introduce or cause to be introduced into the Sewerage Facilities, any Pollutant, substance, or Wastewater which:

1. Creates a fire or explosive hazard in the Sewerage Facilities including, but not limited to, wastestreams with a closed-cup flashpoint of less than 140 degrees Fahrenheit (60 degrees Centigrade) using the test methods specified in 40 CFR 261.21; or produces a gaseous mixture that is 10% or greater of the lower explosive limit (LEL).
2. Causes obstruction to the flow in the Sewerage Facilities resulting in interference or damage to the Sewerage Facilities.

3. Produces noxious or malodorous liquids, gases, solids, or other Wastewater which, either singly or by interaction with other Wastes, is sufficient to create a public nuisance or a hazard to life, or to prevent entry into the Sewerage Facilities for maintenance or repair.
4. Results in toxic gases, vapors, or fumes within the Sewerage Facilities in a quantity that may cause acute worker health and safety problems.
5. Contains any radioactive Wastes or isotopes except in compliance with applicable regulations from other governmental agencies empowered to regulate the use of radioactive materials.
6. Causes, alone or in conjunction with other sources, OCSD's treatment plant effluent to fail a toxicity test.
7. Causes OCSD's effluent or any other product of the treatment process, residues, biosolids, or scums, to be unsuitable for reclamation, reuse or disposal. Examples of items which may cause these conditions include, but are not limited, to food packaging, product containers, and non-dispersible products.
8. Causes discoloration or any other condition which affects the quality of OCSD's influent or effluent in such a manner that inhibits OCSD's ability to meet receiving water quality, biosolids quality, or air quality requirements established by Regulatory Agencies.
9. Creates excessive foaming in the Sewerage Facilities.
10. Violates any applicable Federal Categorical Pretreatment Standards, statute, regulation, or ordinance of any public agency or Regulatory Agency having jurisdiction over the operation of or discharge of Wastewater through the Sewerage Facilities.
11. Has a temperature higher than 140 degrees Fahrenheit, (60 degrees Centigrade), or which causes the temperature at the treatment plant to exceed 104 degrees Fahrenheit (40 degrees Centigrade).
12. Has a pH less than 6.0 or greater than 12.0.
13. Causes corrosion, fouling, occlusion, or damage to the POTW beyond normal wear and tear.
14. Is released in a discharge at a flow rate and/or Pollutant concentration (including oxygen-demanding Pollutant (BOD, etc.)) which will cause interference with OCSD's Sewerage Facilities.

15. Is in excess of the permitted Mass Emission Rates established in accordance with Section 213, or the concentration limits set forth in Table 1, or the discharge permit.
16. Contains material which will readily settle or cause an obstruction to flow in the Sewerage Facilities resulting in interference, such as, but not limited to, sand, mud, glass, metal filings, diatomaceous earth, cat litter, asphalt, wood, bones, hair, fleshings, food packaging, product containers, and non-dispersible products.
17. Includes petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or Pass Through.
18. Causes the Orange County Water District Groundwater Replenishment System product water to exceed its TOC limit of 0.5 mg/L.

202. PROHIBITION ON DILUTION

No User shall increase the use of water or in any other manner attempt to dilute a discharge as a partial or complete substitute for treatment to achieve compliance with this Ordinance and the User's permit or to establish an artificially high flow rate for permit Mass Emission Rates.

203. PROHIBITION ON SURFACE RUNOFF AND GROUNDWATER

- A. No Person shall discharge groundwater, surface runoff, or subsurface drainage directly or indirectly to OCSD's Sewerage Facilities except as provided herein. Pursuant to Section 304 or 305, et seq., OCSD may approve the discharge of such water only when no alternate method of disposal is reasonably available or to mitigate an environmental risk or health hazard.
- B. The discharge of such waters shall require a Dry Weather Urban Runoff Discharge Permit or a Special Purpose Discharge Permit from OCSD.
- C. If a permit is granted for the discharge of such water into a Public Sewer, the User shall pay all applicable charges and shall meet such other conditions as required by OCSD.

204. PROHIBITION ON UNPOLLUTED WATER

- A. No Person shall discharge unpolluted water such as single pass cooling water directly or indirectly to OCSD's Sewerage Facilities except as provided herein. Pursuant to Section 305, et seq., OCSD may approve the

discharge of such water only when no alternate method of disposal or reuse is reasonably available or to mitigate an environmental risk or health hazard.

- B. The discharge of such waters shall require a Special Purpose Discharge Permit from OCSD.
- C. If a permit is granted for the discharge of such water into a public sewer, the User shall pay all applicable charges and shall meet such other conditions as required by OCSD.

205. PROHIBITION ON SLUG DISCHARGES AND NOTIFICATION REQUIREMENT

OCSD has the right to control slug discharges, if it is determined to be necessary. All Significant Industrial Users are required to notify OCSD immediately of any changes at their facilities that could affect the potential for a slug discharge.

206. PROHIBITION ON THE USE OF GRINDERS

- A. Waste from industrial or commercial grinders shall not be discharged into a Public Sewer, except wastes generated in packing or preparing food or food products. Such grinders must shred the waste to a degree that all particles will be carried freely under normal flow conditions prevailing in the Public Sewer.
- B. Waste from Food Service Establishments operating a grinder is prohibited and shall not be discharged into a Public Sewer unless written authorization from the General Manager is obtained.

207. PROHIBITION ON POINT OF DISCHARGE

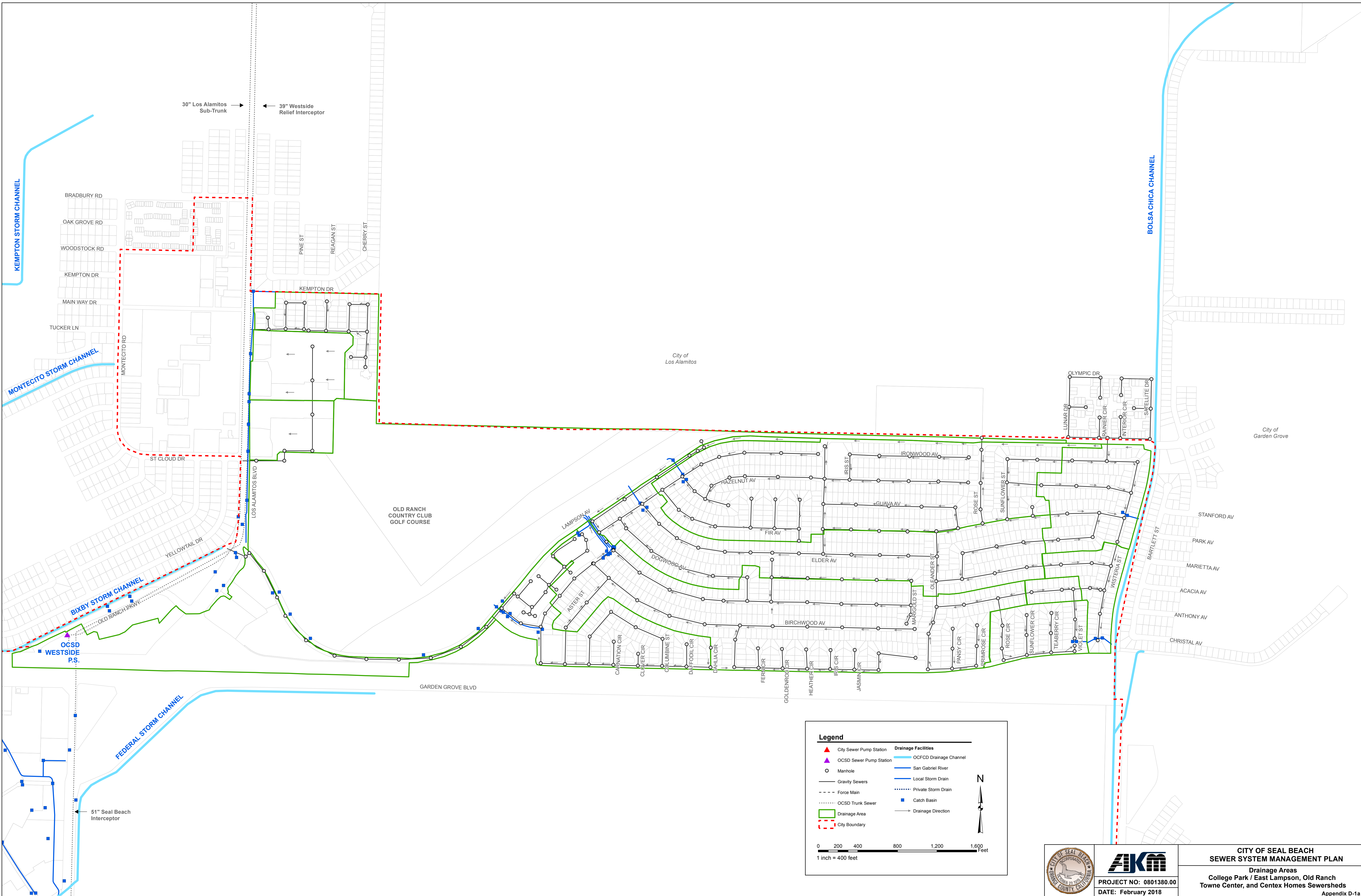
No Person, except Local Sewering Agencies involved in maintenance functions of sanitary sewer facilities, shall discharge any Wastewater directly into a manhole or other opening in a sewer other than through an approved building sewer, unless approved by OCSD upon written application by the User and payment of the applicable fees and charges established therefor.

208. HAZARDOUS WASTE DISCHARGE NOTIFICATION REQUIREMENT

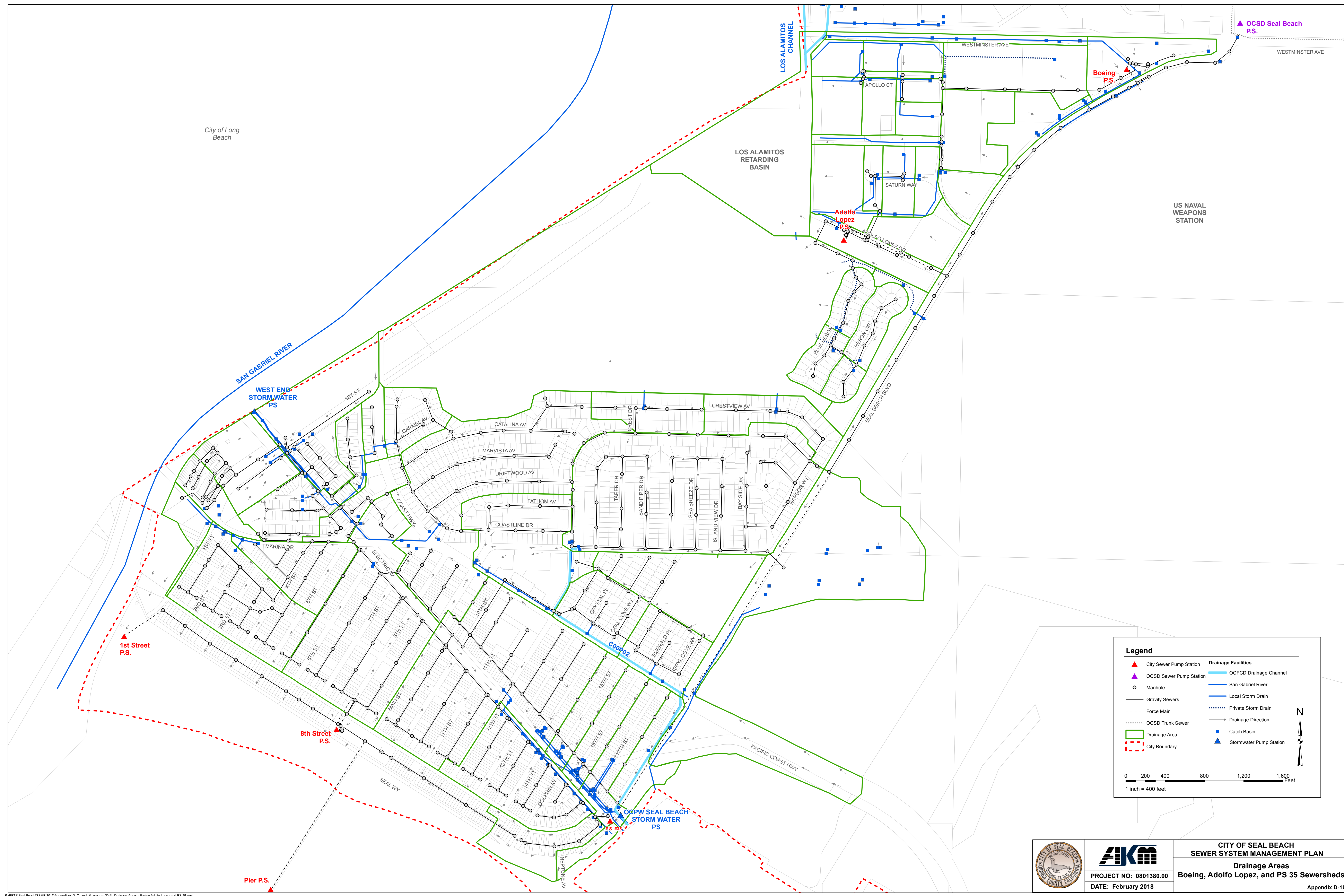
Any User that discharges any hazardous waste into the Sewerage System shall notify OCSD immediately as required by 40 CFR 403.12(p).

209. PROHIBITION AND REQUIREMENTS FOR WASTEHAULER DISCHARGES TO OCSD'S SEWERAGE SYSTEM AND WASTEHAULER STATION

- A. No Wastehauler shall discharge to OCSD's Sewerage System, domestic septage or other approved waste or wastewater from a vacuum pumping



		CITY OF SEAL BEACH SEWER SYSTEM MANAGEMENT PLAN
		Drainage Areas College Park / East Lampson, Old Ranch Towne Center, and Centex Homes Sewersheds
		PROJECT NO: 0801380.00 DATE: February 2018



Legend

▲ City Sewer Pump Station	OCFCD Drainage Channel
▲ OCSD Sewer Pump Station	San Gabriel River
○ Manhole	Local Storm Drain
— Gravity Sewers	Private Storm Drain
- - - Force Main	Drainage Direction
..... OCSD Trunk Sewer	■ Catch Basin
▭ Drainage Area	▲ Stormwater Pump Station
- - - City Boundary	

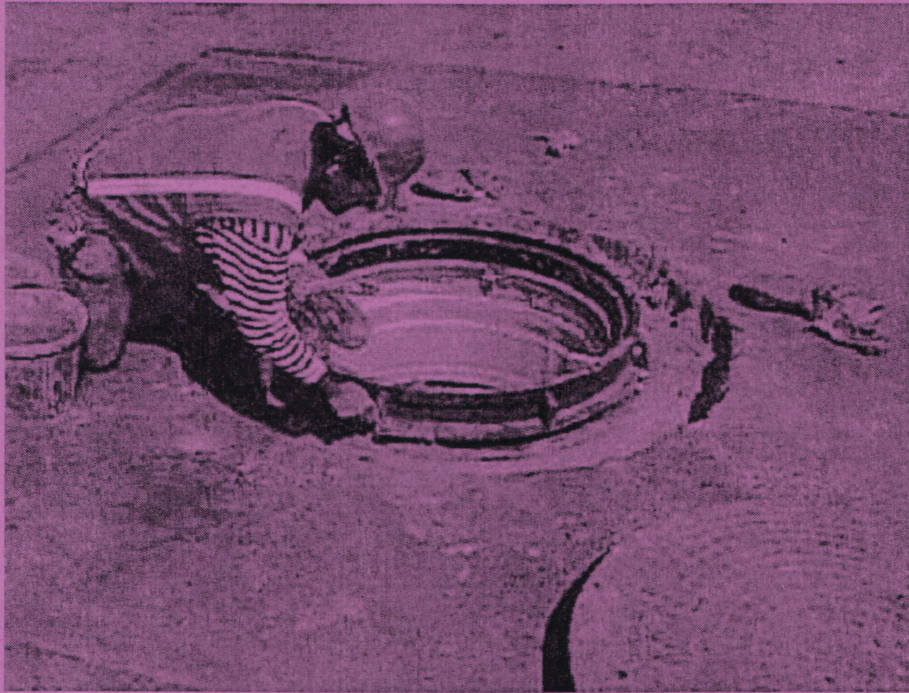
0 200 400 800 1,200 1,600 Feet
1 inch = 400 feet

		CITY OF SEAL BEACH SEWER SYSTEM MANAGEMENT PLAN	
		Drainage Areas Boeing, Adolfo Lopez, and PS 35 Sewersheds	
		PROJECT NO: 0801380.00 DATE: February 2018	Appendix D-1b

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City of Seal Beach
Department of

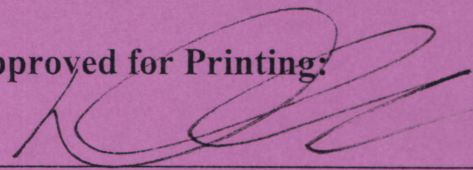
Public Works



Design Criteria For Sewer Facilities

City Council Approval Date:
December 8, 2003

Approved for Printing:



Director of Public Works/City Engineer

2/13/03
Date

RESOLUTION NO. 5190

A RESOLUTION OF THE CITY COUNCIL OF THE
CITY OF SEAL BEACH APPROVING DESIGN CRITERIA FOR
SEWER FACILITIES,
2003 EDITION

WHEREAS, The Public Works Department of the City of Seal Beach has presented to the City Council a certain publication which is desired by the Public Works Department to be used in the design and construction of sewer facilities within the City of Seal Beach; and

WHEREAS, Said publication is the Design Criteria for Sewer Facilities, 2003 Edition; and

WHEREAS, The City Council desires to approve said publication as the minimum standard to be followed for the design and construction of sewer facilities within the City of Seal Beach and for projects requiring a Public Works Permit; and to authorize the Director of Public Works/City Engineer to make changes to said publication as required by new regulations, for improvements to the sewer infrastructure, and for the protection of public health and safety;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SEAL BEACH DOES HEREBY RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. Adoption. adopts said publication as the minimum standard to be followed for the design and construction of sewer facilities with the City of Seal Beach.

SECTION 2. Authorization. Authorizes the Director of Public Works/City Engineer to make changes to said publication as required by new regulations, for improvements to the sewer infrastructure, and for the protection of public health and safety.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Seal Beach at a meeting thereof held on the 8th day of December, 2003 by the following vote:

AYES: Councilmembers Artois, Campbell, Deane, Larson, Yost
NOES: Councilmembers None
ABSENT: Councilmembers None

Mayor

ATTEST:

Joanne M. Yeo
City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) SS
CITY OF SEAL BEACH)

I, Joanne M. Yeo, City Clerk of the City of Seal Beach, California, do hereby certify that the foregoing resolution is an original copy of Resolution Number 5190 on file in the Office of the City Clerk, passed, approved and adopted by the City Council of the City of Seal Beach at a meeting thereof held on the 8th day of December, 2003.

Joanne M. Yeo
City Clerk

CITY OF SEAL BEACH

***Design Criteria
For Sewer Facilities***

***Prepared for
City of Seal Beach
211 8th Street
Seal Beach, California 90740***

July 2003

CITY OF SEAL BEACH
Design Criteria
for
Sewer Facilities

Prepared for
CITY OF SEAL BEACH
Seal Beach, California

Prepared by
AKM CONSULTING ENGINEERS
101 Pacifica, Suite 150
Irvine, California 92618

July 2003

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LIST OF STANDARD DRAWINGS

(see the City's web site www.sb-public-works.com for most current updates)

925 S-1	Manhole Details
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925 S-3	Manhole Shaft Location Details
925 S-4	Traffic Manhole Frame and Cover
925 S-5	PVC Pipe Bedding & Special Details
925 S-6	VCP or PVC Typical Lateral
925 S-7	Cut In Wye Connection
925 S-8	VCP Pipe Bedding Details
925 S-9	Terminal or Main Cleanout Detail
925 S-10	Concrete Encasement Type A, B & C
925 S-11	Concrete Slope Anchors
925 S-12	Steel Casing Pipe
925 S-13	Drop Manhole Details
925 S-14	PVC-Lined Manhole for Sewers
925 S-15	PVC Liner Details
925 S-16	Gas Flap Installation
925 S-17	Flat Top Manhole
925 S-18	Separation Criteria
925 S-19	Grease Interceptor

1. STANDARD REQUIREMENTS

The design and construction of all sanitary sewer system facilities to be operated and maintained by the City of Seal Beach shall be in accordance with these Design Criteria, the City of Seal Beach's Standard Drawings, City of Seal Beach Specifications for the Construction and Inspection of Sanitary Sewers, Standard Specifications for Public Works Construction, as well as the water quality guidelines and requirements of the State of California and County of Orange.

2. CALCULATIONS REQUIRED

Substantiating engineering calculations for design flows; pipe size; pump, motor, generator, wet well size and appurtenant equipment selection; structural design, and bedding/backfill designs shall accompany plan submittals to the City. All calculations shall be sealed and signed by a California registered professional engineer.

Where flow from a new development or redevelopment is added to an existing sewer, the existing sewer will be flow monitored for a minimum period of two weeks to verify the existing minimum, average, and peak dry weather flows.

3. SIZE

Gravity Sewers

The minimum size gravity sewer shall be 8-inches in diameter. The City of Seal Beach may accept 6-inch diameter sewer lines if they must be used to provide adequate velocity. Sewer pipes shall not be constructed in a common trench with another utility. Adequate horizontal and vertical clearance shall be maintained in accordance with the State of California Department of Health Services "Criteria for the Separation of Water Mains and Sanitary Sewers", summarized on Standard Drawing S-18.

Force Mains

The size of sewer force mains shall be determined during the design phase of the project based upon a comparative study of the construction cost and pumping costs for several alternative sizes. In no case shall a force main be less than 4 inches in diameter. The capacity of the force main shall be the design peak flow from the pump station. The minimum design velocity for a force main shall be 3.0 fps, and maximum allowed 5.0 fps. The discharge shall be into a manhole with a smooth flow transition to a gravity sewer. The force main terminal manhole shall be PVC lined.

All force mains shall have a tape attached to the pipe, identifying it as a sewer pipe.

4. MINIMUM AND MAXIMUM SLOPE

All sewers shall be designed and constructed to provide a mean velocity of not less than two (2) feet per second (fps) when flowing at the estimated average dry weather flow as calculated using Manning's formula with an "n" value of 0.013. Subject to the velocity limitations contained in this subsection, the slope shall be maximum possible. Drop manholes shall not be used to reduce slopes to the minimum allowed.

The maximum allowable slope shall be the slope which generates a maximum flow velocity of 6 fps at the peak dry weather flow rate in vitrified clay pipe (VCP), and 5 fps in polyvinyl chloride pipe (PVC) as calculated using Manning's equation with an "n" value of 0.013.

The minimum slope on 6-inch sewer shall be 1% where the tributary area consists of less than 20 dwelling units (d.u.) or its flow equivalent.

Sewer pipes shall have a constant slope between the upstream and downstream manhole of each reach. Any reach of sewer containing sags of any amount shall be removed and reconstructed at the design slope at no cost to the City of Seal Beach. The total cost of inspection, administration, and retesting of improperly installed sewers shall be borne by the contractor. The City of Seal Beach shall not accept any sewer that does not meet these requirements. There shall be no exception to the proper slope requirement.

5. DESIGN FLOW CRITERIA

The average dry weather flow (Q_{adwf}) rates for sewers shall be calculated using the unit flow factors contained in Table 1 and the tributary land uses. Where appropriate, and when required by the City of Seal Beach, the unit flow factors shall be evaluated by the design engineer based upon the specific land uses and densities proposed for new development or redevelopment.

**Table 1
Unit Flow Factors**

Land Use Category		Unit Flow Factor
Land Use Designation	Description	Gallons/Acre/Day
RHD	Residential High Density	2,200
RMD	Residential Medium Density	2,000
RLD	Residential Low Density	1,850
C	Commercial	2,100
R-G	Recreational/Grass	130
PLU/R	Public Land Use/Recreation	130
O-E	Oil Extraction	0
MSSP	Main Street Specific Plan	2,100
M-1	Light Manufacturing	3,167

The peak dry weather flow (Q_{pdwf}) in cubic feet per second (cfs) shall be determined from Q_{adwf} in cfs based upon the following equation:

$$Q_{pdwf} = a Q_{adwf}^b$$

Coefficients a and b shall be based upon a minimum of two weeks of flow monitoring where the tributary flow from a new development or redevelopment is added to an existing sewer. Where such information is not available, the following equation shall be used to determine the peak dry weather flow:

$$Q_{pdwf} = 2.1 Q_{adwf}^{0.92}$$

The determination of the peak dry weather flow shall also consider other factors such as pumped flows and large sewer flow generators.

The peak wet weather flow shall be based upon recorded historical information where available and applicable. Otherwise, the peak wet weather flow shall be calculated as the larger of:

$$Q_{pwwf}=3.1 Q_{adwf}$$

$$Q_{pwwf}=1.35 Q_{pdwf}$$

The peak dry weather flow rate in pipes 15-inches and smaller will be limited by the calculated depth to pipe diameter ratio of $d/D = 0.5$; and 18-inches and larger $d/D = 0.64$.

The pipe shall flow at a calculated depth to pipe diameter ratio of no more than 0.8 with the peak wet weather flow.

6. STANDARD LOCATION AND ALIGNMENT

In local residential and industrial streets, sewer pipes shall be located six (6) feet from the centerline of the street in the center of the driving lane. In major, primary, and secondary highways, the sewer pipes shall be located in the center of the driving lane nearest to the center of the street, but will **not** be located in the median strip or parking lanes.

All-weather access roads capable of accommodating all required construction and maintenance equipment shall be provided for all sewers not located within a paved street.

In curved streets, gravity sewer mains shall be constructed in straight reaches between manholes. In no case shall the outside of the sewer main be closer than four feet to the closest curb face.

A maximum horizontal separation between sewer and domestic water mains shall be achieved by aligning the sewer on the opposite side of the centerline from the domestic water main.

7. EASEMENTS

Permanent easements, where absolutely necessary, shall be a minimum of 30 feet in width and shall be shown on the plans. Temporary easements for construction only shall be shown on the plans including date of termination.

Where applicable, permanent easements shall be recorded on the tract map, and granted to the City of Seal Beach. When applicable, separate easement documents for both permanent and temporary easements shall be prepared (on standard title company forms) and presented to the City of Seal Beach for acceptance and recording.

The City will accept sewers on private streets upon granting of an easement to the City.

The City will not accept any easement for sewers if said easement cannot be accessed with a flush truck through its entire length.

Sewer easement shall be located entirely on one lot. Building set backs shall be minimum 20 feet from easement edges.

8. HORIZONTAL CURVES

Gravity sewer mains shall **not** be designed with horizontal curves.

9. STATIONING PROCEDURE

Centerline stations for sewers shall be shown on the plans. Sewer centerline stations shall be independent of street stationing. All manholes shall be numbered and the numbers noted on the plans (example: MH #1). Sewer stations shall start at 1+00.00 at the downstream point of connection and increase upstream to the last manhole on a sewer line. Intersecting sewer lines will be independently stationed from their downstream point of connection and increase upstream to the last manhole. Each line shall be independently labeled for identification as "Sewer Line A", "Sewer Line B", etc.

10. MINIMUM DEPTH

Minimum depth of cover from finish street grade to the top of sewer main pipe shall be seven (7) feet unless otherwise approved by the Director of Public Works/City Engineer.

Sewer house connections shall be installed so that there is a minimum of six (6) feet of cover from the top of the curb to the top of the pipe at the curb line. At the time of construction, stakes shall be provided for location and grade of each house connection.

11. SEWER PIPE MATERIAL

All gravity sewers shall be either extra strength VCP or SDR-26 PVC. Imperfections shall not be allowed in either type of pipe. Sewer service laterals shall be of the same material as the main line sewer-either extra strength VCP or SDR-26 PVC pipe.

All sewer force mains operating at pressures of less than 40 psi shall be PVC pipe meeting AWWA C-900 Class 200 pipe standards. All other force mains shall be either glass or polyurethane lined ductile iron pipe.

All gravity sewers in industrially zoned areas or major commercial areas shall be extra strength VCP.

12. MANHOLES

12.1 Manhole Requirements

A manhole will be required at:

- A. The upstream end of each line, change in grade or size, change in alignment, or intersection of two (2) or more sewers
- B. At a lateral when it is the same size as the main line sewer
- C. Along the sewer main at maximum distances of 300 feet for 6-inch sewers, 400 feet for 8-inch and larger sewers.

12.2 Manhole Type and Size

Manholes shall be precast reinforced concrete with eccentric cone in accordance with City of Seal Beach Standard Drawings S-1 through S-4. Minimum diameter shall be 48 inches and larger sizes shall be required as shown in the following table:

Manhole Sizes

Sewer Main (inches)	Maximum Branch Size (inches)	Manhole Size (inches)	Frame and Cover (inches)
8-15	10	48	30
18-21	12	60	30
24-36	15	72	36

Extra Depth Requirements

Depth of Cover (feet)	Manhole Size (inches)
6 or less	60
6.5-12	48
12.5-16	60
16.5 and greater	72

All manholes shall be provided with at least all-weather vehicular access.

12.3 Manhole Covers

Manhole covers shall be cast iron in accordance with City of Seal Beach Standard Drawing S-4. The size shall be determined from the table in Section 12.2. Manhole covers shall have one (1) vent hole and one (1) pick hole.

Temporary covers may be necessary in new streets. In these cases, the manhole shaft shall be left six (6) inches, minimum, below subgrade. A heavy metal plate acceptable to the City of Seal Beach inspector shall be provided to cover the manhole opening. Cleats shall be provided in at least four (4) points for the underside of the temporary cover to prevent the temporary cover from moving. These cleats shall extend a minimum of 3 inches from the cover plate and shall be welded to the plate.

Plywood shall be cut to the shape and size of the manhole base and placed in the base before the temporary cover is placed on the shaft. At the completion of final paving, each manhole shall be raised to final grade by the installation of grade rings, as necessary, and the installation of the permanent frame and cover assembly.

12.4 PVC Lined Manholes

The following manholes will be lined with PVC:

- A. If the sewer has a slope of 5% or greater, all the manholes on the sewer
- B. Where there is a change in slope, from steep to flat, of 3% or greater, the manhole at the grade change and the next manhole upstream
- C. All drop manholes as shown on City of Seal Beach Standard S-13

- D. All force main terminal manholes
- E. As required by the Director of Public Works/City Engineer

The approved PVC liners are Ameron T-Lock liner and Koroseal Lok-Rib by B. F. Goodrich. Refer to Orange County Sanitation District Standard Drawing S-065 for PVC liner details.

13. CLEAN-OUTS

Use of clean-outs as shown in the City of Seal Beach Drawing S-9 shall be limited to the following instances unless approved otherwise by the Director of Public Works/City Engineer.

- A. At the upstream end of short sections of sewer, less than 250 feet which will be extended within three months.
- B. All sewer laterals at the property owner's side of the property line.
- C. Special instances such as on a sewer lateral to a single family residential lot where the dwelling unit is set back more than 100 feet from the property line, where there is a large slope up to the building pad from the property line and a grade change in the lateral is necessary, or where the sewer lateral enters the rear of the lot from a public right-of-way.
- D. On a lateral where the overflow level of the lowest wastewater fixture in the building is below the rim elevation of the uphill sewer manhole on the main line. In this situation the rim elevation of the clean-out installed at the property line shall be at least 6-inches below the overflow elevation of the lowest waste water fixture on the lateral. A backflow prevention device is required on the lateral.

14. SEPARATION BETWEEN SEWER AND WATER AND RECYCLED WATER LINES

Horizontal and vertical separation between sewer mains and water and reclaimed water lines will be provided in accordance with the State of California Department of Health Services "Criteria for Separation of Water mains and Sanitary Sewers" and Standard Drawing No. S-18.

15. HOUSE LATERALS

Sewer laterals shall be constructed to the property line from the main line and there shall be a separate lateral for each individually owned building.

Sewer laterals shall have a minimum 4-inch diameter. Apartment and condominium developments shall have at least one (1) 6-inch, or one (1) 8-inch lateral to serve each building in the development which contains more than one dwelling unit.

Laterals shall have a minimum slope of 2%.

Laterals shall be located at the center of each lot and shall be constructed perpendicular or radial to the property line. If the developer must install a sewer lateral at a location other than in the center of a lot due to unavoidable interference, the improvement plans shall indicate the centerline station of the lateral on the sewer and show the distance from a property corner. In no case shall a sewer lateral be located within 12 feet of a property corner. Refer to Section 13 and Standard Drawing S-9 for cleanouts on laterals.

Permanent visible monuments shall be set to indicate the locations of all sewer laterals. A 1½-inch high "S" shall be chiseled in face of curb where the lateral crosses under the curb or on the edge of alleys in Old Town. The method used shall be indicated on the plans. A licensed Civil Engineer or Land Surveyor shall verify locations of set monuments.

The sewer laterals from the main to the building, and inside the buildings are governed by the Uniform Plumbing Code and enforced by the City of Seal Beach Building Official.

The sewer house laterals between the main sewer line and the property line are owned by the property owner, and **NOT** by the City of Seal Beach.

16. PRIVATE SEWER SYSTEMS

All plans submitted for review and approval for commercial/industrial developments and residential developments with private sewer systems shall show the plans, profiles, and details of private onsite sewer systems. The private sewer systems shall be planned, designed, and constructed to the same standards as the City of Seal Beach's public sewer system. Sewer pump stations on private property shall be designed, administered, and inspected by the City of Seal Beach or its designated representative. The private property owner shall be responsible for all costs associated with such design, administration, and inspection.

Each site shall be reviewed on an individual basis at the time plans are submitted. As a condition of service, the City of Seal Beach shall require the property owner to enter into an agreement with the City acknowledging that the onsite facilities are private and shall be properly maintained according to industry standards and the Santa Ana Region of the Regional Water Quality Control Board's Waste Discharge Requirements covered under Order No. R8-2002-0014. The property owner shall further agree to hold the City harmless from any claims on the design, maintenance and operation of the private onsite systems.

All onsite sewer collection systems for commercial/industrial developments shall be private and shall be owned, operated and maintained by the property owner up to the City's sewer line in a public street. A cleanout or manhole shall be installed at the owner's side of the property line in accordance with City Standard Drawing S-6. Each building onsite shall have an individual sewer lateral with a monitoring manhole. Monitoring manholes shall be installed in accordance with City criteria. All laterals from a building shall be connected to the main lateral upstream of the monitoring manhole for that building. No lateral connections are to be made downstream of the monitoring manhole.

17. SEWER PUMP STATIONS

17.1 General

All sewer pump stations conveying wastewater flows to the City of Seal Beach's collection system, including those from private systems, shall be designed, administered, and inspected by the City of Seal Beach, or its authorized representative.

The general criteria outlined herein shall apply to all sewer pump stations. The detailed design criteria for each sewer pump station will be established based upon the specific conditions of each installation on a case-by-case basis. Sewer pump stations shall be designed according to the following design criteria:

Small sewer pump stations shall be the stainless steel slide-rail submersible type with a minimum of two recessed impeller centrifugal pumps, permanent standby generator/automatic transfer switch, and peak flow storage. Large sewer pump stations shall be wet well and dry well type with permanent standby generator/automatic transfer switch, and peak flow storage. Pumps shall be either the recessed impeller, or non-clog type, as determined by the Director of Public Works/City Engineer.

17.2 Standards and Codes

Sewer pump station designs shall be based upon current codes and standards, including but not limited to:

- Waste Discharge Requirements covered under Order No. R8-2002-0014 issued by the Regional Water Quality Control Board, Santa Ana Region
- Hydraulic Institute Standards
- California Administrative Code, Title 8, Article 59-Electrical Safety Orders
- National Electrical Code
- NFPA 820 Fire Protection in Wastewater Treatment Plant and Collection System Facilities
- Uniform Building Code
- Uniform Plumbing Code
- Uniform Mechanical Code
- Standard Specifications for Public Works Construction
- Standard Plans for Public Works Construction
- OSHA Construction Safety Orders
- American Water Works Association
- American Society for Testing Materials

17.3 Design Flows and Heads

The pump stations shall be designed with a firm pumping capacity equaling the greater of:

- Tributary peak wet weather flow
- Flow that will provide a minimum velocity of 3 fps in the force main.

The standby pump will have the same capacity as the largest pump in the pump station.

In selecting the number, capacity, and operating characteristics of the pumps, the minimum, average, peak dry weather and peak wet weather flows, as well as wet well size and operating band shall be considered. The selected design shall minimize pump cycling and odors.

The total dynamic head (the sum of static lift, velocity head, and frictional losses in the station piping/ valving and force main) shall be determined for all operating conditions, wet well and discharge point water surface elevations, and a range of frictional coefficients (Hazen Williams C factor of 100 to 150).

Calculations documenting the determination of flows and head calculations shall be submitted along with the recommended pumps. Prior to final acceptance, the design engineer shall obtain written verification from the recommended pump manufacturers that the selected pumps shall perform throughout their operating range as designed at the published efficiencies free from cavitation, vibration, and premature failure.

17.4 Drivers

The pumps shall be driven by submersible or vertical dry pit immersible motors. All motors shall be explosion proof. Motors operated by variable frequency drives shall be inverter duty motors. Nameplate horsepower shall be at least 20 percent greater than the maximum brake horsepower needed within the operating range of the pump.

Variable frequency drives shall be provided with bypass contactors to operate the pumps at full speed.

Small pump stations may be designed with constant speed pumps. Larger pump stations may require the use of variable speed drives. The decision of the Director of Public Works/City Engineer shall be final as to the type of driver to be used.

17.5 Wet Well

The wet well shall be sized to

- Provide adequate submergence
- Provide adequate net positive suction head available (NPSHA)
- Prevent frequent pump cycling
- Provide emergency storage

Submergence provided shall prevent formation of vortices and air being drawn into the pump. It shall also prevent cavitation. The minimum submergence shall be at least one foot greater than that required by the pump manufacturer.

The net positive suction head available shall be calculated as:

$$NPSHA = 2.24 (P_a - P_v) - H_f + Z$$

Where

P_a = Atmospheric pressure (psia)

P_v = Vapor Pressure of liquid at the maximum expected temperature (use 0.59 psia)

H_f = Friction and minor losses between the wet well and the pump suction flange in feet of liquid

Z = Difference in elevation between the minimum wet well water level and pump datum, in feet. Use - when the pump datum is higher than the minimum wet well water level.

The minimum NPSHA shall be at least eight feet greater than the net positive suction head required (NPSHR) by the selected pump for the maximum expected flow through the pump.

The wet well shall be sized to provide the storage capacity which will preclude exceeding the following number of pump starts per hour:

Motor Horsepower	Maximum Starts per Hour	Minimum Cycling Time (Minutes)
Up to 20	6	10
25 to 50	4	15
60 to 75	3	20
100 and larger	2	30

Wet well bottom corners shall be sloped at 1:1 and slope to the suction pipe inlet to prevent the accumulation of debris on the wet well floor.

Influent pipe(s) shall not enter the wet well in a position which may cause pre-rotation of the flow into the pump suction, and turbulence in the wet well. The influent velocity into the wet well shall be no greater than three (3) feet per second.

For large pump stations, a partition wall(s) with sluice gates may be required to isolate a portion of the wet well for cleaning.

17.6 Emergency Storage

Emergency storage volume needed shall be evaluated for each pump station based upon the tributary area and expected ultimate wastewater flows. The minimum volume of emergency storage shall be 30 minutes of ultimate peak wet weather flow without surcharging the tributary collection system. The emergency storage volume may be provided in the wet well or in a separate adjacent PVC lined overflow structure.

Where possible, the invert of the overflow structure shall be higher than the low water elevation of the pump station wet well to allow gravity drainage of the stored sewage to the wet well. There shall be a minimum of two connecting pipes between the overflow structure and the wet well. The connecting pipes shall be equipped with flap gates on the wet well side. The floor of the overflow structure shall slope to the connecting pipes.

All overflow structures shall be equipped with an access hatch, and three 30-inch diameter maintenance access holes. A 2-1/2 inch hydrant water connection shall be provided near the overflow structure for use in periodic cleaning. The water supply to the hydrant water connection shall have a reduced pressure backflow preventer.

The higher of the maximum storage level and overflow level shall be set at least one foot (1-ft) lower than the top of the lowest manhole in the system, basement or p-trap of the plumbing fixture connected to the system.

17.7 Dry Well

The dry well shall meet the following criteria:

- A. Pumps shall be placed to provide minimum clear space of 3'-6"
- B. The lowest level of the pump station dry well shall have a sump pit with duplex explosion proof submersible pumps controlled by float switches. The sump pumps shall discharge to the wet well above the maximum water level.
- C. Discharge piping and the force main shall be placed in the dry well along the common wall with the wet well. The flow meter shall be placed inside the dry well sufficiently downstream of the last pump discharge pipe. If there is not sufficient room, the flow meter shall be placed in a below grade vault adjacent to the pump station structure.
- D. Catwalks or mezzanine levels shall be provided to access the flow meters, valves, and other portions of the equipment

17.8 Standby Equipment

All pump stations shall have standby equipment capable of handling the ultimate peak wet weather flow during a commercial power outage and/or with the largest unit out of service. This criteria shall apply to all essential electrical and mechanical equipment including pumps/motors, fans, air compressors and sump pumps.

There shall be a minimum of one **standby main sewage pump** equal in size to the largest duty main sewage pump in the station.

All pump stations shall have a **permanent standby generator** and an **automatic transfer switch** sized to start and operate all the sewage pumps needed for ultimate peak wet weather flow, sump pump, ventilation fans, lighting, instrumentation, controls, and telemetry with voltage dip not to exceed 16% when starting any motor.

Generators shall be skid mounted, permanently anchored to the foundation, and housed in an acoustically insulated enclosure. Exhaust mufflers shall be super critical grade designed for noise level not to exceed the noise level allowed within each particular area.

Load banks sized for 80% of the generator capacity shall be provided. Load banks shall be mounted in the vicinity of the generator and protected with adequate enclosure suitable for the location as required by NEMA Standards.

Portable trailer mounted generators are acceptable only for locations where installation of a permanent skid-mounted generator is not feasible. When a portable trailer mounted generator is furnished, a power receptacle shall be permanently installed for quick connection.

Standby generators shall be furnished with battery chargers and block heaters.

The standby generator shall be a diesel or natural gas powered generator. The diesel fuel powered generators shall be equipped with a sub-base fuel tank sized for a minimum of 12 hours of continuous full load operation. Standby generators shall be units pre-approved by the South Coast Air Quality Management District.

17.9 Pumps

Submersible pumps shall be the recessed impeller type. Wet well-dry well pumps shall be either non-clog or recessed impeller type suitable for operation when the dry well is flooded. Pumping capacity and head shall be considered in the selection of the type of pump for the wet well-dry well pump stations.

SUBMERSIBLE RECESSED IMPELLER CENTRIFUGAL PUMPS

Recessed impeller centrifugal pumps are designed to handle stringy materials and up to 25 times the amount of solids of conventional non-clog pumps. Some recessed impellers are labeled by pump manufacturers as torque-flow, bladeless and sphere flow. However, all of these pump models follow the general design of placing the impeller away from the fluid stream in order to pass stringy material without clogging the hydraulic passages.

The recommended minimum design criteria in the selection of recessed impeller centrifugal pumps are as follows:

- a. Pump impeller efficiency shall be selected with the best possible efficiency at design point or at the operating range of the pump.
- b. Maximum Speed 1750 rpm or shall not exceed the limitation as recommended by the Hydraulic Institute Standards for Centrifugal Pump application
- c. Materials of Construction
- NiHard (minimum of 550 Brinnell hardness) or stainless steel Type 316 impeller with a removable wear plate of the same material as the impeller
 - NiHard (minimum of 550 Brinnell hardness) or cast iron casing, as determined by the Director of Public Works/City Engineer.
 - Stainless steel Type 316 shaft.
 - Tandem mechanical shaft seal system for the motor with two totally independent seal assemblies and Tungsten-Carbide seal faces
- d. Upper and Lower Bearings Radial and thrust bearings, grease lubricated with minimum B-10 bearing life of 60,000 hours.
- e. Slide Away Coupling Foot mounted discharge elbow and adaptor, base plate, upper and lower rail supports, lifting yoke, and cable. All metal to metal interfaces where movement may occur shall be non-sparking.
- f. Electric Motor
- For wet well installation, motors shall be designed for Class I, Group D, Division 1 explosion proof.
 - NEMA Design B, heavy duty, high efficiency, non-overloading, with a nameplate horsepower at least 20% greater than the maximum horsepower required over the entire operating range.
 - Thermal overload protectors imbedded in the motor windings.
 - Motors shall be inverter duty if operated by variable frequency drives.
- g. Painting and Coating All wetted surfaces in contact with wastewater shall be coated with coal tar epoxy enamel. Surface preparation shall be in accordance with SSPC-SP5, white metal blast cleaning. Prime coat to DFT=1.5 mils, Amercoat 71, Engard 422 or equal. Two or more coats, DFT=16 mils, Amercoat 78HB, Engard 464 or equal. Total system DFT=17.5 mils.
- External surface exposed to corrosive environment shall be coated and painted by amine-cured epoxy. Surface preparation shall be in accordance with alkaline cleaned, SSPC-SP1. Prime coat and finish coat shall be three or more, DFT=16 mils. Amercoat 395, Engard 480 or equal.

DRY WELL NON-CLOG CENTRIFUGAL PUMPS

The recommended minimum design criteria in the selection of the non-clog dry well pumps are as follows:

- a. Pump impeller efficiency shall be selected with the best possible efficiency at design point or at the operating range of the pump.
- b. Maximum Speed
 - 1750 rpm for pumps with discharge nozzle diameter up to 12-inch,
 - 1175 rpm for pumps with discharge nozzle diameter from 14 to 16-inch,
 - Shall not exceed the speed limitation recommended by the Hydraulic Institute Standards for Centrifugal Pumps.
- c. Materials of Construction
 - Cast iron or NiHard (as directed by the Director of Public Works/City Engineer) casing with stainless steel Type 316 impellers and wear rings (0.5" minimum thickness).
 - Stainless steel Type 316 shaft.
 - Dual Tungsten-carbide seals.
 - Combination radial and thrust bearings for upper and lower bearings, grease lubricated with minimum B-10 life of 60,000 hours when operating at design point.
- d. Electric Motor

Motors shall be NEMA Design B, heavy-duty, high efficiency with Class B or F insulation. Motors shall be non-overloading over the entire operating range, with a nameplate horsepower rating a minimum of 20 percent greater than the maximum horsepower required over the operating range.

Motors located in a damp environment and in a dry pit shall have 2 cycles of solid baked epoxy vacuum impregnation.

Motors shall be inverter duty if operated by variable frequency drives.

Motors shall be immersible, capable of operating continuously in air without the use of sewage pumped for cooling.
- e. Painting and Coating

All wetted surfaces in contact with wastewater shall be coated with coal tar epoxy enamel. Surface preparation shall be in accordance with SSPC-SP5, white metal blast cleaning. Prime coat to DFT=1.5 mils, Amercoat 71, Engard 422 or equal. Two or more coats, DFT=16 mils, Amercoat 78HB, Engard 464 or equal. Total system DFT=17.5 mils.

External surface exposed to corrosive environment shall be coated and painted by amine cured epoxy. Surface preparation shall be in accordance with alkaline cleaned, SSPC-SP1. Prime coat and finish coat shall be three or more, DFT=16 mils. Amercoat 395, Engard 480 or equal.

DRY WELL RECESSED IMPELLER CENTRIFUGAL PUMPS

The recommended minimum design criteria in the selection of recessed impeller centrifugal pumps installed in dry wells are as follows:

- a. Pump impeller efficiency shall be selected with the best possible efficiency at design point or at the operating range of the pump.
- b. Maximum Speed 1750 rpm or shall not exceed the limitation as recommended by the Hydraulic Institute Standards for Centrifugal Pump application
- c. Materials of Construction
 - NiHard (minimum of 550 Brinnell hardness) or stainless steel Type 316 impeller with a removable wear plate of the same material as the impeller
 - NiHard (minimum of 550 Brinnell hardness) or cast iron casing, as determined by the Director of Public Works/City Engineer.
 - Stainless steel Type 316 shaft.
 - Tandem mechanical shaft seal system for the motor with two totally independent seal assemblies and Tungsten-Carbide seal faces
- d. Upper and Lower Bearings Radial and thrust bearings, grease lubricated with minimum B-10 bearing life of 60,000 hours when operating at design point.
- e. Electric Motor
 - NEMA Design B or F insulation, heavy duty, high efficiency, non-overloading
 - Thermal overload protectors imbedded in the motor windings
 - Two cycles of solid baked epoxy vacuum impregnation of the windings.
 - Motors shall be inverter duty if operated by variable frequency drives.
 - Motors shall be immersible, capable of operating in air continuously without the use of the sewage pumped for cooling.
- g. Painting and Coating All wetted surfaces in contact with wastewater shall be coated with coal tar epoxy enamel. Surface preparation shall be in accordance with SSPC-SP5, white metal blast cleaning. Prime coat to DFT=1.5 mils, Amercoat 71, Engard 422 or equal. Two or more coats, DFT=16 mils, Amercoat 78HB, Engard 464 or equal. Total system DFT=17.5 mils.

External surface exposed to corrosive environment shall be coated and painted by amine-cured epoxy. Surface preparation shall be in accordance with alkaline cleaned, SSPC-SP1. Prime coat and finish coat shall be three or more, DFT=16 mils. Amercoat 395, Engard 480 or equal.

17.10 Valves and Gates

Pump stations are equipped with various types of valves to prevent backflow, to isolate the equipment from the system, to control hydraulic surges and to drain the piping system during scheduled repair and maintenance. Each valve type differs in construction, materials, and operation depending on the service and application. All valves shall be suitable for wastewater service.

All interior surfaces of valves in contact with wastewater shall be epoxy coated. All valves 10-inch diameter and larger shall be provided with motor operators. Manually operated valves located more than six feet above the operating floor shall be equipped with chain wheel operators, with the chain extended 36 inches above finish floor. Motor operated valves shall be provided with a manual hand wheel and manual push button station conveniently located below the valve, 5 feet above finished floor.

SLUICE GATES

Sluice gates shall be furnished with stainless steel frames and slides with embedded bronze seats, Type 316 stainless steel stem, and adjustable bronze bushed stem guides. Sluice gate manual operator shall have AWWA square nut; manual crank operator with floor stand and 2-speed gear reducer designed for opening time of not to exceed six minutes. Motor operator shall be provided when required by the Director of Public Works/City Engineer. Motor operated gates shall be designed for opening and closing times of one foot per minute.

Sluice gates shall be specified to be furnished with pattern wall thimbles to match the concrete thickness where the gate is to be installed.

Sluice gates shall be Rodney Hunt or equal.

ECCENTRIC PLUG VALVES

Non-lubricated eccentric plug valves shall be used as isolation valves. Valves shall have hard rubber (suitable for sewage service) resilient faced plugs and flanged ends. Valve seats and discs shall be stainless steel, Type 316. Bodies shall be semi-steel with raised seats. Valves shall be of the bolted bonnet design. Valve design shall allow repacking without removing the bonnet, and the packing shall be adjustable. All exposed nuts, bolts, springs, and washers shall be stainless steel, Type 316. Valves shall have permanently lubricated stainless steel bearings in the upper and lower plugstem journals.

Manual valves shall have a 2-inch square nut and lever actuator. Levers shall be field cut as required to be operable in their installed locations.

Eccentric plug valves may be used as pump control valve to alleviate hydraulic surges during normal starting and stopping of the pumps and as surge anticipators when required. These valves shall have hydraulic cylinder type operators with adjustable opening and closing times. Where the valve is used as a surge relief valve, emergency (upon failure of power supply) opening and closing times shall be specified.

Where space permits, all eccentric plug valves shall be installed with the shaft in the horizontal position. The orientation of the plug with respect to the fluid flow direction shall be as recommended by the manufacturer. The valve manufacturer's recommended installation instructions to prevent clogging of the valves during extended shutdown periods shall be strictly followed.

Valves shall have unobstructed port area of not less than 80-percent of total pipe area.

Eccentric plug valves shall be as manufactured by DeZurik Corporation, Keystone, Drum-Owens (Homestead), Milliken, or equal.

BALL VALVES

When required by the Director of Public Works/City Engineer, ball valves shall be used as pump control valves or for surge relief where flow characteristics requires the valve trim that would match that of the ball valves.

Small diameter ball valves (3/4 inch to 2-1/2 inch diameter) shall be used as isolation shut off valves for potable or pump station water system.

All ball valves shall be in accordance with ANSI/AWWA C 507, with cast iron, ductile iron, cast steel, or stainless steel bodies, support legs or pads, flange ends, suitable for velocities up to 35 fps, temperatures up to 125 degrees F, and design pressures to 150, or 250 psi depending on the pressure range required by the system. The balls shall be cast iron, ductile iron, cast steel or stainless steel, shaft or trunion-mounted, with tight shut-off, single or double seat, and full bore. The valves shall be rubber, with stainless steel or monel shafts, and at least one thrust bearing. Except for stainless steel, ferrous surfaces of valves in contact with wastewater shall be minimum 16 mil epoxy-coated.

Ball valves shall be as manufactured by Jamesbury Corporation, Wm. Powell Company, or equal.

CHECK VALVES

Check valves shall be installed at each pump discharge piping to prevent backflow of wastewater which can cause severe damage to the pump impeller and shaft, and recirculation of flows back to the wet well in stations with multiple pumps. Valves shall comply with the requirements of AWWA C508.

Check valves shall be the outside lever and spring type swing check valves. They shall be installed in the horizontal position to prevent accumulation of solids downstream of the valve which can cause clogging of the valves.

Swing check valves shall have a flanged cover piece to provide access to the disc. The valve body, cover, and disk shall be cast iron conforming to ASTM A 126 Grade B. Disc facing shall be rubber conforming to ASTM D2000 2BG715. Seat ring and clapper arm shall be cast bronze conforming to ASTM B584 Alloy C 84400. Clapper arm shall be clamped to the hinge pin with stainless steel screws and jam nuts.

Ferrous surfaces of valves in contact with wastewater shall be minimum 16 mil epoxy coated.

Swing check valves shall be as manufactured by APCO (Valve and Primer Corp.), Kennedy, Crane Company, or approved equal.

SEWAGE SURGE RELIEF VALVES

The necessity for surge control devices shall be determined through a complete surge analysis of the pumping system. Although surge tanks are the most reliable means to alleviate damaging surges in the force mains, sewage surge relief valves may be required by the system. Where surge relief valves are required, the valve shall be installed in the discharge piping manifold and connected to the wet well. The valve shall be designed to open immediately when the system pressure exceeds the load setting of the counterweights and shall close slowly at an adjustable speed upon return of system pressure to normal.

The surge relief valve body shall be constructed of a heavy cast-iron or cast steel disc having rubber seating face; and corrosion resistant shaft and cushion chamber.

Sewage surge relief valves shall be as manufactured by APCO (Valve and Primer Corporation), Empire Specialty Co., Inc, or approved equal.

SEWAGE AIR RELEASE VALVES

Sewage air release valves shall **not** be used unless **absolutely necessary**. The design engineer shall endeavor to provide a system which rises continuously from the pump station to the discharge point. Where absolutely necessary, sewage air release valves shall be provided to vent accumulating air or gas during pumping operation or entrapped during initial operation. Air release valves shall be installed at high points of the piping systems. Entrapped air or gases can reduce pumping capacity of the pumping system or cause corrosion of the piping system with gases containing hydrogen sulfide. The air or gas vent located at the pump station plant shall be discharged to the wet well.

The valves shall have long float stems and bodies to minimize clogging. Each valve shall be furnished with backwashing accessories to remove solids accumulated inside the valve. Water supply and connection shall be provided with appropriate reduced pressure backflow preventer near the valve for backwashing.

Sewage air release valves shall be as manufactured by APCO (Valve and Primer Corporation), Val-Matic (Valve Manufacturing Corporation), or approved equal.

REDUCED PRESSURE BACKFLOW PREVENTERS

Backflow preventers shall be installed where utility water or plant water is connected to the potable water supply to prevent contamination of the potable water system. The valves shall be designed to operate on the reduced pressure principle. The valve assembly shall consist of two spring loaded check valves, automatic differential pressure relief valve, drain valves and shut-off valves. The body materials shall be bronze for working pressure of not less than 150 psi, with bronze and stainless steel trim. Drain lines and air gaps shall be provided. All backflow preventers shall be registered with County Health Department and must be approved for use in the City of Seal Beach.

Backflow prevention valves shall be as manufactured by Cla-Val Company or Febco.

PUMP CONTROL VALVES

The pump control valves shall be installed in the pump discharge pipe to minimize hydraulic surges during normal starting, stopping and emergency stopping of the pump during power failure or emergency stopping caused by system failures.

The pump control valve shall be operated by hydraulic (oil) or pneumatic operator with a reserve accumulator system as back-up energy source to operate the valve during power failure. The pump control system shall be designed to start the pump against a closed valve. Once the pump has developed pressure, the pump control valve shall start to open until it reaches the maximum open position. Stopping sequence shall cause the pump control valve to close. Complete closure of the valve shall signal the pump to stop. Emergency power failure shall cause the pump control valve to close.

The normal opening, closing, and emergency closing times of the pump control valve shall be independently adjustable. Range of adjustment shall be determined based upon the results of surge analysis. Final settings of closing and opening times shall be verified during pump station start-up. Settings shall be included in the Operation and Maintenance Manual.

17.11 Magnetic Flow Meters

Each pump station shall be equipped with metering equipment to measure outlet flow and provide flow signal for recording, totalizing or control of other equipment. In addition, the flow meter shall be used for pump field performance test to measure capacity and efficiency. The meter shall be magnetic type suitable for wastewater service.

Magnetic flow meters shall be provided at the pump station discharge manifold capable of metering the full range of flow with an accuracy of ± 1 percent of flow rate from 10 to 100 percent of scale. At a velocity below 1 foot per second, the accuracy shall be ± 0.1 percent of the full scale. The meter shall be installed in the piping manifold with minimum straight approach of 4 and 2 diameters upstream and downstream respectively.

The size of the flow meter shall be selected to cover the entire velocity range expected.

The magnetic flow meter shall utilize characterized electromagnetic induction to produce a voltage linearly proportional to the average flow rate. The metering system shall consist of a sensor with field coils, transmitter and interconnecting cables to make a complete operating flow metering system. The meter shall be bipolar pulsed dc type with continuous automatic zeroing.

The sensor shall be flange tube with non-conductive liner. The tube shall be constructed of Type 316 stainless steel with carbon steel flanges AWWA Class D if the coils are external to the tube. The sensor rating shall be NEMA 4, and capable of withstanding accidental submergence in water to a depth of 30 feet for 48 hours. The meter shall include a positive zero feature for periods when the metering portion of the process pipe is not full.

Liner material shall be neoprene, except for liquids which may deposit non-conductive coatings, which shall have Teflon linings. The specific conductivity of the liquid shall not preclude meter operation.

Grounding electrodes shall be of the same material as the sensing electrodes and shall be furnished mounted on each end of all flanges.

Transmitters shall be provided for either local or remote indication as required for each particular project. Remote transmitters shall be NEMA-4X enclosures suitable for wall mounting. Transmitters shall produce a 4-20 ma-dc output signal into a minimum load of 800 ohms linear flow, and a scaled pulse for totalization. All electrical equipment furnished with the magnetic flow meter shall carry a UL label.

Magnetic flow meters shall be Tigermag manufactured by Sparling Instrument Co., Inc. or approved equal.

17.12 Piping and Support System

The pump station piping and supports system consists of the gravity sewer, pump suction and discharge piping, station water or utility water piping, potable water piping, air piping, sanitary drainage piping, fire protection, and sprinkler piping systems. Most of these piping systems are adequately specified by the applicable sections of the Uniform Plumbing Code, Fire Codes and the Standard Specifications for Public Works Construction.

This Section includes special requirements and recommended practices involving the design of piping and the support system.

A. Piping

1. Materials

Ductile iron pipe shall be used in pump station main piping, consisting of suction and discharge piping, discharge manifolds, force mains as specified in Section 11, and water piping 2-1/2 inch and larger. Ductile iron pipe shall be in accordance with SSPWC, and ANSI A21.5I (AWWA C151). All internal surfaces of ductile iron pipe and fittings for water service shall be cement mortar lined and sealed with bituminous coating in conformance with AWWA C104. Internal surfaces of ductile iron pipe for sewer service shall be lined with polyurethane or glass.

Unless otherwise specified, all joints of ductile iron pipe shall be 125-lb flange in conformance with ANSI B16.1, B16.2 and A21.10 (AWWA C110). Sleeve or mechanical grooved type couplings shall be provided at the suction and discharge piping of the pump, and between the magnetic flow meter and the isolation valves to allow removal of the equipment for maintenance.

All bolts shall be of Type 316 stainless steel with bronze nuts or cap screws of copper—copper silicon alloy, conforming to ASTM B 98, Alloy C 65100, designation H04, or alloy C 65500, designation H04. Where anaerobic conditions are anticipated, Type 304 stainless steel shall be used.

Mechanical-type couplings (grooved) shall be used between the valves, pumps, meters and the piping system for the above ground installation. Groove type couplings shall not be used for underground installation.

Mechanical-type couplings shall be cast as manufactured by Victaulic, Gustin Bacon or equal.

Sleeve-type couplings shall be of fabricated steel with steel bolts and with sizes to fit outside diameter of the ductile iron pipe. The middle ring shall not be less than 1/4-inch in thickness and minimum of 5 to 7-inches long. The follower shall be single piece contoured mill section welded and cold-expanded as required for the middle rings. The coupling shall be equipped with a gasket to make the joint water-tight. The coupling shall be factory epoxy coated suitable for sewer service.

Sleeve couplings shall be installed in the piping systems subject to differential settlement as in the force main that connects the piping inside the pump station building to the yard piping. Two sets of sleeve couplings shall be installed with spacing as recommended by the coupling manufacturer.

Where sleeve couplings are installed in the piping system subject to thrust loads, the coupling shall be provided with restraining bolts. The bolts shall be designed in conformance with AWWA Design Manual M-11.

Sleeve-type couplings shall be as manufactured by Rockwell (Smith-Blair), and Dresser.

2. Suction Pipe

The suction pipe shall meet the following requirements:

- a. The suction pipe shall be sized to provide a minimum velocity of 3 feet per second, and a maximum velocity of 6 feet per second throughout the operational range of the pump.
- b. The inlet velocity to the eye of the impeller shall meet the pump manufacturer's requirements. The largest suction inlet available shall be selected.
- c. The suction pipe shall be flat, or slope up to the pump to eliminate the formation of air pockets. Reducers shall be the eccentric type, with flat top, matching the crown of the suction pipe.
- d. There shall be a straight length of pipe of minimum 5 diameters before the suction elbow to provide uniform flow to the pump.
- e. The inlet of the suction pipe shall be a long radius elbow with a flared bell. The inlet location shall be in accordance with the hydraulic institute standards. The velocity at the inlet to the suction bell shall be less than 2.5 feet per second.
- f. The suction line isolation valve shall be full port eccentric plug valve located close to the wet well wall, allowing sufficient room for removal of the bolts and servicing of the valve.

- g. A pressure gauge capable of measuring the entire range of pressures expected at the entrance to the pump shall be provided as close to the pump as possible. The gauge shall be installed on a ½ inch NPT pipe tap with a ball isolation valve and chem seal with snubber.

3. Discharge Pipe

The discharge pipe shall meet the following requirements:

- a. Discharge pipes shall be sized for a minimum velocity of 3 feet per second and a maximum velocity of 6 feet per second.
- b. The discharge nozzle for dry well installed pumps shall be directed towards the wet well and rotated 45 degrees from the suction line.
- c. The discharge pipe shall be connected to the discharge header at an angle of 45 degrees.
- d. A pressure gauge shall be installed on the discharge nozzle or as close to the pump as possible. The gauge shall be installed on a ½ inch NPT diameter pipe tap with a ball isolation valve and chem seal with snubber.
- e. A 1-1/2 inch diameter pipe with a ball isolation valve shall be installed between the top of the pump casing and the wet well.

B. Pipe Support Systems

All piping systems, including connections to equipment, shall be designed with proper support to prevent undue deflection, vibration, and stresses on piping, equipment, and structures resulting from normal operation and seismic events. All supports and parts thereof shall conform to the requirements of ANSI/ASME B 31.1 except as specified herein.

Ductile iron pipe of any size shall have a minimum of 2 supports per straight length not to exceed 10 feet of unsupported span. One of the supports shall be located at the joint.

Where the piping system is subject to thrust as a result of hydraulic surge or actuation of a surge relief valve, a thrust support or a hydraulic shock suppressor shall be provided.

All pipe supports shall be galvanized after fabrication.

17.13 Ancillary Equipment

Each pump station shall be designed to provide the necessary ancillary equipment to support the operation and maintenance of the facility. This equipment is essential to the

operation and maintenance of the system. Ancillary equipment or systems that are discussed herein are commonly required equipment or systems in a wet well-dry well pump station.

A. Hoisting Equipment

Most pump stations are located underground to provide adequate submergence for the pumps. Therefore, the substructure and superstructure need to be designed to allow for installation and removal of equipment. The provisions for access hatches, lifting hooks, hoisting systems, roll-up doors and other means to provide ease of maintenance shall be carefully investigated and designed as required.

For wet well-dry well type pump stations equipped with either vertical non-clog dry well pumps or submersible pumps mounted in the dry well, a traveling bridge crane shall be provided. The bridge crane shall be designed to have a travel and span capable of reaching the pumps, meters and valves. Where the valves are located in areas which are inaccessible to the crane, lifting eyes attached to the ceiling shall be provided directly above the valve or equipment. A floor access hatch shall be provided when required.

Bridge cranes shall have a manually or electrically operated hoist, trolley and end trucks, all designed to conform to all applicable codes, and OSHA safety requirements. Where possible, monorail hoists may be used in lieu of the traveling bridge cranes.

Where space permits, a hoisting system shall be designed to allow direct transfer of equipment from the dry well to a flat bed truck. Traffic into the pump station building shall be given special consideration and necessary turning radius shall be provided.

B. HVAC and Odor Control Systems

A typical pump station consists of the wet well, dry well or the pump room, motor room, electrical and control room, and ancillary equipment rooms. Each of these rooms requires different methods and degrees of heating, air conditioning and ventilation to provide the following conditions:

1. A safe and comfortable working environment for personnel;
2. To facilitate proper operation of equipment;
3. To minimize corrosion of equipment and building materials; and
4. To prevent accumulation of explosive and hazardous gases.

The heating, ventilating and air conditioning (HVAC) system and odor control systems shall be designed and controlled as one integrated system. Air distribution, building enclosures, wall penetrations, wind directions, building occupancies, and area classifications shall be carefully investigated. HVAC systems shall be designed in accordance with the American Society of Refrigeration and Air Conditioning

Engineers (ASHRAE), State of California Energy Conservation Standards Title 24 and the NFPA 820 Fire Protection in Wastewater Treatment Plants.

Equipment conveying corrosives shall be of material that is corrosion resistant, such as fiberglass reinforced plastic (FRP) or stainless steel. If FRP ductwork is used, it shall have flame spread of less than 25, and a smoke propagation of less than 400, and be of fire resistant rating. Air containing flammable and explosive vapors or toxic gases shall not be recirculated.

Air conditioning may be required for pump stations with VFD's.

Depending upon classification, motors for supply and exhaust fans shall be explosion proof, totally enclosed fan cooled (TEFC) units.

C. Wet Well Ventilation

The pump station wet well receives and stores wastewater before it is pumped to the force main. Corrosive and hazardous gases are normally present in the wet well. These gases can become a safety hazard to operating personnel or can cause corrosion of building materials and equipment in the wet well. In order to minimize accumulation of gases inside the wet well, the wet well shall be flushed with fresh air by an adequately sized ventilation system.

Ventilation rates shall be in accordance with:

1. NFPA 820 Fire Protection in Wastewater Treatment Plants
2. Occupational Health and Safety Act (OSHA)

Pump station wet wells are classified into two types depending on their use;

1. Accessible Wet Well.
2. Sealed Wet Well.

ACCESSIBLE WET WELLS

Wet wells which require routine access for maintenance shall be provided with adequate fresh air ventilation in order to provide a safe environment for maintenance personnel, to prevent accumulation of explosive gases, and to minimize corrosion of equipment installed in the wet well. The internal surfaces of the wet well shall be lined with PVC for corrosion protection.

The following minimum ventilation criteria shall be used:

1. All accessible wet wells shall be provided with continuous ventilation of a minimum of 15 air changes per hour.
2. Where intermittent ventilation is required, the ventilation rate shall be at least 30 air changes per hour.

All electrical equipment and fans inside the accessible wet well shall be explosion-proof designed and manufactured for Class I, Division I, Group D. All other design criteria shall be in accordance with NFPA 820 Fire Protection in Wastewater Treatment Plants.

SEALED WET WELLS

Sealed wet wells shall be designed to be low maintenance. The internal surfaces of the wet well shall be lined with PVC for corrosion protection.

Sealed wet wells shall be provided with static vents to accommodate air displacement due to the rise and fall of the water level in the wet well. The vent shall have a minimum diameter of one-half the diameter of the incoming sewer. The vent pipe shall be connected to the nearest sewer maintenance hole where possible. Where the pump station is located away from any sensitive area, vent pipe could be extended above the roof line with a minimum of 15 feet from any window or fresh air inlet.

All electrical equipment inside the sealed wet well shall be classified in accordance with NFPA 820, Fire Protection in Wastewater Treatment and Collection System Facilities.

C. Odor Control

The need for odor control systems shall be evaluated for each project. Such evaluation shall be based on a life cycle cost of 20 years with major consideration of the power and chemical consumption, first cost, maintenance cost, reliability and efficiency of the system.

Odor control systems may consist of activated carbon scrubbers, chemical scrubbers utilizing a chemical absorption process for removal of odors, or chemical or air injection systems.

For the chemical scrubbing systems, foul air from the plant process facility is introduced into the scrubber vessel with an atomized mist chemical solution containing sodium hypochlorite. Oxidation of odorous compounds occurs upon contact with the scrubbing mist, and is removed in the condensate. The scrubber should be designed to remove a minimum of 99 percent of hydrogen sulfide in the foul stream. Acceptable chemical scrubber manufacturers are Calvert Environmental Co., San Diego, CA, and Quad Environmental Technologies, Corp., Highland Park, IL.

All odor control and ventilation equipment shall be suitable for continuous exposure to saturated hydrogen sulfide gas, sodium hypochlorite mist, sodium hydroxide mist and sulfuric acid. Electrical equipment shall have explosion proof enclosure designed for hazardous condition for Class 1, Division 1, locations.

For air pollution permits, consult South Coast Air Quality Management District.

D. Dry Well Ventilation

The pump station dry well is normally located adjacent to the wet well to house the pumps, valves, meters and other ancillary equipment.

The dry well and equipment rooms shall be designed for a ventilation rate of at least 15 air changes per hour or ventilation rate equivalent to cool internal heat load from the equipment whichever is greater or not greater than 60 air changes per hour. The sensible cooling ventilation rate shall be calculated as follows:

$$H = \text{cfm} \times 1.09 \times t$$

where:

- H - Internal heat gain from equipment, Btu per hour
- cfm - Air flow, cu ft per minute
- t - Change in internal temperature, degree F. Use 10 degrees F for change in internal temperature as adequate for sensible cooling.

Where a pump station is equipped with variable frequency drives (VFD), the VFD shall be installed in an air conditioned room with 90 percent efficient outside air filters. VFD units are inherently sensitive to temperature, dust, moisture and other corrosive elements in the air. For constant speed pump stations, the motor control center (MCC) and control rooms shall be equipped with a ventilation fan and 90 percent efficient outside air filters. Pump and equipment room air inlets shall be provided with 30 percent efficient outside air filters. All air filters shall be provided with differential pressure gages to indicate when the filters are clogged, and flow detection devices connected to alarm signaling systems to indicate ventilation system failure.

E. Fire Protection System

Where required by NFPA or by the Fire Department, necessary fire protection systems shall be provided in required areas. For areas housing electrical equipment such as the motor control centers, computer rooms and control rooms, an approved type fire protection systems shall be provided.

F. Gas Detection System

Combustible gas detection equipment shall be provided in the wet well and dry well, and other areas where hazardous gas may be present, to record, activate alarms and/or to operate the ventilation system. The stationary gas detection system shall be capable of measuring concentrations of hydrogen sulfide, methane gas and/or petroleum vapor in the air.

The combustible gas sensor shall be DET TRONICS Point Watch Infrared Hydrocarbon Gas Detector Model PIR9400 or equal. The sensor shall be mounted in the wet well such that it can be removable externally for maintenance and calibration. It shall be connected to the programmable logic controller (PLC). The PLC shall monitor the combustible gas sensor through the 4-20 mA signal which

shall be proportional to combustible gas concentrations of zero to 100%. Two (2) PLC adjustable alarms shall be provided. 6% lower explosion level (LEL) shall indicate a warning, and 10% LEL shall indicate an alarm. Alarm beacons shall be installed in the dry well and the electrical room.

An entry control station shall be provided in a NEMA 4X stainless steel enclosure with vandal resistant hardware, and amber and green NEMA 4 vandal resistant pilot lights at or near each entry. They shall indicate a potentially dangerous condition in the pump station based on the loss of the ventilation system, combustible gas, loss of positive pressure in the electrical room, or loss of negative pressure in the dry well. Both lights shall be dark if there is a component or power failure. A lamp test switch shall be provided, which will activate all entry control system lights for ten seconds for testing.

G. Compressed Air System

For pump stations using surge tanks, air operated valves; pneumatic tools for maintenance purposes, and instrument air, a compressed air system shall be provided. The air system for pneumatic tools shall consist of a lubricated type air compressor, receivers, air dryers and necessary piping system. For an instrument air system, a dedicated non-lubricated type air compressor, receiver, dryer and necessary piping system shall be provided. Where the valve operators are designed as pump control valves with the option to have controlled closing during power failure, the air receivers shall be sized to store compressed air capable of stroking the air cylinders three (3) complete cycles between the specified operating pressures during power outages.

H. Hydraulic System

Pump stations equipped with hydraulic operated valves shall be provided with hydraulic systems. The hydraulic system shall be either a package system supplied with each valve, or one complete package to operate multiple valves. The system shall consist of an oil reservoir, hydraulic pumps, control valves, hydraulic cylinders, limit switches and nitrogen gas-filled accumulators where the valves are required to operate during power outages. The valve opening and closing ranges shall be specified. Final field adjustments shall be made during pump station start-up.

I. Noise Control

The pump station shall be designed to meet the minimum noise level requirement of the City of Seal Beach Municipal Code (The Code) and the Occupational Safety and Health Administration (CAL/OSHA). All mechanical equipment and enclosures shall be acoustically treated to bring the noise level down to an acceptable limit. These attenuation devices may consist of exhaust mufflers, sound isolators or acoustical panels.

The pump stations shall be designed with noise levels not more than 5 dBA above the ambient noise level as measured at the property line of the nearest recipient (neighbor). A 24 hour noise level reading shall be measured at the pump station site as basis of the design.

In the absence of actual field measurements, the presumed ambient noise level shall be deemed to be the minimum ambient noise level for each zone as follows:

Sound Level "A" Decibels

(In this chart, daytime levels are to be used from 7:00 A.M. to 10:00 P.M. and nighttime levels from 10:00 P.M. to 7:00 A.M.)

Zone	Presumed Ambient Noise Level (dBA)	
	Day	Night
Residential	50	40
Public Facility, Commercial, Recreational	60	55
Industrial	65	65

At the boundary line between two zones, the presumed ambient noise level of the quieter zone shall be used.

J. Sump Pumps

A sump pit shall be provided in all underground structures such as dry wells, valve and electrical vaults. The sump pit shall be equipped with an adequately sized plus a standby unit, each having a minimum capacity of 50 gpm. Submersible sump pumps shall be used and controlled by a duplex type control, an automatic alternator and a float switch level control. The control system shall be designed to start the standby pump when the lead pump fails to start or when the water level continues to rise while the lead pump is operating. Both pumps are to stop at low water level.

Sump pump discharge pipe, fittings and valves shall be Schedule 80 PVC pipe, with minimum diameter of 2-inches. Each sump pump discharge pipe shall be provided with a swing check valve and isolation gate valve mounted above, both in the vertical position. A common discharge manifold shall terminate inside the wet well with the wall penetration above the highest surcharge elevation of the wet well.

K. Spare Parts

Pump station electro-mechanical equipment shall be provided with spare parts necessary to ensure continuous operation. The recommended spare parts shall be determined by the project design engineer with assistance from the Director of Public Works/City Engineer. The following shall be the minimum list of spare parts:

1. One set of pump and motor bearings for each size and model of pump unit.
2. One set of pump seals for each size and model of pump unit.
3. One set of pump and casing wear rings for each size and model of pump unit.
4. One set of pump and motor for each size and model of pumping unit.
5. One dozen fuses for each size of fuse.
6. A printed circuit board for each size and model of the variable frequency drives.

The spare parts shall be delivered to the project site no later than two (2) months prior to pump station start up. Spare parts required during testing and start-up shall be provided by the contractor.

17.14 Electrical Equipment

Electrical systems in the pump station consist of the power supply, power transformers, motor control centers, electric motors, electric variable speed drives, electrical wires and conduits, lighting fixtures, and other associated interface with the instrumentation and control systems.

A. Power Supply

The standard power supply to the pump station shall be 480 volts.

B. Motor Control Centers (MCC)

All motor starters and disconnect switches shall be installed in Motor Control Centers (MCC). MCC rooms shall be located away from hazardous gas or other corrosive environments. Mechanical ventilation equipment shall be provided to maintain air circulation. All fresh air inlets to the MCC rooms shall be provided with 90 percent efficient inlet filters.

Where environmental problems exist in the pump station location, such as the presence of dust, moisture from sea water, or corrosive gas, the MCC room shall be designed to have adequate ventilation and provided with air cleaning equipment such as de-humidifiers, filters or carbon absorbers.

The MCC circuit breaker handles must be provided with safety interlocks.

C. Electrical Cables and Conduits

All electrical cables and conduits shall be designed in accordance with the NEMA Area Classification as required by the service area. All electrical conduits shall be PVC coated galvanized rigid metallic conduits or Schedule 80 PVC. All conduits shall be sized for 100 year service. Spare conduits may be required. The minimum size conduit shall be 1-inch.

17.15 Instrumentation and Controls

The instrumentation and control system shall be designed to operate the pump station to match the flow characteristics of the service area. The control system shall consist of the wet well level control, flow metering equipment, pressure gages and switches, fire alarms and gas detection instruments.

A. Pump Control System

1. General

The pumps shall be controlled by the level in the wet well. The primary level sensor shall be an ultrasonic level type. The wet well shall be provided with a redundant float type low-low level cut-off switch and a high-high level alarm switch. Each pump shall be provided with a high discharge pressure switch to activate failure alarm during accidental closure of the discharge valve, failure of the pump control valve to open, or failure of the check valve to open. All failure alarm switches shall be provided with alarm lights located in the Local Control Panel (LCP) and the Main Control Board (NCB). LCPs shall be located near the pumps, while the MCB may be located in another building or in a remote location.

The pump control system shall be a hard wired system. During normal operation, the pumps will be controlled by the ultrasonic level control. Upon loss of ultrasonic level signal the operation will be controlled by the float switches and the pump station will operate in a "fill-and-draw" mode.

2. Constant Speed Pump Control System

The operating sequence is applicable for multiple pump units installed in a smaller wet well. The pump station will start in sequence, pumps start and stop in the reverse order.

This sequence is recommended for the following reasons:

- a. To maintain uniform flow into the receiving system
- b. To provide smaller wet well storage volume and less number of motor starts per hour;
- c. To reduce sewer gas emission to the atmosphere by maintaining a constant water level in the wet well.

3. Variable Speed Drives.

Variable speed (matched-flow) pumps shall be used for the following conditions;

- a. Where more uniform discharge to the receiving system is required;
- b. Where there is not enough space in the pump station to accommodate installation of multiple smaller unit constant speed pumps;
- c. Where the wet well volume is limited to satisfy maximum starts per hour;

- d. Where sewer gas emissions to the atmosphere should be limited;

The variable speed drive pumps shall be controlled as follows:

- a. When the wet well level reaches the first set level, the lead pump will start and ramp to a minimum preset speed. As the flow increases, the pump speed will increase in proportion to the increase in flow in order to maintain the level in the wet well until the pump has reached its maximum speed.
- b. When the inflow to the wet well exceeds the maximum capacity of the lead pump, the control system will then start the lag pump. The lag pump will increase its speed while the lead pump will decrease its speed up to the point where the two pumps share the flow, both at the same speed. As the inflow increases, the two pumps will increase their speeds in proportion to the inflow until the pumps have reached the maximum pump design flow, in the case of two pump combination.
- c. A drop in wet well level equivalent to a decrease in pump station inflow will signal the pumps to slow down until a preset speed is reached. Then the lag pump will stop, and the lead pump will increase its speed in proportion to the inflow.
- d. Further drop in wet well level will signal the lead pump to slow down until the minimum level is reached, at which level, the lead pump will stop.
- e. In the event that either the lead pump or the lag pump fails, the wet well level will rise and the standby pump will be started at the same time the failure alarm is activated. The standby pump will be provided with a variable speed drive.

For pump stations equipped with more than two variable speed pumps, the same operating sequence will be followed.

4. Combination Constant Speed And Variable Speed Drive Pumps

Where a combination of constant speed and variable speed drives are required by the pumping system, the variable speed pump shall be used as a jockey pump. This design, however, is often discouraged due to the complexity of the control system. The jockey pump with variable speed drive shall be sized to serve as a lead pump and to trim the flow, in excess of what the constant speed pump can not deliver. The sequence of operation shall be as follows:

- a. At a preset level in the wet well, the lead pump with variable speed drive shall start and increase its speed to a minimum preset speed. As the inflow into the wet well increases, the pump speed shall increase to match the incoming flow.

- b. When the pump speed has reached the maximum speed and the inflow is increasing, the constant speed pump shall start.
- c. Due to the increase in capacity of the constant speed pump, the wet well level will drop and this shall cause the variable speed pump to slow down and maintain the level in the wet well.
- d. Further increase in the incoming inflow will increase the speed of the variable speed pump until the maximum capacity of the pump station is reached. Decrease in wet well inflow shall reverse the sequence until the lead pump has reached its minimum speed. When the inflow is less than the capacity of the pump at its minimum speed, the lead pump shall stop after a preset time delay.

The cost of transfer switch gear and the reliability of the whole system shall be taken into consideration when evaluating the different types of drives.

The variable speed drives shall be provided with bypass contactors to operate the pump at full speed when the VFD is not available.

5. Float Level Switch

The float level switches shall be used to detect the low-low level cut-off and the high-high water level alarm, and as an auxiliary system in the event of failure of the ultrasonic level control systems. When the water level in the wet well reaches the high-high level, the control system (US Filter CBIT B300 single stage controller or approved equal) shall initiate a timed pump down using all pumps. The pump station shall be capable of operating indefinitely in this mode. The float switch shall be direct acting with a single pole mercury switch which activates when the longitudinal axis of the float is horizontal and de-actuates when the liquid level falls 1-inch below the actuation level. The switch shall be encapsulated in a chemical resistant polypropylene casing with a firmly bonded electrical cable protruding. The entire assembly shall be watertight and impact resistant designed and manufactured for Class 1 Division 1, Hazardous Conditions. Float switches shall be Roto-Float as manufactured by Anchor Scientific or approved equal.

Submersible dewatering sump pumps located in dry wells and valve structures shall be controlled by float switches. Float switches shall be designed and manufactured suitable for the area classification of the sump pit.

6. Ultrasonic Level Control

The pump station's primary level controller shall be the ultrasonic level sensor. The transducers shall be hermetically sealed, self cleaning with built-in temperature compensation 6° beam angle, suitable for installation in a sewage pump station wet well.

Ultrasonic measuring systems shall be the Hydroranger with XPS-15 transducer as manufactured by Milltronics, or approved equal.

17.16 Supervisory Control and Data Acquisition (SCADA) System

To monitor and control the operation of the pump station remotely at a central station, SCADA system equipment shall be provided. The system shall consist of the Remote Terminal Unit (RTU) located in the pump station connected to a computer at a designated central station. The signal to the central station shall be transmitted over spread spectrum radio.

The pump operation is initiated by a motor starter mounted in the Motor Control Center (MCC). The starter is controlled by a signal from the level sensor or push buttons or by local control automation, such as the remote telemetry unit (RTU).

The Central Computer System displays information such as graphics and tables; gathers historical data such as trends of pumping cycles, measurement of flows and pressures, equipment running time, number of pump starts per hour; and can remotely control the operation of the pump stations.

17.17 Pressure Gauges

In a wet well-dry well type pump station, pressure gauges shall be installed at the suction and discharge sides of each pump to measure the pump total dynamic head. The pressure gauges shall be at least 4-1/2 inches in diameter. Where seal flushing water is required, a pressure gauge and low pressure switch shall be provided to activate an alarm in case of loss of flushing water. A low flow alarm switch may be used in lieu of the pressure switch.

A pressure switch shall be provided between the pump and the check valve or pump control valve to activate an alarm in the event of failure of the valve to open or accidental closure of any isolation valve located at the pump discharge piping. A micro-switch attached to the valve shaft may be provided in lieu of the pressure switch.

All, pressure gauges and switches installed in a piping system carrying solids bearing fluids such as wastewater, sump pump discharge or chemical lines shall be provided with diaphragm seals and snubbers where pulsating flow is expected. The assembly shall be provided with an isolation ball valve for maintenance. Diaphragm seal material shall be compatible with the pressure and fluid being handled.

In a submersible pump station, a pressure gauge/switch shall be installed in the discharge pipe of each pump in the valve vault upstream of the check valve. The discharge pressures shall be indicated in the pump control panel.

17.18 Pump Station Facility

The pump station facility includes the pump station structure, buildings, electrical substation or transformer, access roads and other appurtenant equipment inside the property. The facility design shall incorporate access road and security. The architectural treatment shall blend with the surrounding area.

A. Building Design and Materials of Construction

The pump station usually consists of an underground concrete structure to house the wet well and the dry well. Where the pump station requires an above ground structure to house the electrical room, generator room, office area and maintenance shop, the above ground building shall be designed in accordance with the requirements of the Uniform Building Code. In general, all buildings shall be cast-in-place concrete or masonry block wall construction.

Wet Well and Dry Well. The wet well and dry well shall be reinforced cast-in-place concrete with wall thickness to withstand the earth loads, and shall be heavy enough to resist floatation without earth skin friction resisting the outside surfaces when the wet well is empty.

The size and configuration of the wet well shall be designed in accordance with Section 17.5. The bottom of the wet well shall be sloped to at least 15 degrees and corners grouted to prevent accumulation of solids during operation.

The dry well shall be designed to provide the following:

1. Minimum of 42-inch clear working clearance between pumps and piping;
2. Access doors, stairways and landing;
3. Access opening for equipment installation, maintenance and removal;
4. Hoisting equipment or lifting hooks;
5. Adequate ventilation
6. Fire protection equipment where required.

17.19 Force Mains

The minimum diameter for a force main shall be 4 inches. The capacity of the force main shall be the design peak flow from the pump station. The minimum design velocity for a force main shall be 3.0 fps, and maximum allowed 5.0 fps for PVC and 6.0 fps for DIP.

Force mains shall continuously rise from the pump station to the terminal manhole to eliminate the need for air and vacuum release valves.

For new pump stations with phased development of the tributary area, dual force mains may be required. The Director of Public Works/City Engineer shall select the number of force mains that will be installed at each pump station.

17.20 Access Roads

Pump stations shall be designed with access roads for construction, operation and maintenance of the equipment. The roads shall have turning radii suitable for the size of vehicle, or heavy hoisting equipment necessary for installation, removal or delivery of equipment or supplies into the station. Pavement sections shall be able to support the load

of the heaviest anticipated equipment to be used in the station. Where monorail hoists or traveling cranes are required, adequate headroom clearance shall be provided or loading docks can be used to limit the height of the building.

17.21 Flood Control

The pump stations shall be designed with ground level floor one foot above the expected value 100-year flood elevation. Where available and current, information contained in the Orange County Public Facilities and Resources Department documents can be used to determine the expected value 100-year flood elevation.

All hydrologic and hydraulic calculations and design shall be in accordance with the standards of the jurisdictional flood control agency standards.

17.22 Grading and Area Drainage

The site drainage shall be designed to prevent standing water or the erosive effects of storm runoff. Pavement areas shall have a positive drain of up to 3%. Flow lines shall have a minimum of 1% slope. Underground structures shall not be constructed in partially cut and partially fill. Where this condition exists, the site shall be over-excavated and re-stabilized. The pump station shall be designed not to float where high groundwater exists.

17.23 Soils Report

A geotechnical investigation shall be conducted to determine the underground soils conditions. The Soils Report shall show the foundation design criteria, corrosiveness of soils and ground water, groundwater elevations if it exists, and possible hazardous materials underground. Cleaning of such materials shall be addressed in the construction contract, or can be awarded to a separate hazardous materials contractor as determined by the Director of Public Works/City Engineer.

17.24 Surveying

The control bench marks shall be referenced from the County of Orange records. Where existing survey is available, field check existing data with the new datum and the existing building or structure. The location of the pump station should be tied to a nearby street and to an existing property line. Basis of survey bearings and control shall be given if the local coordinate are established.

17.25 Security

The pump station site shall be provided with chain link fence or masonry block wall fence, as directed by the Director of Public Works/City Engineer. The fence or wall shall be designed in accordance with applicable American Public Works Association Standards. The entrance gate shall be secured with a padlock. Where the pump station has a superstructure housing the motor control center and the generator, the building shall be equipped with intrusion alarms. Where there is no superstructure, the NEMA 3R enclosure housing the motor control center shall be equipped with an intrusion alarm. The alarms shall be connected to a horn mounted in the building, a red beacon light mounted outside the building or above the NEMA 3R enclosure, and remoted via telemetry to the main control system.

17.26 Water Supply System

The pump station water supply system shall be provided for pump seal water system, irrigation system, rest rooms and housekeeping hose downs. A backflow preventer shall be installed in the pipeline connecting the hose bibs, seal water and irrigation system. Seal water systems shall utilize air gap tanks, and not be directly connected to the water supply system. All piping shall be designed in conformance with the Uniform Plumbing Code.

17.27 Landscaping and Irrigation System

Plants selected should be drought resistant and irrigation system equipment should utilize water saving kits controlled by automatic timers.

17.28 Construction

The pump station shall be constructed in conformance with the specifications and drawings. The pump station construction shall be administered and inspected by the City of Seal Beach, or its designated representative.

A. Shop Drawing Submittal and Shop Drawing Review

The Technical Specifications shall specify the requirements for shop drawing submittal and review process.

Once the project is awarded, shop drawing submittals need to be reviewed and accepted. The shop drawing review is one way to check compliance with the specifications. It also serves as a mechanism to get from the contractor the equipment as specified. Where a substitution to specified equipment is proposed to the construction project Design Engineer for review, the design project engineer should be consulted.

B. Equipment Installation and Testing

The equipment installation and testing shall be specified in each equipment specification. Normally, the equipment shall be specified to be installed by the Contractor under the supervision of a certified factory representative. After installation, the Contractor shall conduct trial operation of the equipment, and make the necessary adjustments as required. When the equipment becomes operational, the Contractor shall test the equipment in the presence of the City's representative. The test shall include a performance test, simulating the manual and automatic operation, and checking of other components in compliance with the specifications. A continuous test using the actual process material shall be conducted without any breakdown prior to final acceptance.

C. Operation and Maintenance Manuals

The Operation and Maintenance Manual shall be prepared by the construction contractor based upon the plans and specifications, and assistance from equipment

manufacturers, to clearly describe how the pump station shall operate under normal and emergency conditions, and how it should be maintained.

Final payment shall not be made to the Contractor until the Operation and Maintenance Manual is approved by the Director of Public Works/City Engineer..

D. Operator Training

Each pump station has unique operational requirements and some have equipment that requires familiarization by the station operators. The Contractor shall provide training, through respective authorized equipment representatives, to the station operators as specified in the Contract Documents.

18. STANDARD SEWER NOTES

The following notes must appear on the plans under Standard Sewer Notes.

- A. The sewer Contractor shall have a copy of the Project Plans and Specifications, as well as the City of Seal Beach Design Criteria for Sewer Facilities on the job site.
- B. The Contractor shall obtain a City and/or County permit for work done on public right-of-way.
- C. The Director of Public Works/City Engineer's Office shall be called for inspection five (5) working days before start of work at (562) 431-2527.
- D. A pre-construction conference shall be held 48 hours before starting construction work.
- E. The Contractor shall expose all join points to the existing sewer system for verification of location and elevation before construction.
- F. Stations shown as 1+00.00 are sewer stations and are independent of all other stations.
- G. All laterals shall be staked by a surveyor before trenching and a complete set of cut sheets shall be supplied to the City Inspector.
- H. The City will inspect and test the sewer collection system and lateral sewers to the property clean-out. Privately owned sewer laterals from the property line clean-out will be inspected and tested by an approved contractor subject to Building Department inspection.
- J. All sewer lines shall be balled in the presence of the City Inspector before completion of all leakage tests.
- K. Pipeline leakage tests shall be made in the presence of the City Inspector, only after backfill has been completed, compaction tests on backfill have been made, and the backfill has been accepted by the City Inspector.

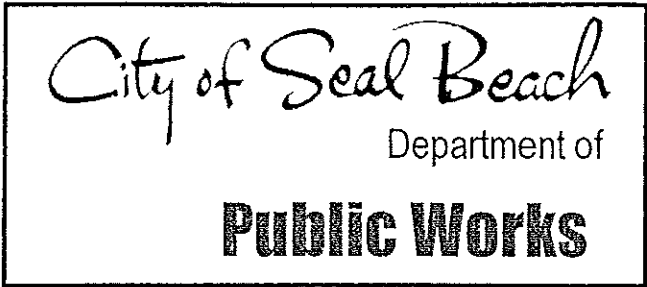
- L. All sewer main lines shall be inspected using a closed circuit television system. Two recordings shall be made of the inspection on a DVD disk in accordance with the City of Seal Beach Specifications for Video Inspection of Sewer Lines, and provided to the City. One recording shall inspect the system constructed with no flow, and one shall conduct the inspection with flowing water.
- M. The Contractor shall provide the City with an as-built set of job prints with tie-down measurements for all laterals and manholes.
- N. Before final acceptance, the developer's engineer signing the plans shall furnish the City with a set of as-built mylars of the sewer plan.
- O. Curbs, or pavement surfaces in Old Town alleys, shall be inscribed with an "S" indicating locations of all sewer laterals.
- P. Curbs shall be inscribed with ties for all manhole locations.

Add the following notes to plans having on-site work which will be dedicated to the City:

- Q. Trench backfill, on all sewer and water to be dedicated to the City, shall be compacted to 90% relative density as determined by the five-layer test method (California 216G). Tests will be required every 300-feet of trench or as determined by the City Inspector. The developer shall submit written results of compaction testing to the City before acceptance. If in dedicated street or future street, compaction will be as required by governmental agency having jurisdiction, but no less than 90 percent relative compaction.

PRICE \$3.00

**STANDARD PLANS
for
SEWER FACILITIES**



FEBRUARY 2004 EDITION

The following Standard Plans have been adopted by the City of Seal Beach as a guide for standardization of "Public Works" within the City and have been prepared for the guidance of engineers, contractors and developers who have an interest in the preparation of plans and construction of facilities and improvements under the jurisdiction of the City of Seal Beach. Standard plans are to be used in conjunction with the currently adopted edition of the Standard Specifications for Public Works Construction, any adopted supplements or Department amendments as well as any adopted Design Criteria/Manuals and Master Plans. Conformance with these standards will reduce design costs and the processing time needed to review and approve plans. They are not intended to be a substitute for professional engineering knowledge, experience or judgment. Any deviations from what is contained in the following documents must be approved in writing by the Director of Public Works/City Engineer. These standards may be modified from time to time as required. Please visit the Department website at www.sb-publicworks.com to check for new or updated standards.

Douglas A. Dancs, P.E., Director of Public Works/City Engineer

PRICE \$3.00

**STANDARD PLANS
for
SEWER FACILITIES**

City of Seal Beach
Department of
Public Works



FEBRUARY 2004 EDITION

The following Standard Plans have been adopted by the City of Seal Beach as a guide for standardization of "Public Works" within the City and have been prepared for the guidance of engineers, contractors and developers who have an interest in the preparation of plans and construction of facilities and improvements under the jurisdiction of the City of Seal Beach. Standard plans are to be used in conjunction with the currently adopted edition of the Standard Specifications for Public Works Construction, any adopted supplements or Department amendments as well as any adopted Design Criteria/Manuals and Master Plans. Conformance with these standards will reduce design costs and the processing time needed to review and approve plans. They are not intended to be a substitute for professional engineering knowledge, experience or judgment. Any deviations from what is contained in the following documents must be approved in writing by the Director of Public Works/City Engineer. These standards may be modified from time to time as required. Please visit the Department website at www.sb-publicworks.com to check for new or updated standards.

Douglas A. Dancs, P.E., Director of Public Works/City Engineer

RESOLUTION NO. 5211

A RESOLUTION OF THE CITY COUNCIL OF THE
CITY OF SEAL BEACH APPROVING STANDARD PLANS FOR
SEWER FACILITIES,
2004 EDITION

WHEREAS, The Public Works Department of the City of Seal Beach has presented to the City Council a certain publication which is desired by the Public Works Department to be used in the design and construction of sewer facilities within the City of Seal Beach; and

WHEREAS, Said publication is the Standard Plans for Sewer Facilities, 2004 Edition; and

WHEREAS, The City Council desires to approve said publication as the minimum standard to be followed for the design and construction of sewer facilities within the City of Seal Beach and for projects requiring a Public Works Permit; and to authorize the Director of Public Works/City Engineer to make changes to said publication as required by new regulations, for improvements to the sewer infrastructure, and for the protection of public health and safety;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SEAL BEACH DOES HEREBY RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. Adoption, adopts said publication as the minimum standard to be followed for the design and construction of sewer facilities with the City of Seal Beach.

SECTION 2. Authorization, Authorizes the Director of Public Works/City Engineer to make changes to said publication as required by new regulations, for improvements to the sewer infrastructure, and for the protection of public health and safety.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Seal Beach at a meeting thereof held on the 23rd day of February, 2004 by the following vote:

AYES: Councilmembers Griggs, Campbell, Deane, Larson, Post
NOES: Councilmembers None
ABSENT: Councilmembers None

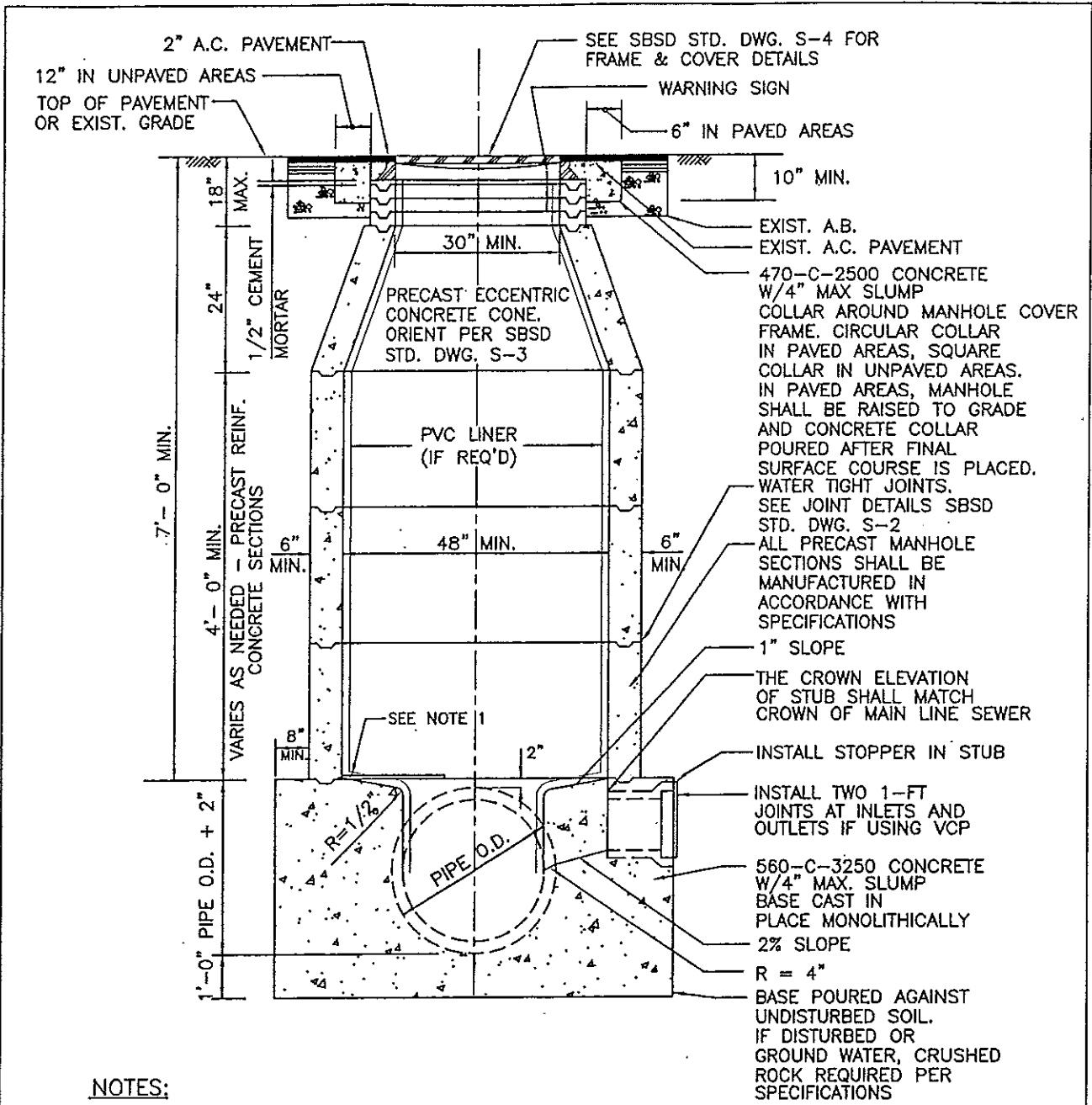
Patricia E. Campbell
Mayor

ATTEST:
Joanne M. Yeo
City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) SS
CITY OF SEAL BEACH)


I, Joanne M. Yeo, City Clerk of the City of Seal Beach, California, do hereby certify that the foregoing resolution is an original copy of Resolution Number 5211 on file in the Office of the City Clerk, passed, approved and adopted by the City Council of the City of Seal Beach at a meeting thereof held on the 23rd day of February, 2004.

Joanne M. Yeo
City Clerk



NOTES:

1. PLACE TWO HALF MOON SHAPED PLYWOOD COVERS (5/8" THICK MINIMUM) IN BOTTOM OF MANHOLE AFTER SHAFTS HAVE BEEN SET TO KEEP DEBRIS FROM ENTERING SEWER.
2. FOR DROP MANHOLE SEE SBSD STD. DWG. S-13.
3. FOR MANHOLES LOCATED OUTSIDE PAVED AREAS, THE FRAME AND COVER SHALL BE SET A MINIMUM OF 0.1 FT. ABOVE FINISH GRADE IN SHOULDER AREAS, UNPAVED ROADS OR LANDSCAPED AREAS, AND 18" IN UNFINISHED AREAS.
4. ALL INLETS AND OUTLETS SHALL BE SUPPORTED WITH CONCRETE SUPPORTS PRIOR TO POURING MANHOLE BASE.
5. MANHOLE LOCATIONS SHALL BE MARKED ON CURB FACE.

STANDARD DRAWING—MANHOLE DETAILS		STANDARD PLAN 925 S-1																	
REVIEWED <i>Mark White</i> 3-1-04 DEPUTY CITY ENGINEER—RCE 61527 APPROVED <i>[Signature]</i> 3/1/04 DIRECTOR OF PUBLIC WORKS—RCE 57202	PUBLIC  WORKS	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 80%;">REVISIONS DESCRIPTIONS</th> <th style="width: 10%;">SUPERCEDES</th> <th style="width: 10%;">REFERENCES</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	REVISIONS DESCRIPTIONS	SUPERCEDES	REFERENCES													SHEET 1 OF 1
NO.	REVISIONS DESCRIPTIONS	SUPERCEDES	REFERENCES																
DRAWN BY:	CHECKED BY: ZK																		

PIPE SHALL BE LAID WITH END SQUARE INTO M.H. BASE, UNLESS OTHERWISE NOTED. REMOVE TOP PORTION OF PIPE, THEN CONSTRUCT FILLET SHELF OVER PIPE TO DRAIN

FOR LOCATION OF M.H. SHAFT OPENING SEE SBSB STD. DWG. S-3

M.H. STATIONING

8" MIN. BASE

0.10' MIN. FALL ACROSS M.H. (TYP.) UNLESS SEWER SLOPE GREATER. 0.20' MIN. FALL FOR 90° M.H.

SEE SBSB STD. DWG. S-5 FOR PVC PIPE CONNECTION DETAILS

R = 2 X D

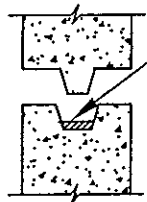
STUB (TYP.)

D

8" MIN. CONC. ENCASEMENT (INCLUDING BELL)

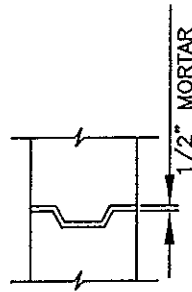
2-1' JOINTS AT BOTH INLETS AND OUTLETS FOR VCP ONLY.

PLAN



JOINT SEALING COMPOUND

PLASTIC JOINT



1/2" MORTAR

MORTAR JOINT

NOTES:

1. MORTAR JOINTS -- SUFFICIENT MORTAR SHALL BE APPLIED ACROSS ENTIRE FACE OF JOINT SO THAT WHEN PRECAST UNITS ARE PLACED ON TOP OF ONE ANOTHER, THE MORTAR WILL SQUEEZE OUT BOTH THE INSIDE AND OUTSIDE WALL FACES. JOINTS SHALL BE "POINTED UP" AFTER SETTING PRECAST UNITS EXCLUDING GRADE RINGS.
2. PLASTIC JOINTS -- PERFORMED COLD-APPLIED READY-TO-USE PLASTIC JOINT SEALING COMPOUND SHALL BE QUICK-SEAL AS SUPPLIED BY QUIKSET UTILITY VAULTS, SANTA ANA, CALIFORNIA -- OR APPROVED EQUAL. MUST BE USED WHEN GROUND WATER IS ENCOUNTERED.

STANDARD DRAWING--CONCRETE BASE AND JOINT DETAILS

STANDARD PLAN
925 S-2

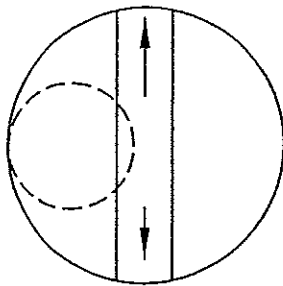
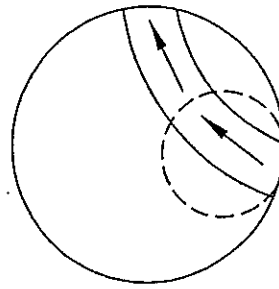
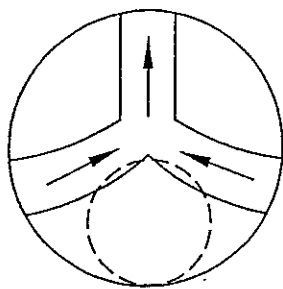
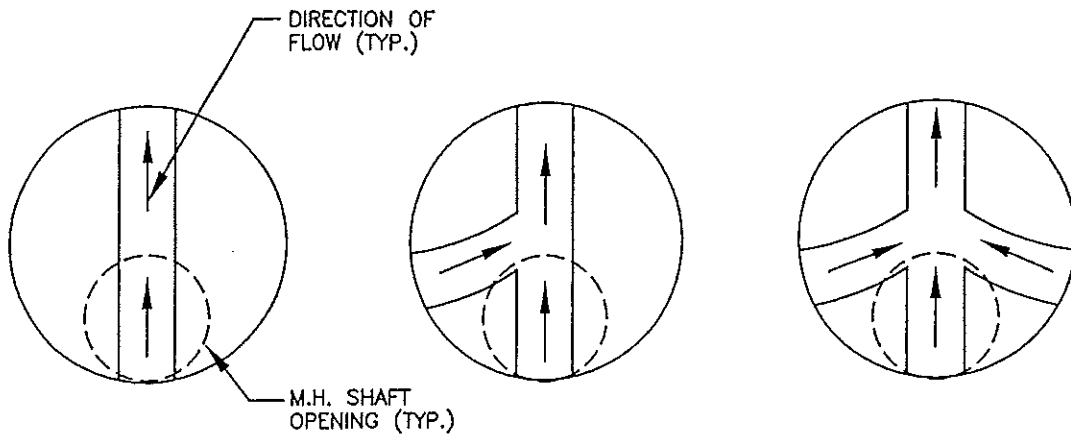
REVIEWED
Mark Veltje 3-1-04
DEPUTY CITY ENGINEER--RCE 61527

APPROVED
[Signature] 3/1/04
DIRECTOR OF PUBLIC WORKS--RCE 57202

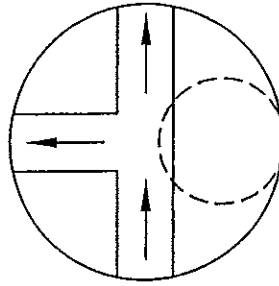
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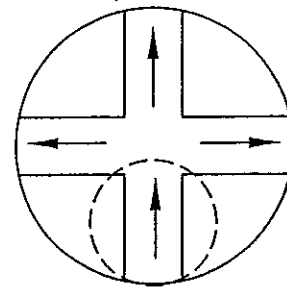
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SUMMIT M.H. (ONLY)
EITHER SIDE



SUMMIT M.H. (ONLY)



SUMMIT M.H. (ONLY)
ANY POSITION

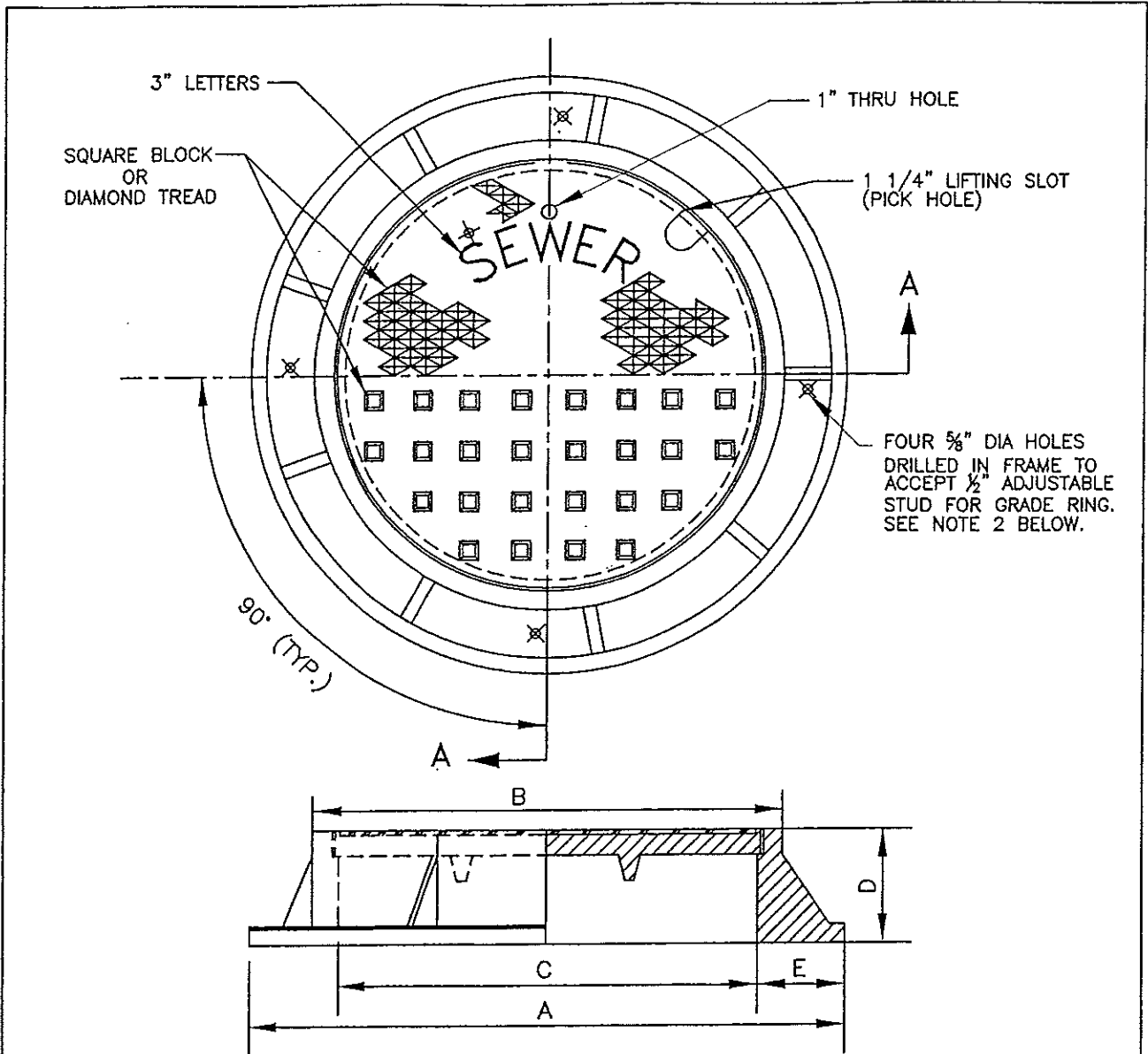
STANDARD DRAWING—MANHOLE SHAFT LOCATION DETAILS

STANDARD PLAN
925 S-3

REVIEWED
Mark Kelly - 3-1-04
DEPUTY CITY ENGINEER—RCE 61527
APPROVED
[Signature] 3/1/04
DIRECTOR OF PUBLIC WORKS—RCE 57202
DRAWN BY: _____ CHECKED BY: ZK



REVISIONS		SUPERCEDES	REFERENCES
NO.	DESCRIPTIONS		



FOUR 5/8" DIA HOLES
DRILLED IN FRAME TO
ACCEPT 1/2" ADJUSTABLE
STUD FOR GRADE RING.
SEE NOTE 2 BELOW.

SECTION A-A

SIZE	24"	30"	36"
A	34"	38"	44"
B	29"	33"	39"
C	23 1/2"	30"	36"
D	6"	6"	6"
E	4"	4"	4"

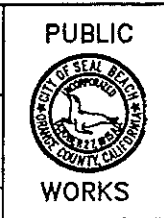
- 48" MANHOLES SHALL HAVE 24" COVERS,
60" MANHOLES SHALL HAVE 30" COVERS,
72" MANHOLES SHALL HAVE 36" COVERS.
- WHERE FRAME AND COVER ARE SET 18" ABOVE GRADE, FOUR (4) 1/2" DIA.
INSERTS FOR ADJUSTABLE STUDS SHALL BE CAST IN TOP GRADE RING,
ALIGNED AS DETAILED ABOVE. FRAME SHALL BE BOLTED TO GRADE RING.

STANDARD DRAWING—TRAFFIC MANHOLE FRAME AND COVER STANDARD PLAN
925 S-4

REVIEWED
Mark Vukobratovic 3-1-04
DEPUTY CITY ENGINEER—RCE 61527

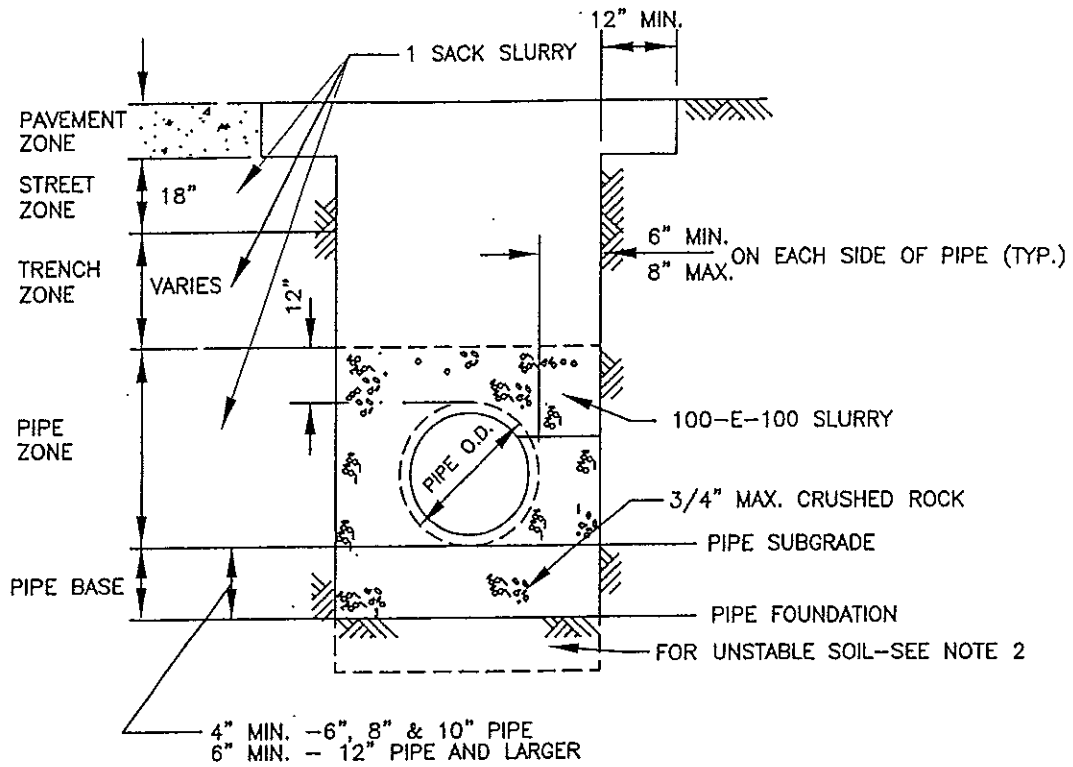
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[Signature] 3/1/04
DIRECTOR OF PUBLIC WORKS—RCE 57202

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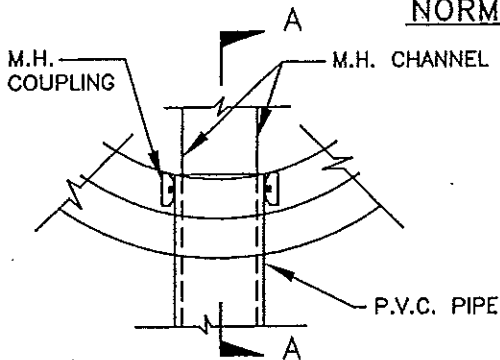


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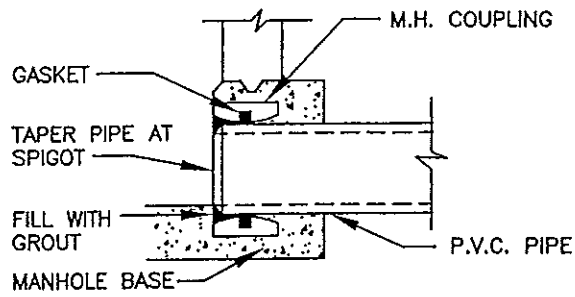
SHEET 1 OF 1



NORMAL BEDDING



PLAN




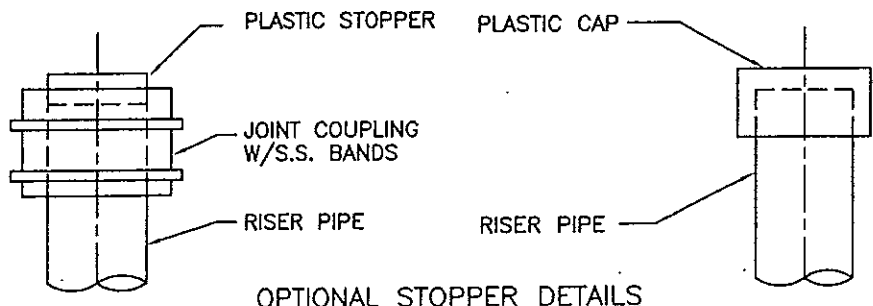
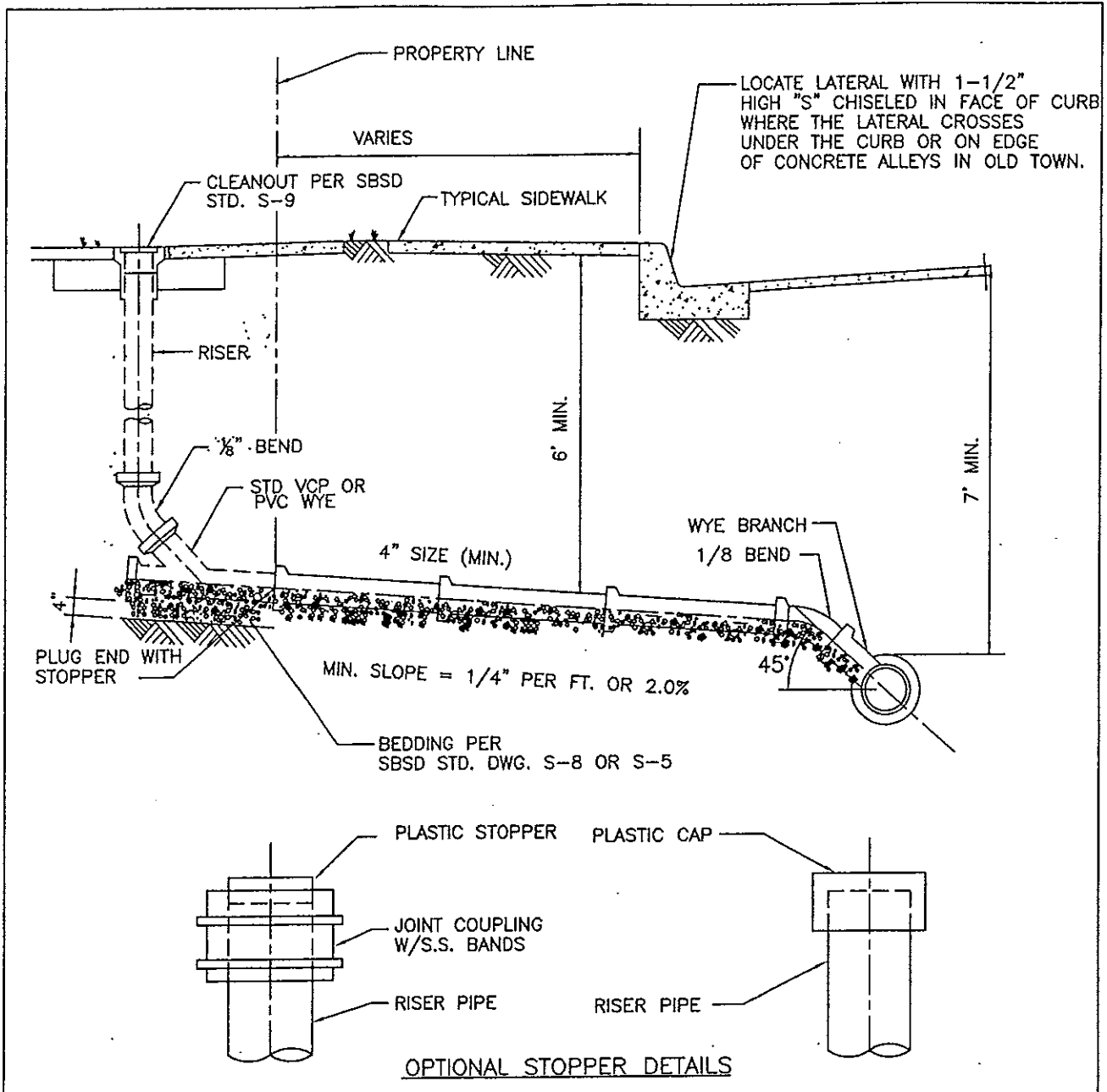
SECTION A - A

NOTES:

MANHOLE CONNECTION DETAILS

1. CONCRETE ENCASEMENT PER SBSD STD. DWG. S-10 SHALL BE USED WHERE THE TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE EXCEEDS THE MAX. WIDTH SPECIFIED ABOVE.
2. IF UNSTABLE SOIL IS ENCOUNTERED, CITY REPRESENTATIVE SHALL DETERMINE DEPTH OF REMOVAL AND SIZE OF FOUNDATION ROCK REFILL MATERIAL.
3. SEE SBSD STD. DWGS. S-1 & S-2 FOR MANHOLE DETAILS.

STANDARD DRAWING-P.V.C. PIPE BEDDING & SPECIAL DETAILS		STANDARD PLAN 925 S-5																							
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NOTES:

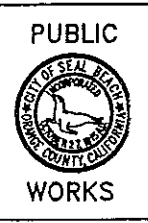
1. LATERAL SIZE TO BE DETERMINED ON THE BASIS OF TOTAL NUMBER OF FIXTURE UNITS DRAINED, BUT IN NO CASE SHALL THE LATERAL DIAMETER BE LESS THAN FOUR INCHES FOR SINGLE OR MULTIPLE FAMILY RESIDENTIAL AND SIX INCHES FOR COMMERCIAL OR INDUSTRIAL LAND USES.
2. LATERAL TO BE INSTALLED TO PROPERTY LINE.
3. IF RISER NOT BUILT, PLUG WYE BRANCH WITH STOPPER.

STANDARD DRAWING-VCP OR PVC TYPICAL LATERAL **STANDARD PLAN 925 S-6**

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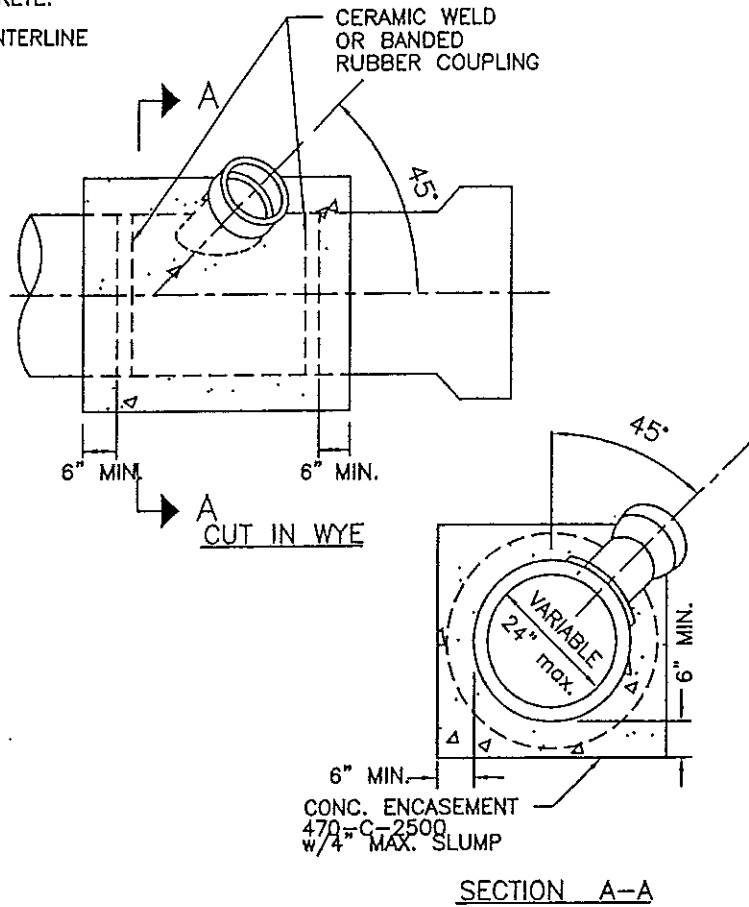
REVISIONS	
NO.	DESCRIPTIONS

SUPERCEDES	REFERENCES

SHEET 1 OF 1

NOTE:

THE BELL ON THE COLLAR WYE SADDLE SHALL NOT BE ENCASED IN CONCRETE.
 TAP TO BE MADE AT APPROX. CENTERLINE OF JOINT.




CLAY OR PVC	
8 & UP	CONNECTION BY STD MANHOLE

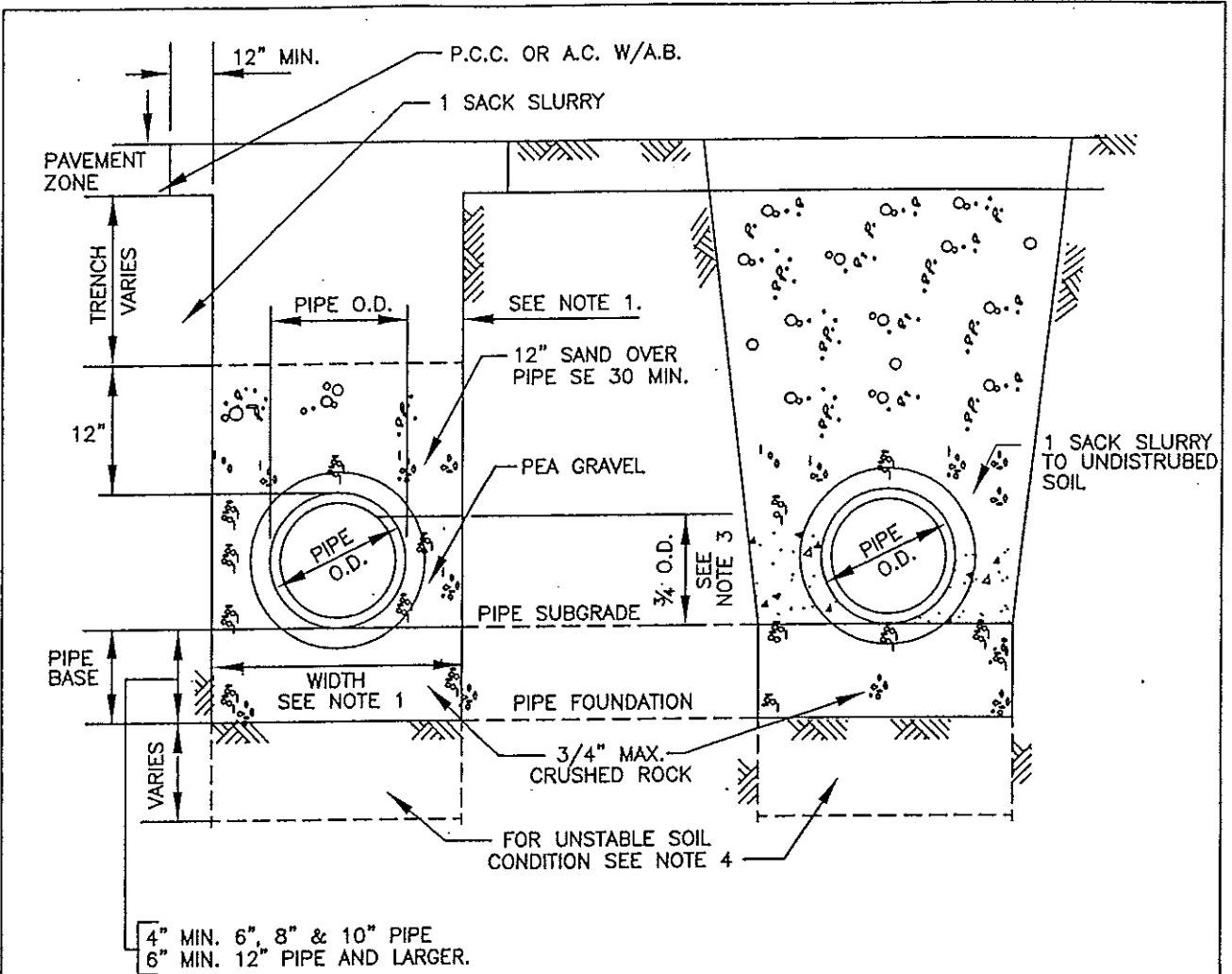
NOTES:

1. THE SADDLE CONNECTION SHALL BE SECURED WITH 470-C-2500 W/4" MAX SLUMP CONCRETE ENCASEMENT AFTER THE CONNECTION IS APPROVED BY THE CITY REPRESENTATIVE.
2. ALL CHIPS, DIRT, EPOXY, MORTAR, AND CONCRETE SHALL BE KEPT OUT OF THE SEWER.
3. DAMAGED PIPE SHALL BE REPLACED.

STANDARD DRAWING—CUT IN WYE CONNECTION

STANDARD PLAN
925 S-7

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NO.	DESCRIPTIONS																								



TYPICAL NORMAL BEDDING

OVERWIDTH BEDDING

NOTES:

1. TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE SHALL BE WITHIN THE FOLLOWING LIMIT FOR TYPICAL NORMAL BEDDING.
 - (A) MAXIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 8" MAX. EACH SIDE OF PIPE.
 - (B) MINIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 6" MIN. EACH SIDE OF PIPE.
2. OVERWIDTH BEDDING SHALL BE USED WHERE THE TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE EXCEEDS THE MAXIMUM WIDTH SPECIFIED ABOVE.
3. MAXIMUM OVERWIDTH BEDDING TO BE DETERMINED IN FIELD BY THE CITY REPRESENTATIVE ON THE BASIS OF OVERWIDTH EXCAVATED.
4. IF UNSTABLE SOIL IS ENCOUNTERED, CITY REPRESENTATIVE SHALL DETERMINE DEPTH OF REMOVAL AND SIZE OF FOUNDATION ROCK REFILL MATERIAL.

STANDARD DRAWING—V.C.P. PIPE BEDDING DETAILS

STANDARD PLAN
925 S-8

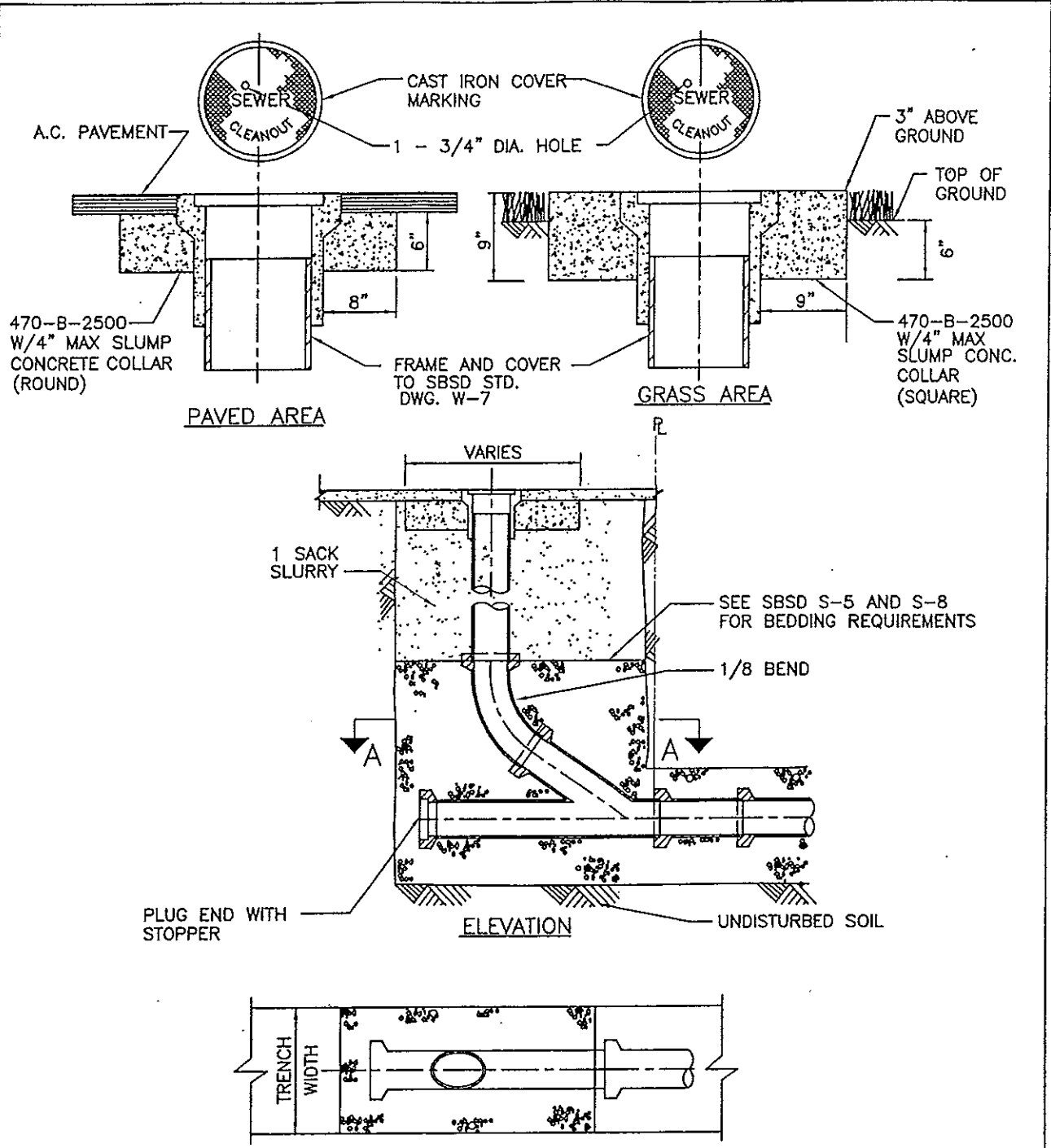
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NOTES:

- CLEANOUT PIPE TO BE SAME SIZE AND KIND OF MATERIAL AS MAIN.

STANDARD DRAWING—TERMINAL OR MAIN CLEANOUT DETAIL

**STANDARD PLAN
925 S-9**

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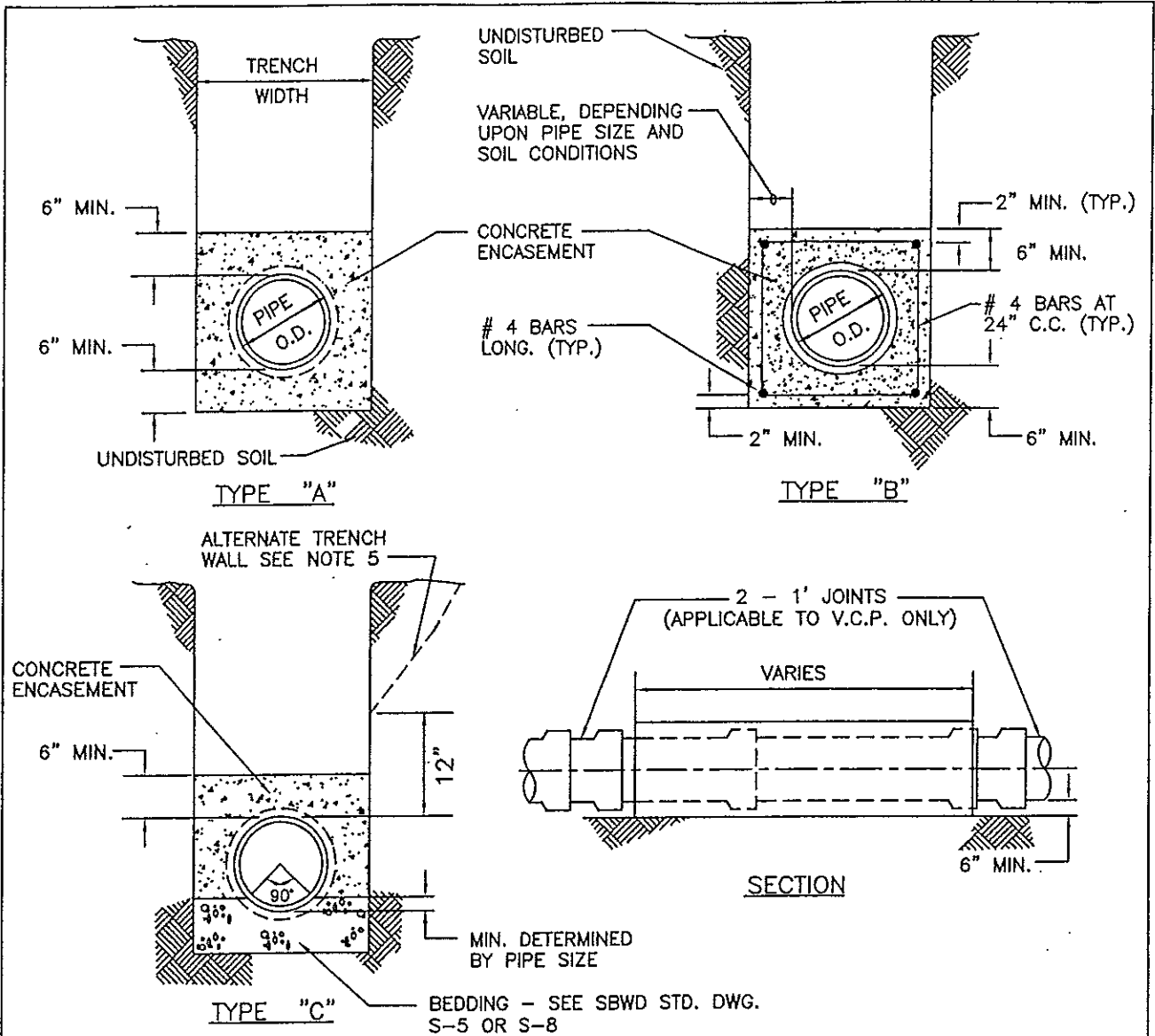
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NO.	DESCRIPTIONS


SUPERCEDES	REFERENCES

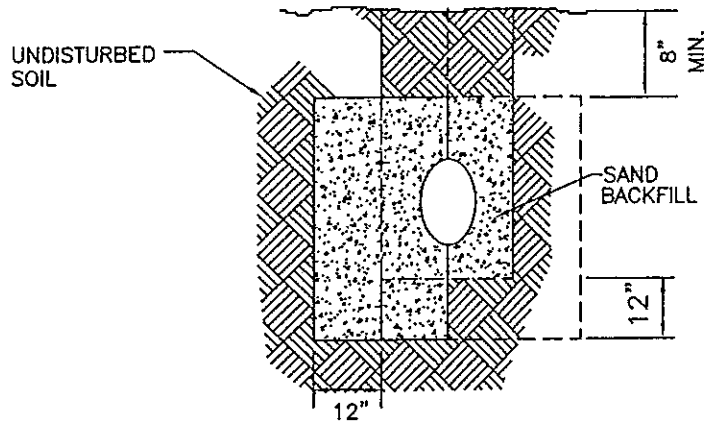
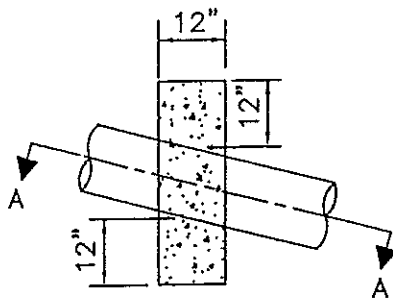
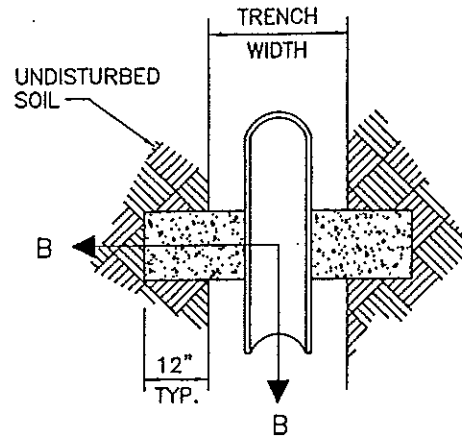
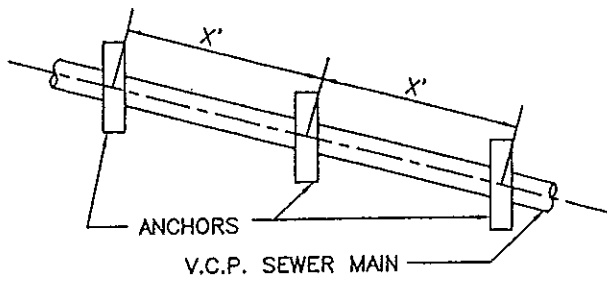
SHEET 1 OF 1



NOTES:

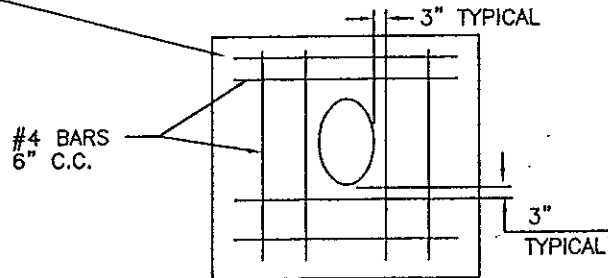
1. CONCRETE ENCASEMENT SHALL BE USED WHEN COVER IS UNDER 4' OR OVER 20'.
2. ENCASEMENT TO BE PLACED AGAINST UNDISTURBED NATURAL GROUND OR FILL COMPACTED TO 90% RELATIVE DENSITY.
3. NO. 4 STEEL REINFORCING BARS SHALL BE USED AS SPECIFIED.
4. TYPE OF CONCRETE ENCASEMENT TO BE USED WILL BE SHOWN ON PLANS OR AS SPECIFIED BY CITY REPRESENTATIVE TO MEET UNFORESEEN FIELD CONDITIONS, UNLESS NOTED OTHERWISE, ENCASEMENT SHALL BE 470-C-2500 WITH 4" MAX. SLUMP CONCRETE.
5. WHERE SLOPED TRENCHES ARE USED, WALLS WILL NOT BEGIN TO SLOPE CLOSER THAN 12" FROM THE TOP OF THE PIPE.

STANDARD DRAWING—CONCRETE ENCASEMENT TYPE A, B & C		STANDARD PLAN 925 S-10																							
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REVISIONS		SUPERCEDES	REFERENCES																						
NO.	DESCRIPTIONS																								



3" MIN. CLEARANCE BETWEEN REINFORCING STEEL AND EDGE OF CONCRETE

PIPE SLOPE	PIPE SLOPE	X DISTANCE
100%	1:1	12'
66.6%	1-1/2:1	14'
50%	2:1	16'
40%	2-1/2:1	18'
33.3%	3:1	20'



NOTES:

1. PIPE ANCHORS REQUIRED ON ALL SLOPES OF 3:1 OR STEEPER.
2. ANCHOR SHALL EXTEND 12" INTO NATURAL UNDISTURBED SOIL.
3. CONCRETE SHALL BE 560-C-3250 W/4" MAX. SLUMP.
4. ANCHORS FOR TRAPAZOIDAL TRENCH SECTIONS WILL CONFORM TO TRENCH CROSS SECTION AND EXTEND 12" INTO UNDISTURBED SOIL.

STANDARD DRAWING-CONCRETE SLOPE ANCHORS

STANDARD PLAN
925 S-11

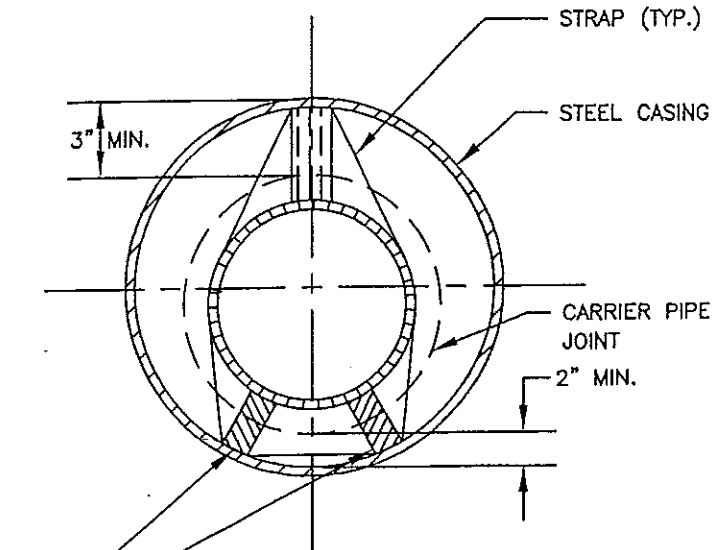
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V.C.P. SIZE	MIN. CASING SIZE	MIN. WALL THICKNESS.
6"	16" I.D.	1/4"
8"	18" I.D.	1/4"
10"	21" I.D.	5/16"
12"	24" I.D.	5/16"

P.V.C. SIZE	MIN. CASING SIZE	MIN. WALL THICKNESS.
6"	12" I.D.	1/4"
8"	16" I.D.	1/4"
10"	18" I.D.	5/16"
12"	20" I.D.	5/16"



FOR EACH LENGTH OF PIPE, 3' LONG 4" X 4" SKIDS BEVELED AT BOTH ENDS, SHALL BE STRAPPED IN PLACE 3" FROM EACH END OF PIPE. NOTCH SKID TO SEAT STRAP. STRAP SHALL BE 316 STAINLESS STEEL.

NOTES:

1. UNLESS NOTED OTHERWISE, CASING SHALL BE INSTALLED BY THE BORE, JACK AND/OR TUNNEL METHOD. IF OPEN-CUT INSTALLATION OF CASING IS ALLOWED, BACKFILL SHALL BE IN ACCORDANCE WITH SBSO STD. DWG. S-5 OR S-8.
2. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN SCHEDULE.
3. ALL STEEL CASING PIPE FIELD JOINTS SHALL BE WELDED FULL-CIRCUMFERENCE.
4. UNFINISHED 4"X4" REDWOOD SKIDS SHALL BE PROVIDED PER DETAIL ABOVE.
5. CARRIER PIPE SHALL BE AIR PRESSURE TESTED PRIOR TO FILLING CASING.
6. UPSTREAM AND DOWNSTREAM ELEVATIONS OF CARRIER PIPE TO BE VERIFIED PRIOR TO FILLING.
7. EACH END OF CASING SHALL BE SEALED WITH CONCRETE MORTAR.

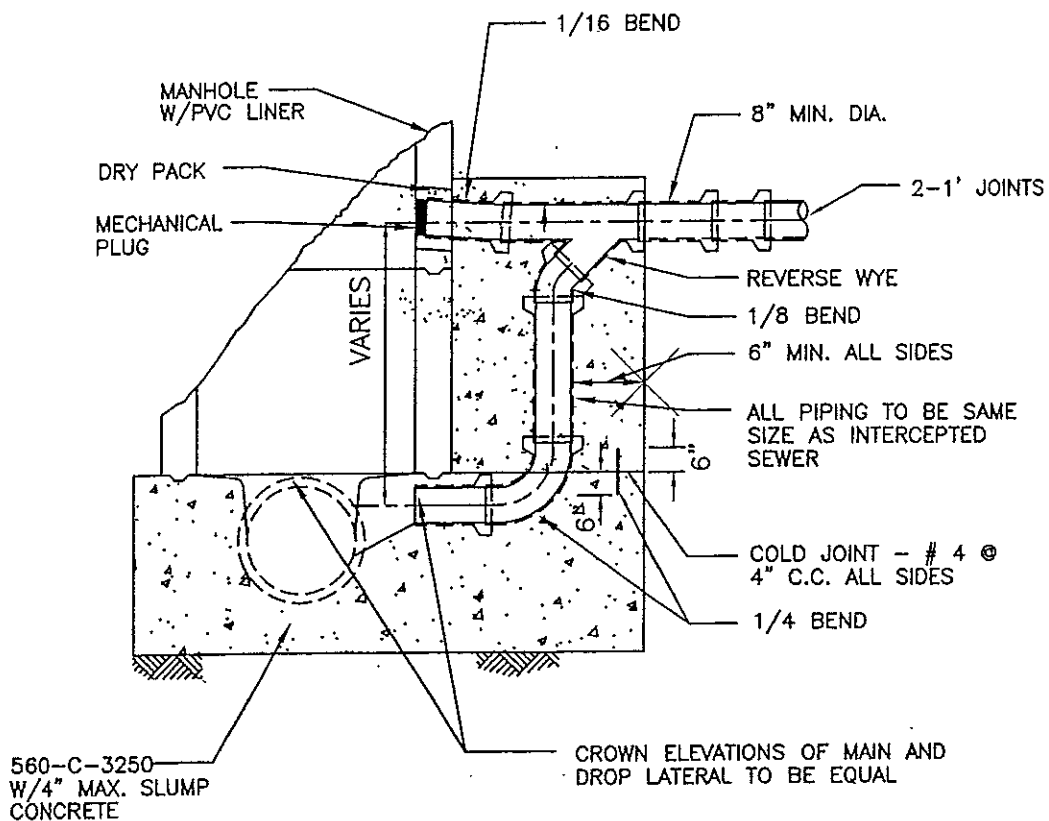
STANDARD DRAWING-STEEL CASINO PIPE

STANDARD PLAN
925 S-12

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NO.	DESCRIPTIONS		



SECTION

NOTES:

1. DROP MANHOLE TO BE USED FOR SPECIAL SITUATIONS ONLY, AND SHALL NOT BE CONSTRUCTED WITHOUT CITY APPROVAL.
2. ALL NEW OPENINGS CONSTRUCTED INTO MANHOLE SHALL BE DONE BY CORE DRILLING.
3. INTERIOR WALL OF MANHOLE TO BE LINED WITH PVC LINER PER DESIGN STANDARDS FOR SEWER FACILITIES AND STANDARD DRAWING S-14.

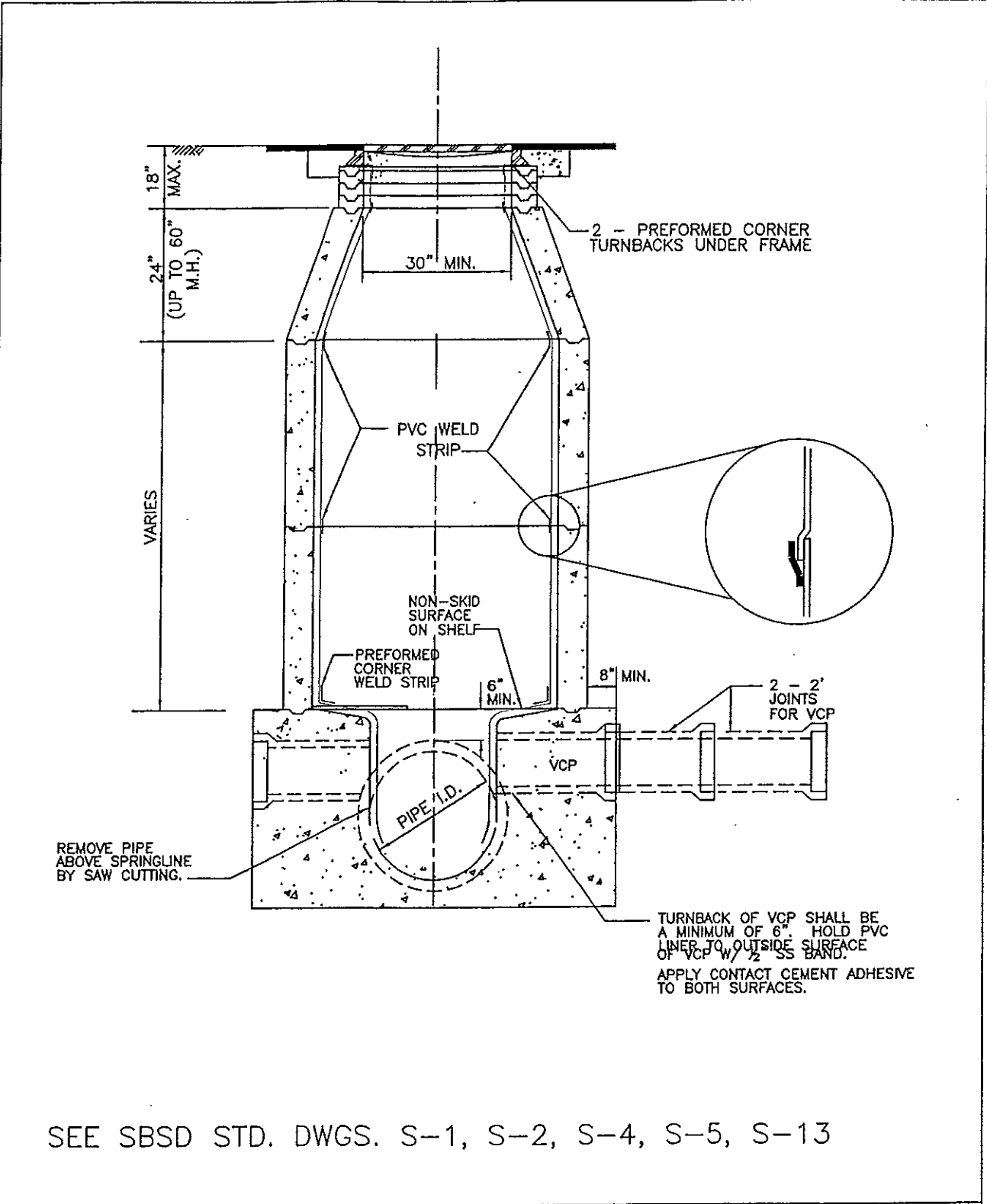
STANDARD DRAWING—DROP MANHOLE DETAIL

STANDARD PLAN
925 S-13


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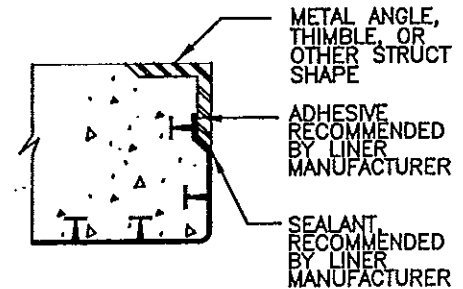
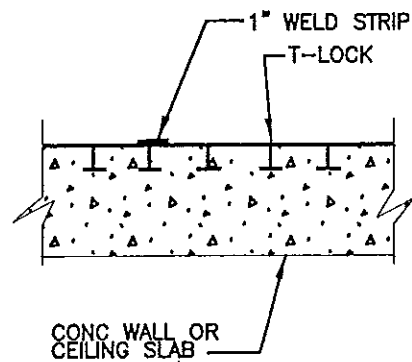
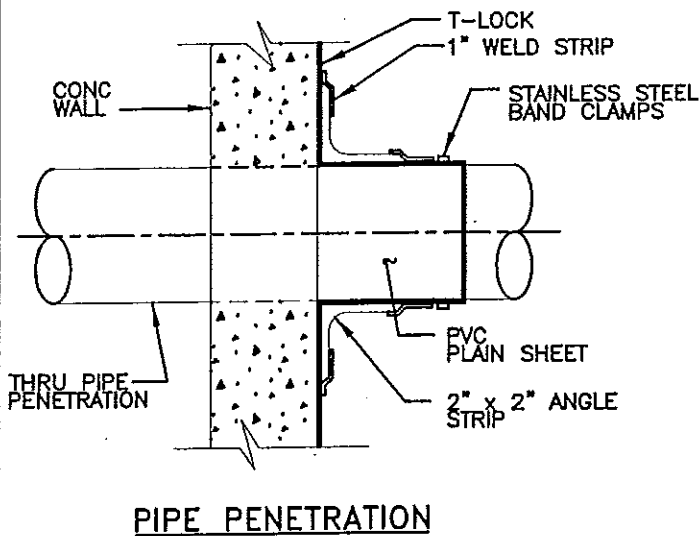
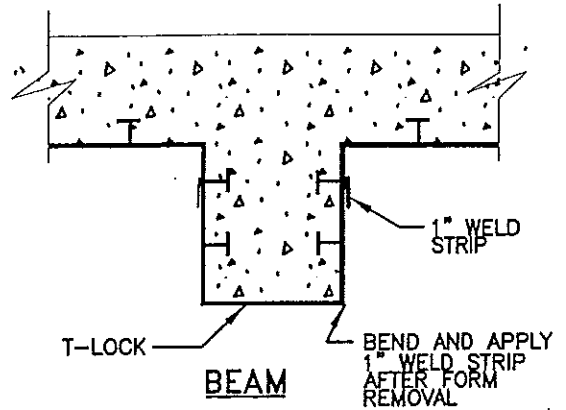
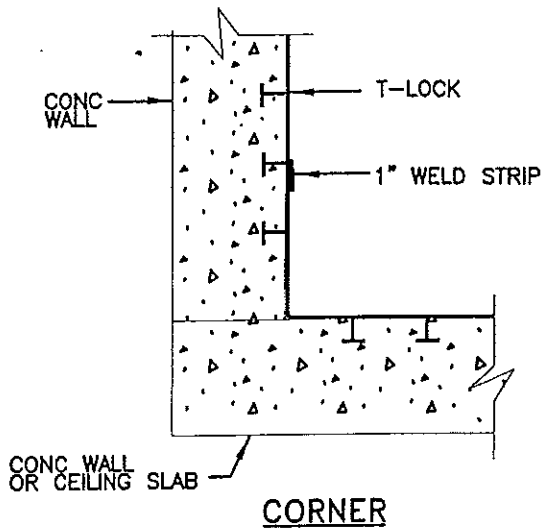


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NO.	DESCRIPTIONS		



SEE SBSO STD. DWGS. S-1, S-2, S-4, S-5, S-13

STANDARD DRAWING-PVC LINED MANHOLE FOR SEWERS		STANDARD PLAN 925 S-14																			
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NOTE

1. AT BUTT JOINTS, INSTALL 1" WELD STRIP ON FRONT AND BACK.
2. LINER RIBS SHALL BE ORIENTED VERTICALLY ON VERTICAL SURFACES.

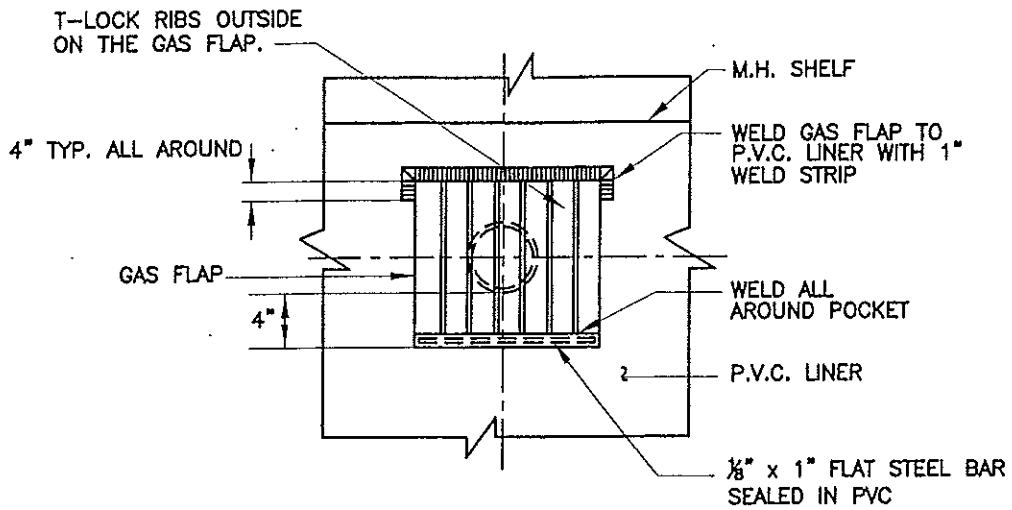
STANDARD DRAWING—P.V.C. LINER DETAILS

STANDARD PLAN
925 S-15a

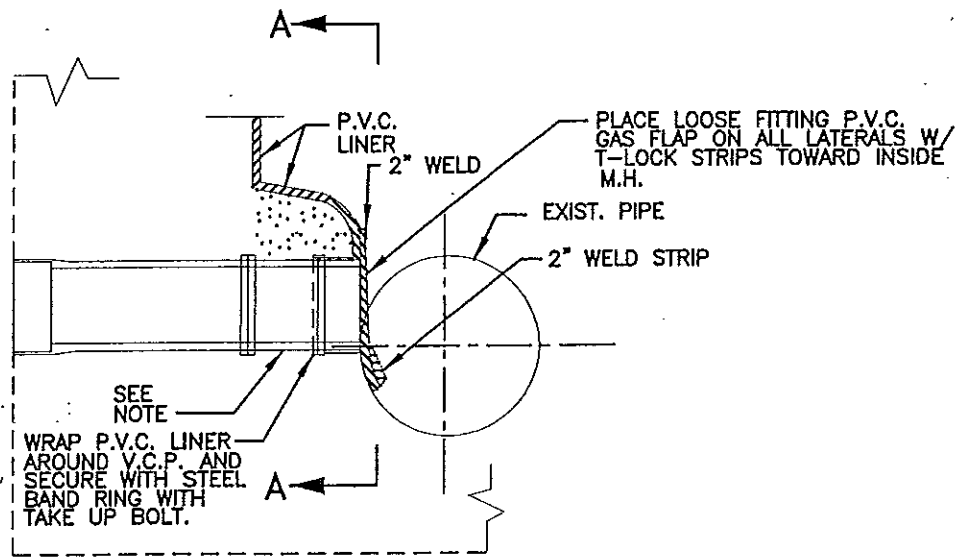
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PLAN

STANDARD DRAWING—P.V.C. LINER DETAILS

STANDARD PLAN
925 S-15b

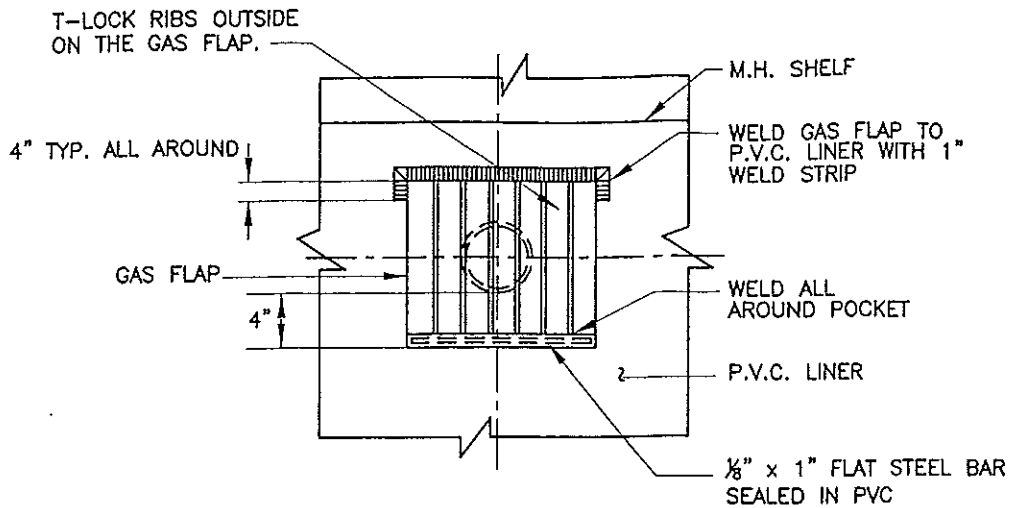
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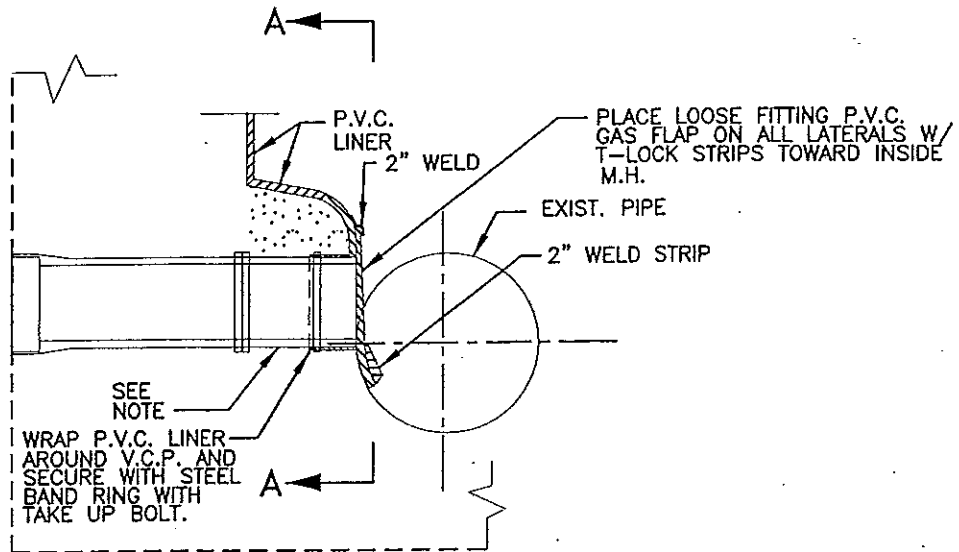
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VIEW A-A
NOT TO SCALE



PLAN

NOTE

FOR INSTALLATION AT EXISTING M.H., REMOVE INTERFERING CONCRETE AT END OF EACH LATERAL AND EXTEND VCP AS SHOWN. GROUT IN PLACE. EXTEND PVC M.H. LINER OVER GROUT AND INSTALL GAS FLAP AS SHOWN.

STANDARD DRAWING—P.V.C. LINER & GAS FLAP INSTALLATION

STANDARD PLAN
925 S-16

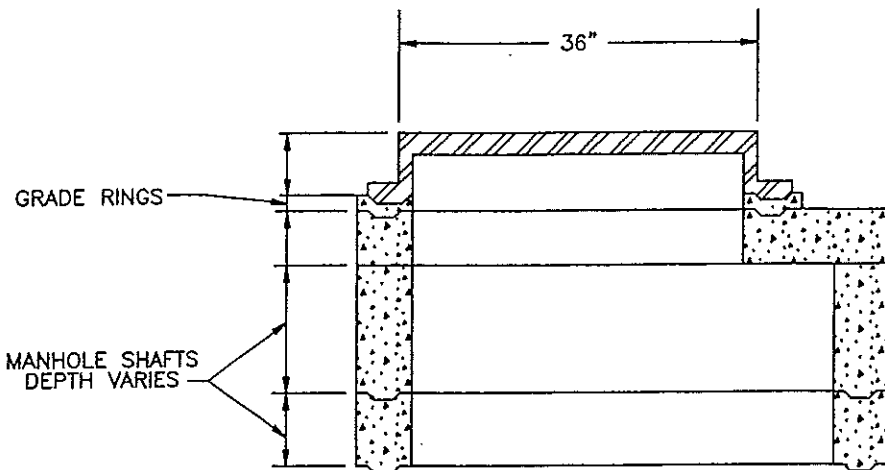
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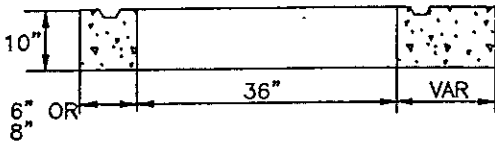
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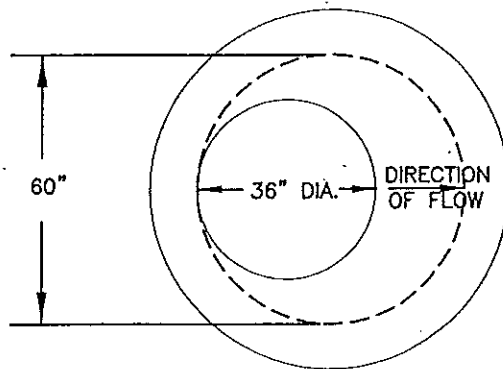
TYPICAL SECTION
FLAT TOP MANHOLE



FLAT TOP COVER

NOTES

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SBSD STD. DWG. S-1.
2. REINFORCED CONCRETE MANHOLE, QUIKSET OR APPROVED EQUAL.
3. FOR MANOLE FRAME AND COVER, SEE SBSD STD. DWG. S-4.



PLAN

STANDARD DRAWING—FLAT TOP MANHOLE

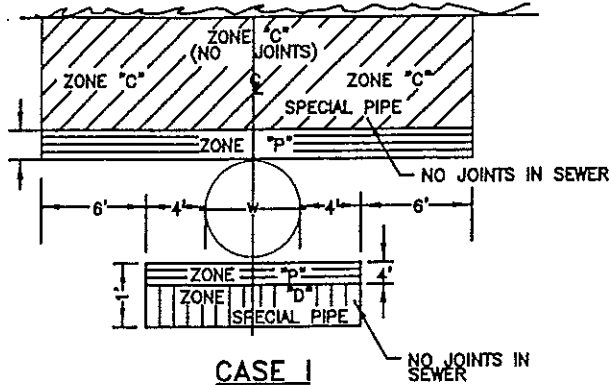
STANDARD PLAN
925 S-17

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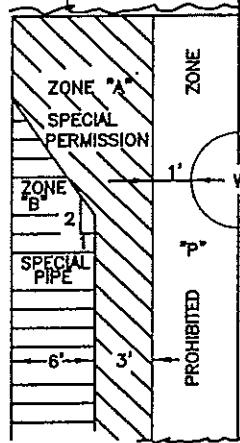
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NO.	DESCRIPTIONS		
		SHEET 1 OF 1	

NEW SEWER



NOTE: "P" IS A PROHIBITED CONSTRUCTION ZONE

NOTE:
ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES. ZONE "P" IS A PROHIBITED ZONE SECTION 84630 (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22



CASE 1: NEW SEWER BEING INSTALLED

ZONE: SPECIAL CONSTRUCTION REQUIRED FOR SEWER

- A SEWER LINES PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE RESPONSIBLE HEALTH AGENCY AND WATER SUPPLIER.
- B A SEWER LINE PLACED PARALLEL TO A WATER LINE SHALL BE CONSTRUCTED OF:
 1. EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS.
 2. PLASTIC SEWER PIPE WITH RUBBER RING JOINTS, DR 26.
 3. DUCTILE IRON PIPE WITH COMPRESSION JOINTS.
 4. REINFORCED CONCRETE PRESSURE PIPE WITH COMPRESSION JOINTS (PER AWWA C302-74).
- C A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF:
 1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS.
 2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA C900) PLASTIC PIPE OR EQUIVALENT, CENTERED OVER THE PIPE BEING CROSSED.
 3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED OVER THE PIPE BEING CROSSED.
 4. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE.

(CONT.)

ZONE

- D A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF
 1. A CONTINUOUS SECTION OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
 2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA C900) PLASTIC PIPE OR EQUIVALENT, CENTERED ON THE PIPE BEING CROSSED.
 3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED ON THE PIPE BEING CROSSED.
 4. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE.
 5. ANY SEWER PIPE SEPARATED BY A TEN-FOOT BY TEN-FOOT, FOUR-INCH-THICK REINFORCED CONCRETE SLAB.

STANDARD DRAWING-DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS

STANDARD PLAN
925 S-18a

REVIEWED
Mark V... 3-1-04
DEPUTY CITY ENGINEER-RCE 61527

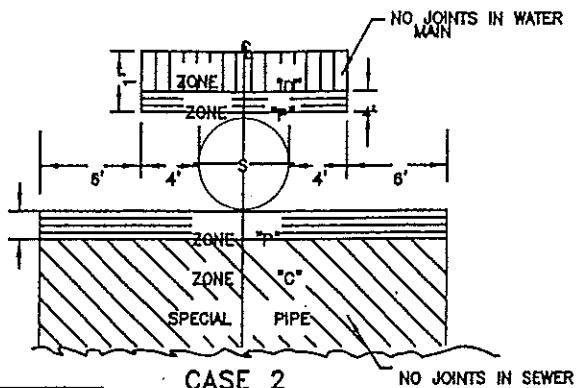
APPROVED
[Signature]
DIRECTOR OF PUBLIC WORKS-RCE 57202

DRAWN BY: _____ CHECKED BY: ZK



REVISIONS		SUPERCEDES	REFERENCES
NO.	DESCRIPTIONS		

NEW WATER MAIN

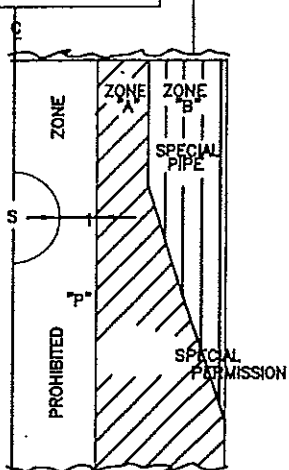


CASE 2

NO JOINTS IN SEWER

NOTE:

ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES. ZONE "P" IS A PROHIBITED ZONE SECTION 84630 (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22



(CONT.)

ZONE

D IF THE SEWER CROSSING THE WATER MAIN DOES NOT MEET THE CASE 1, ZONE D, REQUIREMENTS, THE WATER MAIN SHALL HAVE NO JOINTS IN ZONE C AND BE CONSTRUCTED OF

1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
2. DIPPED AND WRAPPED ONE-FOURTH-INCH-THICK WELDED STEEL PIPE.
3. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-74 OR C301-79 OR C303-70)

IF THE SEWER CROSSING THE WATER MAIN DOES NOT MEET THE REQUIREMENTS FOR ZONE D, CASE 1, THE WATER MAIN SHALL HAVE NO JOINTS WITHIN FOUR FEET FROM EITHER SIDE OF THE SEWER AND SHALL BE CONSTRUCTED OF:

1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
2. DIPPED AND WRAPPED ONE-FOURTH-INCH-THICK WELDED STEEL PIPE.
3. CLASS 200 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR
4. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-74 OR C301-79 OR C303-70)

CASE 2: NEW WATER MAINS BEING INSTALLED ZONE

A NO WATER MAINS PARALLEL TO SEWER SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE HEALTH AGENCY.

B IF THE SEWER PARALLELING THE WATER MAIN DOES NOT MEET THE CASE 1 ZONE B, REQUIREMENTS, THE WATER MAIN SHALL BE CONSTRUCTED OF:

1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
2. DIPPED AND WRAPPED ONE-FOURTH-INCH-THICK WELDED STEEL PIPE.
3. CLASS 200, TYPE II, PRESSURE PIPE.
4. CLASS 200 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
5. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-74 OR C301-79 OR C303-70).

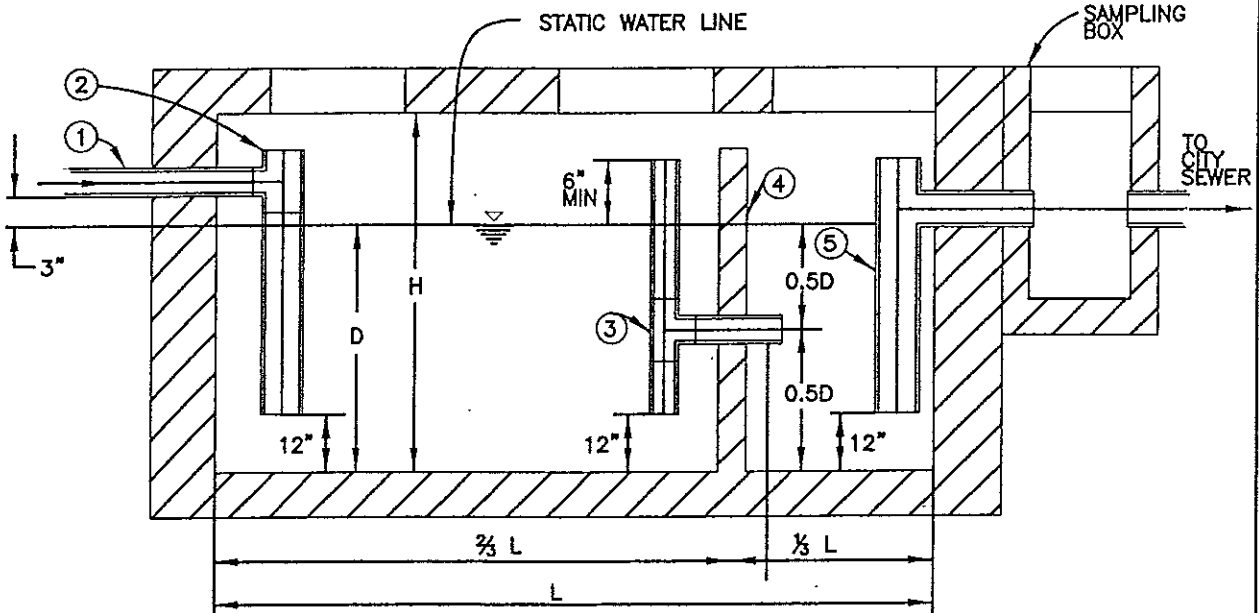
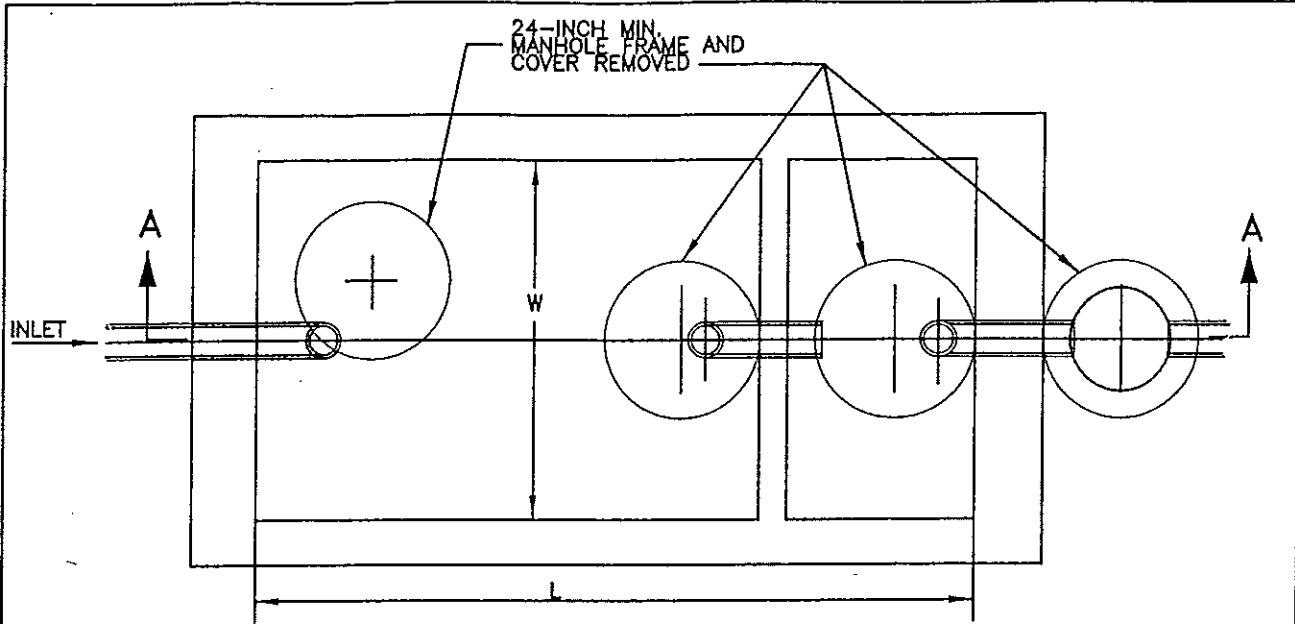
STANDARD DRAWING-DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS

STANDARD PLAN
925 S-18b

REVIEWED
Mark V... 3-1-04
DEPUTY CITY ENGINEER-RCE 61527
APPROVED
[Signature]
DIRECTOR PUBLIC WORKS-RCE 57202
DRAWN BY: _____ CHECKED BY: ZK



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NO.	DESCRIPTIONS		



- ① INLET PIPE 4-INCH MINIMUM
- ② INFLOW TEE AND STANDPIPE
- ③ CROSSOVER TEE AND STANDPIPE
- ④ BAFFLE WALL
- ⑤ OUTFLOW TEE AND STANDPIPE

NOTE:
 GREASE INTERCEPTOR SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE, APPENDIX H.

STANDARD DRAWING—TYPICAL GREASE INTERCEPTOR

STANDARD PLAN
 925 S-19

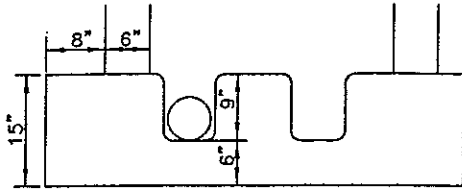
REVIEWED
Mark Vukobratovic 3-1-04
 DEPUTY CITY ENGINEER—RCE 81527

APPROVED
[Signature] 3/1/04
 DIRECTOR OF PUBLIC WORKS—RCE 67202

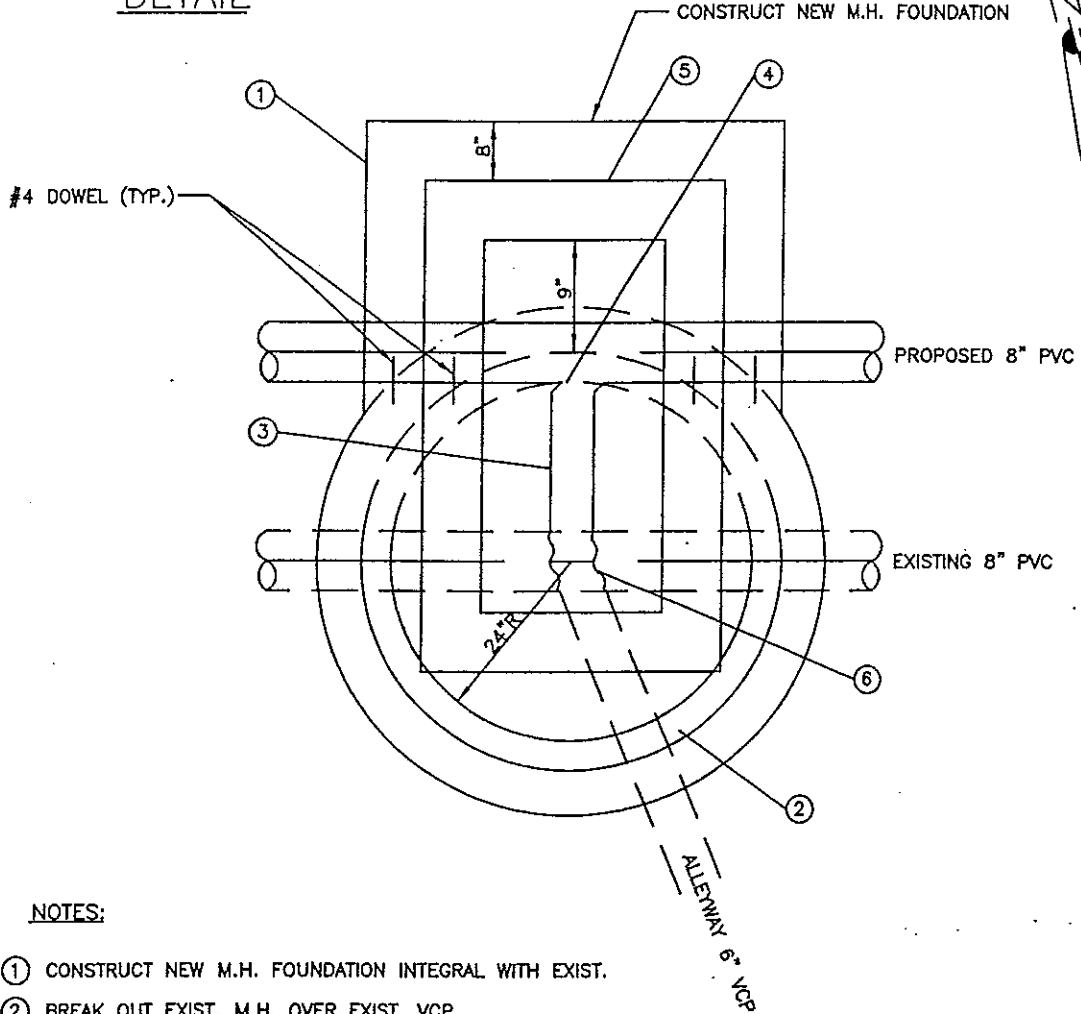
DRAWN BY: _____ CHECKED BY: ZK



REVISIONS		SUPERCEDES	REFERENCES
NO.	DESCRIPTIONS		



DETAIL



NOTES:

- ① CONSTRUCT NEW M.H. FOUNDATION INTEGRAL WITH EXIST.
- ② BREAK OUT EXIST. M.H. OVER EXIST. VCP.
- ③ FORM TROUGH FROM EXIST. VCP TO PROPOSED PVC WITH BREAK OUT PLUGS, CONSTRUCT BASE PVC, SEE DETAIL
- ④ REMOVE TOP OF PIPE TO FORM INVERT.
- ⑤ PLACE PRECAST SHALLOW DEPTH M.H., SOUTHWEST CONC. OR EQUAL (24" I.D. X 50" I.D.)
- ⑥ BREAK OUT PLUGS AND ABANDON 8" VCP AFTER LINE HAS BEEN PRESSURE TESTED.

STANDARD DRAWING—MANHOLE DETAIL

STANDARD PLAN
925 D-1

REVIEWED
Mah Vukobratovic 3-104
DEPUTY CITY ENGINEER—RCE 61527

APPROVED
[Signature]
DIRECTOR OF PUBLIC WORKS—RCE 57202

DRAWN BY: _____ CHECKED BY: ZK



REVISIONS		SUPERCEDES	REFERENCES
NO.	DESCRIPTIONS		

SHEET 1 OF 1



Registered Liquid Wastehauler Vehicles

County of Orange, Health Care Agency, Environmental Health
 1241 E. Dyer Road, Ste. 120 Santa Ana, CA 92705
 (714) 433-6287

This listing can also be found on the web at:
<http://ohealthinfo.com/civacx/filebank/blobload.aspx?BlobID=14743>

NOTE: This listing is for informational purposes only and does not constitute an endorsement or guarantee of any company or service that may be provided. Companies listed may have had one or more Liquid Waste Hauling Vehicles inspected and legally registered by this Agency. Registrations are valid through December 31, 2015.

Each Company Indicated The Following Services Were Available:

Company Name	Business Phone:	Grease Interceptor	Grease Trap	Chemical Toilet	Septic Tank	Holding Tank/Cesspool	Pipeline Blockage	Clarifier	Boat/Ship	Rec. Vehicle
Los Indios Party Rental and Porta	714-478-4544	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Martinez Pumping	(626) 625-6051	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OCBioFuel	(949) 289-5504	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ameriguard Maintenance Service	(800) 347-7876	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O.C. Vacuum, Inc.	(562) 984-8178	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diamond Environmental	(760) 744-7191	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&A Cesspool & Septic Tank	(714) 554-6582	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Golden State Pumping	(800) 491-1461	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jimni Systems, Inc.	(949) 770-7654	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mobile Harbor Services - Newport	(949) 515-8658	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rightway Portable Toilets	(951) 674-8608	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LA Grease Solutions	(323) 232-2629	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AAA Septic	(714) 836-6621	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Robert's Waste & Recycling	(714) 557-2533	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A & J Portables, Inc	(562) 299-8582	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Triple "A" Pumping, Inc.	(714) 628-0900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean Harbors Environmental Ser	(310) 764-5851	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buster Biofuels	(760) 294-9400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A-1 Septic	(714) 779-0775	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Construction Rentals	(714) 285-0243	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
So Cal Sanitation, LLC	(800) 850-8871	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liquid Environmental Solutions	(858) 481-8106	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A-Throne	(562) 981-1197	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1st Jon, Inc.	(714) 529-8646	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
R.E. Commodities	(951) 830-7315	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JN Grease Service	(951) 343-1221	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Right Angle Solutions Inc	(951) 934-3081	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Andy Gump, Inc.	(661) 251-7721	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Each Company Indicated The Following Services Were Available:

Company Name	Business Phone:	Grease Interceptor	Grease Trap	Chemical Toilet	Septic Tank	Holding Tank/Cesspool	Pipeline Blockage	Clarifier	Boat/Ship	Rec. Vehicle
Universal Waste Systems, Inc.	(562) 941-4900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
American Environmental, Inc.	(800) 669-2783	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G.G. Garcia Plumbing, Pumping	(714) 744-8912	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ocean Blue Environmental Svs	(562) 624-4120	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pumpty Dumpty	(714) 585-1969	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
West Coast Environmental Servic	909-465-5800/9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orange County Pumping	(714) 505-9662	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Darling International	(714) 556-7867	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A-1 Coast Temporary Services	(310) 325-3300	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Farris Septic	(800) 978-7900	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SoCal Pumping Co.	(866) 479-4976	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Royal Flush Pumping	(888) 656-2551	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Western Sump Services	(888) 900-0960	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Double Barrel Environmental Svs	(909) 499-6959	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ancon Marine	(562) 326-5905	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SMC Grease Specialist	(951) 788-6042	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Susy Party Rentals	(714) 329-1031	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canyon Septic Services	(714) 649-3226	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Three Stars	(714) 293-9232	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shoemaker's Enviro-Tech	(661) 296-2394	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Fats, Oils, and Grease (FOG)

Source Control Program

Fats, Oils, and Grease (FOG) discharged by residential, commercial, institutional, and industrial users present a significant problem to the wastewater collection and treatment systems, causing sewer blockages resulting to sewer overflows (spills).

To address this problem, the Orange County Sanitation District (OCSD) has established a FOG Source Control Program and an Ordinance to regulate Food Service Establishments, which discharge FOG into the sewer system.

The FOG Source Control Program will be implemented on January 1, 2005.

What is the Program Objective?

The objectives of OCSD's FOG Source Control Program for Food Service Establishments are to reduce FOG discharges into the sewer system, prevent sewage spills, and protect public health and the environment. These objectives are in accordance with the California Regional Water Quality Control Santa Ana Region's (SARWQCB) mandate. Food Service Establishments are significant FOG contributors and must share the responsibility for reducing FOG discharges.

What are the Major Requirements of the Program?

- All Food Service Establishments that discharge FOG into the sewer system are required to obtain a FOG Wastewater Discharge Permit. An annual permit fee of \$100 is proposed. However, a limited food preparation establishment is not considered a Food Service Establishment and is exempt from obtaining a FOG Discharge Permit. Exempted establishments are grouped according to limited food preparation activities that do not produce wastewater containing a significant amount of FOG. These activities include reheating, hot holding, or assembly of ready-to-eat food products. A limited food preparation establishment does not include any operation that changes the form, flavor, or consistency of food.
- All Food Service Establishments are required to implement Best Management Practices (BMPs) in their operations to minimize the discharge of FOG to the sewer system.
- All Food Service Establishments are required to pretreat their wastewater using grease interceptors to remove FOG prior to discharge to the sewer system. However, most Food Service Establishments will be granted temporary waivers from this requirement during the next three years, and the waivers may be re-issued on a case-by-case basis. A waiver may not be issued for:
 1. Newly constructed Food Service Establishments;
 2. Food Service Establishments that undergo remodeling or a major change in operations; and
 3. Food Service Establishments that have caused or contributed to grease-related blockage in the sewer

system, or that have sewer laterals connected to hotspots, or that have been determined to contribute significant FOG to the sewer system based on inspection or sampling.

- Variances may be issued to allow alternative pretreatment technology that is, at least, equally effective in controlling the FOG discharge in lieu of grease interceptors. However, Food Service Establishments must demonstrate and justify that it is impracticable to install, operate, or maintain grease interceptors.
- All Food Service Establishments required by OCSD to install grease interceptors or equivalent devices are required to properly operate and maintain the pretreatment system.

How will OCSD Implement the Program?

- Implement and enforce the FOG Ordinance that specifies general prohibitions and restrictions on FOG discharges;
- Administer enforcement measures and costs associated with FOG discharge and blockages;
- Administer a permit program to regulate wastewater discharges from Food Service Establishments;
- Track compliance through inspection of Food Service Establishments, review kitchen Best Management Practices (BMPs) and Grease Interceptor Maintenance Practices, and monitor wastewater discharges;
- Evaluate and screen the results of inspection and reports to ensure compliance with FOG requirements;
- Consistently respond to all types of violations to ensure long-term compliance; and
- Work with Food Service Establishments, when applicable, to evaluate options to pretreat wastewater to reduce FOG prior to discharge to the sewer system.

What are the Bases for Establishing the Requirements?

In developing the requirements for the FOG Source Control Program, OCSD considered the following:

- Technical Findings of the Hotspot Characterization and the Food Service Establishment Characterization Studies: In order to establish reasonable requirements in reducing FOG discharge, OCSD conducted characterization studies to thoroughly understand the nature of the FOG problem within OCSD's Area 7 (includes the City of Tustin and some other unincorporated areas.) These studies helped identify all Food Service Establishment within OCSD's Area 7 that are potential and specific sources of FOG discharges. The studies also provided valuable information on causes and preventions of sewage spills associated with FOG discharges. In addition, an evaluation of existing FOG control technologies was conducted.
- Case-by-Case Considerations vs. "One size fits all": Food Service Establishments will be evaluated individually to determine specific requirements that are applicable and appropriate towards achieving the desired environmental results.
- Balance between Cost and Environmental Benefits: To ensure that the Food Service Establishments are not financially burdened by OCSD's FOG Source Control Program, OCSD established requirements that are cost effective and balanced to achieve reasonable environmental benefits.
- Issuance of Waivers and Variances: To account for flexibility during the FOG Source Control Program implementation, OCSD allows for situations where extenuating circumstances may allow Food Service Establishment to forego installing grease interceptors.
- Experiences from other FOG Source Control Programs nationwide: OCSD evaluated several FOG Source Control Programs nationwide and used program elements/requirements that have been found to be effective and appropriate for our local setting.

What are the Plans to Address the Residential FOG Contribution?

After initial implementation of the FOG Source Control Program for Food Service Establishments, OCSD will embark on a residential outreach program that will educate and inform city residents about the effects of discharging FOG into the sewer system.



General Best Management Practices for Fats, Oils, and Grease

Residual fats, oils, and grease (FOG) are byproducts that food service establishments (FSE) must constantly manage. Typically, FOG enters a facility's plumbing system from ware washing, floor cleaning, and equipment sanitation. Sanitary sewer systems are neither designed nor equipped to handle the FOG that accumulates on the interior of the municipal sewer collection system pipes. A large percentage of Orange County's sanitary sewer overflows (sewer spills) are the result of pipe blockages from FOG accumulation from residential, institutional, and commercial sources. The best way to manage FOG is to keep the material out of the plumbing systems. The following are suggestions for proper FOG management.

Wet Cleanup - The Status Quo

It is common practice in the food service industry to use a water hose as a broom, and wash everything on the floor to the drain as a method of disposal. This method not only forces FOG into the wastewater stream, but also results in foods, detergents, disinfectants, waxes, insecticides and other chemicals entering the sewer system. Even worse than this mixed wastewater entering the sewer system, it is sometimes hosed into the storm drain, where it goes directly into our waterways unfiltered and untreated - the same waterways we use for recreation, fishing, and to supply our drinking water. This practice is not only harmful to

the environment, but it may be illegal, resulting in fines or even jail.

Dry Cleanup - The Better Way!

Rather than resort to the wet cleanup method of cleaning, OCSD recommends the dry cleanup method. The "first pass" in equipment and utensil cleaning should be made with scrapers, squeegees, or absorbents to prevent the bulk of food materials from going down the drain. Do not pour grease, fats, or oils from cooking down the drain and do not use sinks to dispose of food scraps. Likewise, it is important to educate kitchen staff not to remove drain screens as this may allow paper or plastic cups, straws, and other utensils to enter the plumbing system during cleanup. The success of dry cleanup is dependent upon the behavior of the employees and availability of the tools for removal of food before washing. To practice dry cleanup:

- Use rubber scrapers to remove FOG from cookware, utensils, chafing dishes, and serving ware.
- Use food grade paper to soak up oil and grease under fryer baskets.
- Use paper towels to wipe down work areas. Cloth towels will accumulate grease that will eventually end up in your drains from towel washing/rinsing.
- Use kitty litter to absorb liquid spills. Sweep and dispose of the liner in the trash, as long as the spilled material is not a hazardous material.

Spill Prevention

Preventing spills reduces the amount of waste on food preparation and serving areas that will require clean up. A dry workplace is safer for employees in avoiding slips, trips, and falls. For spill prevention:

- Empty containers before they are full to avoid spills.
- Use a cover to transport interceptor contents to rendering barrels.
- Provide employees with the proper tools (ladles, ample containers, etc.) to transport materials without spilling.
- Keep a spill kit in food preparation areas.

Maintenance

Maintenance is key to avoiding FOG blockages. For whatever method or technology is used to collect, filter and store FOG, ensure that equipment is regularly maintained. All staff should be aware of and trained to perform correct cleaning procedures, particularly for undersink interceptors that are prone to break down due to improper maintenance. A daily and weekly maintenance schedule is highly recommended.

- Contract with a management company to professionally clean large hood filters. Small hoods can be hand-cleaned with spray detergents and wiped down with cloths. Hood filters can be effectively cleaned by routinely spraying them with hot water with little or no detergent over the mop sink, which should be connected to a grease trap. After the hot water rinse (separately trapped), filter panels can go into the dishwasher. For hoods to operate properly in the removal of grease-laden vapors, the ventilation system will also need to be balanced with sufficient make-up air.
- Skim/filter fryer grease daily and change oil when necessary. Use a test kit provided by your grocery distributor rather than simply a “guess” to determine when to change oil. This extends the life of both the fryer and the oil. Build-up of carbon deposits on the bottom of the fryer acts as an insulator that forces the fryer to heat longer, thus causing the oil to break down sooner.
- Collect fryer oil in an oil-rendering tank for disposal or transport it to a bulk oil-rendering tank instead of discharging it into a grease interceptor or waste drain.

- Cleaning intervals depend upon the type of food establishment involved. Some facilities require monthly or once every two months cleaning. Establishments that operate a large number of fryers or handle a large amount of fried foods such as chicken, along with ethnic food establishments may need at least monthly cleanings.
- Develop a rotation system if multiple fryers are in use. Designate a single fryer for products that are particularly high in deposits, and change that one more often.

Oil & Grease Collection/Recycling

FOG is a commodity which if handled properly can be treated as a valuable resource. See Fact Sheet on Restaurant Oil and Grease Rendering.

Garbage Disposal

Businesses that use garbage disposals to dispose of food waste are simply transferring disposal from a landfill disposal to a wastewater treatment plant. Disposal of food waste via the sewer system is more costly than landfill disposal and acts as a disincentive to reduce generation of food waste or to separate food for donations, rendering, animal feed, or composting. Many business owners assume that water from their garbage disposal flows through their grease trap before discharge to the sewer system; however, in most cases, disposals are actually plumbed directly to black water systems, which bypass the grease trap.

Consumer Tip

Buyers beware! When choosing a method of managing your oil and grease, ensure that it does what the vendor says it will do. Some technologies or “magic bugs” do not eliminate the problem but result in grease accumulations further down the sewer line. “Out of sight” is not out of mind.” Check the vendor’s references before investing in technological and biological management methods.



Design Guidelines for Grease Interceptors

The installation and use of a grease interceptor that is properly designed and sized for the type and size of the facility, is an important measure in ensuring that the facility does not contribute to the problems with the sewer system or experience back-ups in the facility itself. Food Service Establishments should weigh costs and benefits when evaluating grease interceptor design and capacity need. While the initial capital investment may be less with smaller capacity grease interceptor, pumping and maintenance fees may increase. Plans for future expansions should be assessed since menu expansion, seating capacity expansion or menu changes impact the effectiveness of the grease interceptor.

Application

Grease interceptors are mainly used in treating kitchen wastewater from Food Service Establishments and other similar institutions with large volume of wastewater. Influent to grease interceptors usually contain high organic loads, including FOG and dissolved particles, as well as detergents and suspended solids. Sanitary wastewaters are not usually treated by grease interceptors. Wastewater with high solids loadings should not be discharged to grease interceptors as it can upset the interceptor performance and greatly increase both solids accumulation and the need for frequent pumpout.

For details on how a grease interceptor works and maintenance of grease interceptors, please see Fact Sheet on Grease interceptors.

Basic Design Criteria

Grease interceptors must be designed to satisfy four basic criteria in order to ensure effective separation:

- **Time.** The grease interceptor must provide sufficient retention time for emulsified FOG to separate and float to the surface of the chamber.
- **Temperature.** The grease interceptor must provide adequate volume to allow the wastewater to cool sufficiently for emulsified FOG to separate.
- **Turbulence.** Turbulence through grease interceptors must be controlled so that the FOG and solids are not suspended in the wastewater. Turbulence control is especially important during high discharge rates.
- **Tankage.** The grease interceptor must provide sufficient storage capacity for accumulated FOG and solids between cleanings.

Factors Affecting Grease Interceptor Performance

1. **Velocity of Incoming Water.** A higher velocity of water will contribute to a more turbulent mixture. This will slow the FOG separation process, thereby reducing efficiency.
2. **Ratio of FOG to Water.** The higher the ratio of FOG particles to the water, the lower the efficiency of the interceptor.
3. **Specific Gravity (Density) of FOG.** FOG has a lower specific gravity than water and will rise to the surface quickly. FOG-laden food particles having a higher specific gravity than water will

linger and accumulate at the bottom, eventually passing out of the interceptor.

4. **Possible Presence of Detergents in the System.** Grease-cutting detergents will break the liquid grease into minute particles that can cause these liquids to pass through the interceptor.
5. **Percentage of Maximum Flow Capacity.** If the maximum recommended flow is exceeded, the efficiency of the interceptor will decrease considerably.
6. **Location of Grease Interceptor.** The interceptor should be located as close as possible to the source of FOG. Plumbing leading to the grease interceptor may become clogged if the wastewater cools prior to entering the grease interceptor.

Sizing Grease Interceptors

Grease interceptors are designed and sized based on anticipated flow rates and organic load for maximum efficiency. The FOG Ordinance adopted by the Orange County Sanitation District requires grease interceptor sizing to conform to the **Uniform Plumbing Code**. To calculate the size of a grease interceptor needed by a Food Service Establishment, refer to the following formula taken from Appendix H of the Uniform Plumbing Code:

No. of Meals per peak hour ¹	x	Waste Flow Rate ²	x	Retention Time ³	x	Storage Factor ⁴	=	Interceptor Size (Liquid Capacity)
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1	Meals Served at Peak Hour										
2	To calculate the Waste Flow Rate, add all that apply: <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">With dishwashing machine</td> <td style="text-align: right;">6 gallons</td> </tr> <tr> <td style="padding-left: 20px;">Without dishwashing machine</td> <td style="text-align: right;">5 gallons</td> </tr> <tr> <td style="padding-left: 20px;">Single-service kitchen</td> <td style="text-align: right;">2 gallons</td> </tr> <tr> <td style="padding-left: 20px;">Food waste disposer</td> <td style="text-align: right;">1 gallon</td> </tr> </table>	With dishwashing machine	6 gallons	Without dishwashing machine	5 gallons	Single-service kitchen	2 gallons	Food waste disposer	1 gallon		
With dishwashing machine	6 gallons										
Without dishwashing machine	5 gallons										
Single-service kitchen	2 gallons										
Food waste disposer	1 gallon										
3	Retention Times: <table style="width: 100%; border: none;"> <tr> <td colspan="2">Commercial kitchen waste</td> </tr> <tr> <td style="padding-left: 20px;">Dishwasher</td> <td style="text-align: right;">2.5 hours</td> </tr> <tr> <td style="padding-left: 20px;">Single-service kitchen</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Single serving</td> <td style="text-align: right;">1.5 hours</td> </tr> </table>	Commercial kitchen waste		Dishwasher	2.5 hours	Single-service kitchen		Single serving	1.5 hours		
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4	Storage Factors: <table style="width: 100%; border: none;"> <tr> <td colspan="2">Fully equipped commercial kitchen:</td> </tr> <tr> <td style="padding-left: 20px;">8-hour operation</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="padding-left: 20px;">16-hour operation</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="padding-left: 20px;">24-hour operation</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="padding-left: 20px;">Single-service kitchen</td> <td style="text-align: right;">1.5</td> </tr> </table>	Fully equipped commercial kitchen:		8-hour operation	1	16-hour operation	2	24-hour operation	3	Single-service kitchen	1.5
Fully equipped commercial kitchen:											
8-hour operation	1										
16-hour operation	2										
24-hour operation	3										
Single-service kitchen	1.5										

Grease Interceptor Design and Construction Guidelines

- Grease interceptors shall be placed as close as practical to the fixture(s) being served. It shall be located where it is easily accessible at all times for inspection, cleaning, and removal of accumulated grease.
- Minimum grease interceptor size shall be 750 gallons; the maximum size shall be 1500 gallons unless authorized by OCSD in writing.
- Grease interceptors shall have two compartments. The inlet compartment shall be 2/3 of the total capacity of the interceptor and in all cases shall be longer than the maximum inside width of the interceptor. The outlet compartment shall have a minimum capacity of 1/3 of the total interceptor capacity. The liquid depth shall not be less than 2 feet 6 inches nor more than 6 feet.
- Access to each grease interceptor shall be provided by a manhole over the inlet and a manhole over the outlet. There shall also be an access manhole for each 10 feet of length for interceptors over 20 feet long. Manholes shall extend to grade, have a minimum size of 24 inches diameter or square opening, and shall have a gasketed cover at grade.
- The inlet and outlet shall have a baffle tee or similar flow device with a minimum cross sectional area equal to the required cross sectional area of the inlet. Each baffle shall extend from at least 4 inches above the liquid level to within at least 12 inches of the inside floor of the interceptor.
- Adequate partitions or baffles shall extend at least 6 inches above the liquid level. Flow from inlet compartment to outlet compartment shall be through a quarter bend, or similar device equivalent in cross sectional area to the inlet into the interceptor, and shall extend down to within 12 inches of the inside floor.
- The Inlet, outlet and main baffle shall have a free vent area equal to the required cross sectional area of the inlet pipe.

For more details regarding construction, structural, and material requirements, consult Appendix H of the UPC.



Fats, Oils, and Grease (FOG)

Definitions

Following are the definitions of terms commonly encountered in the FOG Source Control Program:

Best Management Practices	Schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the introduction of FOG to the sewer facilities.
Brown Grease	Yellow grease mixed with wastewater, e.g., waste from grease interceptors.
Change in Operations	Any change in the ownership, food types, or operational procedures that have the potential to increase the amount of FOG generated and/or discharged by Food Service Establishments in an amount that alone or collectively causes or creates a potential for SSOs to occur.
Co-Permittees	Sewering cities and agencies that are subject to the Waste Discharge Requirements (WDR).
District	The Orange County Sanitation District (OCSD).
Effluent	Any liquid outflow from the Food Service Establishment that is discharged to the sewer.
Fats, Oils, and Grease (“FOG”)	Any substance such as a vegetable or animal product that is used in, or is a byproduct of, the cooking or food preparation process, and that turns or may turn viscous or solidifies with a change in temperature or other conditions.
FOG Characterization	Study to determine location of hot spots, the location of Food Service Establishments, and any correlation between the two.
FOG Control Program	The FOG Control Program required by and developed pursuant to RWQCB Order No. R8-2002-0014, Section (c)(12)(viii).
FOG Control Program Manager	The individual designated by the District to administer the FOG Control Program. The FOG Control Program Manager is responsible for all determinations of compliance with the program, including approval of discretionary variances and waivers.
FOG Wastewater Discharge Permit	A permit issued by the District subject to the requirements and conditions established by the District that authorizes the permittee or discharger to discharge wastewater into the District’s facilities or into sewer facilities which ultimately discharge into a District facility.

Food Grinder	Any device installed in the plumbing or sewage system for the purpose of grinding food waste or food preparation byproducts for the purpose of disposing it in the sewer system.
Food Service Establishment	Facilities defined in California Uniform Retail Food Service Establishments Law (CURFFL) Section 113785, and any commercial entity within the boundaries of the District, operating in a permanently constructed structure such as a room, building, or place, or portion thereof, maintained, used, or operated for the purpose of storing, preparing, serving, or manufacturing, packaging, or otherwise handling food for sale to other entities, or for consumption by the public, its members or employees, and which has any process or device that uses or produces FOG, or grease vapors, steam, fumes, smoke or odors that are required to be removed by a Type I or Type II hood, as defined in CURFFL Section 113785. A limited food preparation establishment is not considered a Food Service Establishment when engaged only in reheating, hot holding, or assembly of ready to eat food products and as a result, there is no wastewater discharge containing a significant amount of FOG. A limited food preparation establishment does not include any operation that changes the form, flavor, or consistency of food.
Grease Control Device	Any grease interceptor, grease trap or other mechanism, device, or process, which attaches to, or is applied to, wastewater plumbing fixtures and lines, the purpose of which is to trap or collect or treat FOG prior to it being discharged into the sewer system. "Grease control device" may also include any other proven method to reduce FOG subject to the approval of the District.
Grease Disposal Mitigation Fee	A fee charged to an Owner/Operator of a Food Service Establishment when there are physical limitations to the property that make the installation of the usual and customary grease interceptor or grease control device for the Food Service Establishment under consideration, impossible or impracticable. The Grease Disposal Mitigation Fee is intended to cover the costs of increased maintenance of the sewer system for inspection and cleaning of FOG and other viscous or solidifying agents that a properly employed grease control device would otherwise prevent from entering the sewer system.
Grease Interceptor	A multi-compartment device that is constructed in different sizes and is generally required to be located, according to the California Plumbing Code, underground between a Food Service Establishment and the connection to the sewer system. These devices primarily use gravity to separate FOG from the wastewater as it moves from one compartment to the next. These devices must be cleaned, maintained, and have the FOG removed and disposed of in a proper manner on regular intervals to be effective.
Grease Trap	A grease control device that is used to serve individual fixtures and have limited effect and should only be used in those cases where the use of a grease interceptor or other grease control device is determined to be impossible or impracticable.
Hot Spots	Areas in sewer lines that have experienced sanitary sewer overflows or that must be cleaned or maintained frequently to avoid blockages of the sewer system.
Inspector	A person authorized by the District to inspect any existing or proposed wastewater generation, conveyance, processing, and disposal facilities.
Interceptor	A grease interceptor.
Manifest	That receipt which is retained by the generator of wastes for disposing recyclable wastes or liquid wastes as required by the District.
NPDES	The National Pollutant Discharge Elimination System; the permit issued to control the discharge of liquids or other substances or solids to surface waters of the United States as detailed in Public Law 92-500, Section 402.

New Construction	Any structure planned or under construction for which a sewer connection permit has not been issued.
Permittee	A person who has received a permit to discharge wastewater into the District's sewer facilities subject to the requirements and conditions established by the District.
Public Sewer	A sewer owned and operated by the District, or other local Public Agency, which is tributary to the District's sewer facilities.
Regulatory Agencies	Regulatory Agencies shall mean those agencies having regulatory jurisdiction over the operations of the District, including, but not limited to: <ul style="list-style-type: none"> a) United States Environmental Protection Agency, Region IX, San Francisco and Washington, DC (EPA). b) California State Water Resources Control Board (SWRCB). c) California Regional Water Quality Control Board, Santa Ana Region (RWQCB). d) South Coast Air Quality Management District (SCAQMD). e) California Department of Health Services (DOHS).
Regional Water Quality Control Board (RWQCB)	Agency which issued the Waste Discharge Requirements, Order No. R8-2002-0014 requiring agencies to control and prevent sewer spills.
Remodeling	A physical change or operational change causing generation of the amount of FOG that exceeds the current amount of FOG discharge to the sewer system by the Food Service Establishment in an amount that alone or collectively causes or creates a potential for SSOs to occur; or exceeding a cost of \$50,000 to a Food Service Establishment that requires a building permit, and involves any one or combination of the following: (1) Under slab plumbing in the food processing area, (2) a 30% increase in the net public seating area, (3) a 30% increase in the size of the kitchen area, or (4) any change in the size or type of food preparation equipment.
Sample Point	A location approved by the District, from which wastewater can be collected that is representative in content and consistency of the entire flow of wastewater being sampled.
Sampling Facilities	Structure(s) provided at the user's expense for the District or user to measure and record wastewater constituent mass, concentrations, collect a representative sample, or provide access to plug or terminate the discharge.
Sanitary Sewer Overflows (SSOs)	Sewer spills.
Sewer Facilities or System	Any and all facilities used for collecting, conveying, pumping, treating, and disposing of wastewater and sludge.
Sewer Lateral	A building sewer as defined in the latest edition of the California Plumbing Code. It is the wastewater connection between the building's wastewater facilities and a public sewer system.
Sewer System Management Plan (SSMP)	Plan for managing the sewer collection system.
Sludge	Any solid, semi-solid or liquid decant, subnate or supernate from a manufacturing process, utility service, or pretreatment facility.

Twenty-five percent (25%) Rule	Requirement for grease interceptors to be maintained such that the combined FOG and solids accumulation does not exceed 25% of the design hydraulic depth of the grease interceptor. This is to ensure that the minimum hydraulic retention time and required available hydraulic volume is maintained to effectively intercept and retain FOG discharged to the sewer system.
User	Any person who discharges or causes a discharge of wastewater directly or indirectly to a public sewer system. User shall mean the same as Discharger.
Waste	Sewage and any and all other waste substances, liquid, solid, gaseous or radioactive, associated with human habitation or of human or animal nature, including such wastes placed within containers of whatever nature prior to and for the purpose of disposal.
Waste Discharge Requirements (WDR)	Order that required sewerage agencies to control and prevent sewer spills and to develop a Sewer System Management Plan.
Waste Minimization Practices	Plans or programs intended to reduce or eliminate discharges to the sewer system or to conserve water, including, but not limited to, product substitutions, housekeeping practices, inventory control, employee education, and other steps as necessary to minimize wastewater produced.
Wastehauler	Any person carrying on or engaging in vehicular transport of waste as part of, or incidental to, any business for that purpose.
Wastewater	The liquid and water-carried wastes of the community and all constituents thereof, whether treated or untreated, discharged into or permitted to enter a public sewer.
Wastewater Constituents and Characteristics	The individual chemical, physical, bacteriological, and other parameters, including volume and flow rate and such other parameters that serve to define, classify or measure the quality and quantity of wastewater.
Yellow Grease	FOG after it has been used for cooking.



Fats, Oils, and Grease (FOG)

Source Control Program

Fats, Oils, and Grease (FOG) discharged by residential, commercial, institutional, and industrial users present a significant problem to the wastewater collection and treatment systems, causing sewer blockages resulting to sewer overflows (spills).

To address this problem, the Orange County Sanitation District (OCSD) has established a FOG Source Control Program and an Ordinance to regulate Food Service Establishments, which discharge FOG into the sewer system.

The FOG Source Control Program will be implemented on January 1, 2005.

What is the Program Objective?

The objectives of OCSD's FOG Source Control Program for Food Service Establishments are to reduce FOG discharges into the sewer system, prevent sewage spills, and protect public health and the environment. These objectives are in accordance with the California Regional Water Quality Control Santa Ana Region's (SARWQCB) mandate. Food Service Establishments are significant FOG contributors and must share the responsibility for reducing FOG discharges.

What are the Major Requirements of the Program?

- All Food Service Establishments that discharge FOG into the sewer system are required to obtain a FOG Wastewater Discharge Permit. An annual permit fee of \$100 is proposed. However, a limited food preparation establishment is not considered a Food Service Establishment and is exempt from obtaining a FOG Discharge Permit. Exempted establishments are grouped according to limited food preparation activities that do not produce wastewater containing a significant amount of FOG. These activities include reheating, hot holding, or assembly of ready-to-eat food products. A limited food preparation establishment does not include any operation that changes the form, flavor, or consistency of food.
- All Food Service Establishments are required to implement Best Management Practices (BMPs) in their operations to minimize the discharge of FOG to the sewer system.
- All Food Service Establishments are required to pretreat their wastewater using grease interceptors to remove FOG prior to discharge to the sewer system. However, most Food Service Establishments will be granted temporary waivers from this requirement during the next three years, and the waivers may be re-issued on a case-by-case basis. A waiver may not be issued for:
 1. Newly constructed Food Service Establishments;
 2. Food Service Establishments that undergo remodeling or a major change in operations; and
 3. Food Service Establishments that have caused or contributed to grease-related blockage in the sewer

system, or that have sewer laterals connected to hotspots, or that have been determined to contribute significant FOG to the sewer system based on inspection or sampling.

- Variances may be issued to allow alternative pretreatment technology that is, at least, equally effective in controlling the FOG discharge in lieu of grease interceptors. However, Food Service Establishments must demonstrate and justify that it is impracticable to install, operate, or maintain grease interceptors.
- All Food Service Establishments required by OCSD to install grease interceptors or equivalent devices are required to properly operate and maintain the pretreatment system.

How will OCSD Implement the Program?

- Implement and enforce the FOG Ordinance that specifies general prohibitions and restrictions on FOG discharges;
- Administer enforcement measures and costs associated with FOG discharge and blockages;
- Administer a permit program to regulate wastewater discharges from Food Service Establishments;
- Track compliance through inspection of Food Service Establishments, review kitchen Best Management Practices (BMPs) and Grease Interceptor Maintenance Practices, and monitor wastewater discharges;
- Evaluate and screen the results of inspection and reports to ensure compliance with FOG requirements;
- Consistently respond to all types of violations to ensure long-term compliance; and
- Work with Food Service Establishments, when applicable, to evaluate options to pretreat wastewater to reduce FOG prior to discharge to the sewer system.

What are the Bases for Establishing the Requirements?

In developing the requirements for the FOG Source Control Program, OCSD considered the following:

- Technical Findings of the Hotspot Characterization and the Food Service Establishment Characterization Studies: In order to establish reasonable requirements in reducing FOG discharge, OCSD conducted characterization studies to thoroughly understand the nature of the FOG problem within OCSD's Area 7 (includes the City of Tustin and some other unincorporated areas.) These studies helped identify all Food Service Establishment within OCSD's Area 7 that are potential and specific sources of FOG discharges. The studies also provided valuable information on causes and preventions of sewage spills associated with FOG discharges. In addition, an evaluation of existing FOG control technologies was conducted.
- Case-by-Case Considerations vs. "One size fits all": Food Service Establishments will be evaluated individually to determine specific requirements that are applicable and appropriate towards achieving the desired environmental results.
- Balance between Cost and Environmental Benefits: To ensure that the Food Service Establishments are not financially burdened by OCSD's FOG Source Control Program, OCSD established requirements that are cost effective and balanced to achieve reasonable environmental benefits.
- Issuance of Waivers and Variances: To account for flexibility during the FOG Source Control Program implementation, OCSD allows for situations where extenuating circumstances may allow Food Service Establishment to forego installing grease interceptors.
- Experiences from other FOG Source Control Programs nationwide: OCSD evaluated several FOG Source Control Programs nationwide and used program elements/requirements that have been found to be effective and appropriate for our local setting.

What are the Plans to Address the Residential FOG Contribution?

After initial implementation of the FOG Source Control Program for Food Service Establishments, OCSD will embark on a residential outreach program that will educate and inform city residents about the effects of discharging FOG into the sewer system.

FACT SHEET



Food Service Waste Reduction

Today's food service establishments are constantly looking for ways to improve productivity and trim costs. Waste in any operation is generated as result of inefficiencies, and therefore, reducing waste creates a more efficient operation. Solid waste disposal, energy consumption, and wastewater make up the majority of environmental challenges that restaurants must address as part of their business operations. This fact sheet is intended to provide tips on how food service establishments can reduce, reuse, and recycle these wastes.

Benefits of Waste Reduction Programs

- **Good Business:** Generally, waste reduction leads to increased operating efficiency and cost savings. Decreased solid waste generation reduces collection and disposal costs just as reducing electricity and water reduces utility bills. Waste minimization also may reduce purchasing cost.
- **Good Stewardship:** California is challenged with maintaining its clean waters, air, and land. All Californians have a responsibility to themselves, fellow citizens, and future generations to maintain a clean environment.
- **Customer Satisfaction:** Surveys show that Americans are very concerned about the environment. They appreciate restaurants and other businesses that make efforts to be more environmentally aware - at the table and the way business is conducted.

After you implement waste reduction measures, give yourself credit! Your efforts will not only attract customers, they will encourage other businesses to follow your example.

Implementing a Waste Reduction Program

Once a restaurant has made a commitment to reduce waste, the manager or waste reduction team should assess all operations, such as food preparation, food service, purchasing, and janitorial activities to identify opportunities to reduce waste and conserve water and electricity. Ideas for protecting the environment and realizing the cost benefits of waste reduction should be responsibilities of all employees in all job functions. Once waste reduction opportunities are identified, employees should be trained so they are comfortable with implementing the changes. Training should be repeated periodically to ensure that new employees are included. An employee suggestion and awards program can be established to maintain enthusiasm for the program. The remainder of this fact sheet lists specific activities that restaurants can undertake to reduce waste.

Reduction and Reuse

- Avoid over-packaging for take-out orders.
- Place health department approved rubber mats around bus and dish washing stations to reduce china and glass breakage.
- Work with suppliers to take back and reuse corrugated cardboard boxes, five-gallon buckets, and other packaging - if they will not take them back, donate buckets to customers, local schools, or churches. Do not reuse for contact with food.
- Use approved refillable condiment bottles (only after being rewashed and sanitized) instead of single-use packages. Refill them from bulk containers.

- Use reusable dishes instead of Styrofoam or other disposable ware to save on long-term purchasing costs.
- Use reusable take-home trays for regular customers.
- For take-out orders, offer condiments and straws upon request instead of self-serve.
- For dining customers, use bulk straw dispensers instead of individually wrapped straws, and place napkin dispensers on tables rather than in the central part of the dining room—people will generally take 1/3 as many napkins.
- Reduce menu printing costs where possible, for example, by reusing menus, eliminating paper inserts, and using boards to post daily specials.
- Ask your carbonated beverage supplier to provide you with reusable syrup canisters rather than the bag-in-the box type of containers.
- Use roll-type paper towels (unbleached are usually cheapest) in restrooms instead of using pre-cut paper towels.
- Train employees on the proper use of cleaning agents for concentrates, and test for proper concentration. Most people use significantly more concentrate than is required to do the job.

Recycling

- Establish glass, plastic, and cardboard recycling with a local collector.
- Share the cost of a cardboard baler for recycling with neighboring business.
- Make sure that staff is flattening tin and aluminum cans to reduce volume before placing in recycling bins.

Purchasing

- Choose environmentally friendly cleaning products, and try to purchase cleaning agents in concentrate.
- Ask for and purchase products such as paper towels, toilet tissue, menus, order pads, cash register tapes, plastic bags, dish trays, rubber mats, brooms, and benches made from recycled materials.

Electricity Conservation

- Develop and implement a cleaning and maintenance program for all equipment. This program should include calibrating ovens and checking pipes for leaks.

- Use energy-conserving fluorescent lights instead of the more common high-wattage bulbs.
- Use low-wattage bulbs in exit signs instead of the more common high-wattage bulbs.
- Clean refrigerator coils and change air conditioning filters regularly to help these appliances run more efficiently.
- Install motion or timer lights in restrooms, pantries, and freezer units. Lights can be set to go off after three to five minutes of inactivity.
- Set thermostats at reasonable levels.

Water Conservation

- Clean spills with a squeegee, broom, or vacuum.
- Install low-flow faucet adapters, and/or automatic turnoff faucets, and low-flow toilets in restrooms. Of the total water used in restaurants, restroom water usage ranges from 50 percent in full-service restaurants to 80 percent in fast food restaurants.
- Never hose material down the drain. This practice not only wastes water, but it contributes to organic loading at the wastewater treatment plant.
- Provide drinking water to customers only upon request.
- Replace rubber faucet gaskets with brass gaskets and automatic shut off nozzles to save thousands of gallons/year.

Fats, Oils, and Grease (FOG) Waste Management

The National Restaurant Association estimates that 20 percent of all food prepared commercially in the United States goes to waste, and grease is responsible for a large percentage of all sewer overflows in the country. The best way to manage FOG is to keep it out of the sewer system by using Best Management Practices (BMPs). BMPs are activities, prohibitions of practices, maintenance procedures, and other management practices that reduce the discharge of FOG from the wastewater discharge. For details, see Fact Sheet for Best Management Practices for Fats, Oils, and Grease.

Waste reduction offers cost savings that benefit both small and large operations. Once your waste reduction program is underway, track your waste reduction, cost savings, and get the word out! You do not have to do it all at once - choose actions that are doable, document your success, and then move on to the harder projects.



Fats, Oils, and Grease (FOG)

Source Control Program

Frequently Asked Questions (FAQs)

The Orange County Sanitation District (OCSD) has adopted a Fats, Oils, and Grease (FOG) Ordinance which will be effective on January 1, 2005. Concurrently, OCSD will implement a FOG Source Control Program to regulate discharges from Food Service Establishments (FSEs) such as restaurants. Following are frequently asked questions from FSEs impacted by this program.

Are Food Service Establishments (FSEs) required to have permits to discharge to the sewer system?

- Yes. Beginning January 1, 2005, it is illegal for FSEs to discharge to the sewer system without a valid FOG Wastewater Discharge Permit (permit).

Is there any exemption from this permit requirement?

- Yes. Limited food preparation establishments are not considered FSEs and are exempt from obtaining a permit. Limited food preparation establishments are those that are engaged only in reheating, hot holding or assembly of ready-to-eat food products and as a result, there is no wastewater discharge containing a significant amount of FOG.

Are FSEs required to apply for a permit prior to January 1, 2005?

- No. There is no need to apply for a permit at this time. OCSD has simplified the initial permitting process by identifying and conducting inspection of FSEs that need a permit.
- Existing FSEs may expect to receive their permit before January 1, 2005.
- New FSEs and FSEs that have not been identified during the initial permitting process will have to apply for a permit to discharge to the sewer legally.

Is there a permit fee and how much?

- No. Although there is no permit fee during the initial permit issuance, OCSD anticipates adoption of a fee resolution by its Board of Directors in March 2005. A \$100 annual permit fee and a \$100 noncompliance fee for each instance of noncompliance are proposed to recover the costs of program administration.
- After the permit fee is adopted, new FSE applicants will be charged the permit fee. Likewise, existing FSEs with permits will be charged the permit fee upon renewal of their expired initial permit.

Are there additional fees?

- No. Currently, FSEs are already paying user charges for treatment of wastewater discharged to the sewer, as part of their property taxes. There are no new fees other than the new permit fee and the existing user charges.

What are the major requirements of the permit?

To reduce FOG discharges to the sewer from FSEs, following are the major requirements of the permit:

- FSEs are required to implement Best Management Practices (BMPs) in their operations to minimize the discharge of FOG to the sewer system.
- FSEs are required to pretreat their wastewater using grease interceptors to remove FOG prior to discharge to the sewer system. Most FSEs will be granted temporary waivers from this requirement during the next three years; waivers may be re-issued or revoked on a case-by-case basis. Variances may also be issued to allow alternative pretreatment technology that is, at least, equally effective in controlling the FOG discharge in lieu of grease interceptors, to FSEs able to demonstrate that it is impossible or impracticable to install, operate, or maintain grease interceptors.
- All Food Service Establishments required to install grease interceptors or equivalent devices is required to properly operate and maintain the pretreatment system.

What are Best Management Practices (BMPs)?

- BMPs are schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the introduction of FOG to the sewer system. OCSD will provide educational outreach material to FSEs regarding implementation of BMPs.
- BMPs help reduce the amount of FOG and solids going to grease interceptors resulting in less frequent cleaning, thus reducing maintenance costs.

Are all FSEs required to implement BMPs?

- Yes. Implementation of BMPs is a basic and necessary requirement for all FSEs. The best way to stop FOG from building up in the sewer lines is to prevent it from entering the drains using kitchen BMPs. Implementation of BMPs may involve some minor expense to properly and consistently prevent FOG from getting discharged to the sewer system. BMPs are proven effective and economical tools to control FOG at the source.

Are FSEs required to install grease interceptors?

- Although the Ordinance requires FSEs to install grease interceptors, the implementation of this requirement is delayed for the next three years. Waivers will be issued to most FSEs, except for the following:
 - Newly constructed FSEs.
 - FSEs that undergo remodeling or a major change in operations.
 - FSEs that have caused or contributed to grease-related blockage in the sewer system, or which have sewer laterals connected to hotspots, or which have been determined to contribute significant FOG to the sewer system based on inspection or sampling.
- Waivers may be re-issued for those FSEs that have insignificant impact or may be revoked at any time when the FSE is determined to have significant impact.

Are FSEs going to be inspected by OCSD?

- Yes. OCSD will conduct inspections of FSEs as part of its enforcement program to determine compliance with the Ordinance and permit requirements. Inspections will be conducted to evaluate the following:
 - Compliance with kitchen BMP requirements
 - Compliance with grease interceptor requirements for those who are required to have a grease interceptor.
- In lieu of routine kitchen inspections to evaluate implementation of BMPs, FSEs may submit BMP Monitoring Reports semi-annually describing BMPs in place. Details are provided in the permit.
- Grease interceptors will be inspected on a routine basis to evaluate compliance with the pump-out and maintenance requirements.

Are there penalties for noncompliance?

- Yes. Any person who violates any provision of the FOG Ordinance; or any permit condition, prohibition or effluent limitation; or any suspension or revocation order shall be liable civilly for a penalty pursuant to Article 6 of the FOG Ordinance, for each day in which such violation occurs.
- OCSD, by Order of the General Manager, may physically terminate sewer service on a term of any order of suspension or revocation of a permit or upon the failure of a person not holding a valid wastewater discharge permit to immediately cease discharge, whether direct or indirect, to OCSD's sewer facilities after due notification.



Fats, Oils, and Grease (FOG)

Issues: Frequently Asked Questions (FAQs)

The following are frequently asked questions intended to provide general information to Food Service Establishment in the City of Tustin and unincorporated areas in Orange County Sanitation District's (OCSD) Area-7 regarding issues related to Fats, Oils, and Grease discharge.

What is FOG?

- FOG refers to animal and vegetable fats, oils, and greases that are commonly used and generated from Food Service Establishments involved in food preparation. FOG is found in butter and margarine, baking goods, cooking oil, dairy products, food scraps, lard, meat fats, etc.

Why is FOG a Problem?

- When poured down the drain, FOG can build up over time in pipes, pumps, and equipment, causing significant problems to the OCSD's sewer collection system and wastewater treatment plant. Problems include sewer line blockages that can lead to sewer overflows (spills) that causes environmental and health hazards.
- Sewer overflows releases contain disease-causing bacteria, viruses, and other human health pathogens that can easily be transported to high recreational waterways, such as Orange County's beaches jeopardizing public health.

- During the period of July 2000 through July 2003, the City of Tustin and some unincorporated areas within OCSD's jurisdiction had 62 FOG-related blockages/sewage spills.

What is being done to Prevent FOG related Sewer Overflows?

- The California Regional Water Quality Control Board (Santa Ana Region) issued an order in April 2002 that mandates cities and sanitary agencies to prevent sewer overflows related to grease blockages.
- To comply with this order, OCSD has adopted a FOG Ordinance intended to target Food Service Establishments such as restaurants in the City of Tustin and unincorporated within the OCSD's Area 7.

Why Should I Care About FOG?

- Food Service Establishments have been identified as significant contributors of FOG in the sewer lines because of the amount of grease produced during cooking, food preparation, and kitchen clean. If Food Service Establishments are found in noncompliance with OCSD's FOG Ordinance, OCSD may subject Food Service Establishments to civil penalties including fines or may escalate to criminal penalties including guilty of a misdemeanor or imprisonment.
- Beginning January 1, 2005, OCSD's FOG Ordinance becomes effective requiring Food

Service Establishments to comply with the provisions and conditions set forth in the FOG Ordinance. These provisions include, but not limited to, Food Service Establishments complying with a FOG Wastewater Discharge Permit (permit), implementing Best Management Practices, and installing grease interceptors intended to reduce FOG discharge into OCSD's sewer system. See fact sheet "Core Elements: Fats, Oils, and Grease Ordinance No. OCSD-25."

What are ways to reduce the amount of grease that goes down the drain?

- Food Service Establishments are responsible to implement Best Management Practices to reduce FOG discharge into OCSD's system. A list of Best Management Practices is included with the FOG Permit Packet.

Whom do I contact regarding FOG related issues?

FOG Source Control Management:

Mahin Talebi, OCSD Source Control Manager
(714) 593-7410

FOG Source Control Program Permit and Enforcement:

Jerry Evangelista, OCSD Source Control Supervisor
(714) 593-7419

Tom Gaworski, OCSD Principle Environmental Specialist
(714) 593-7422

FOG Regional Issues:

Mark Kawamoto, OCSD Engineer
(714) 593-7424

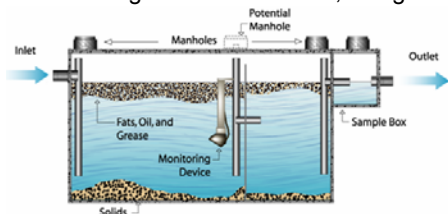


Grease Interceptors

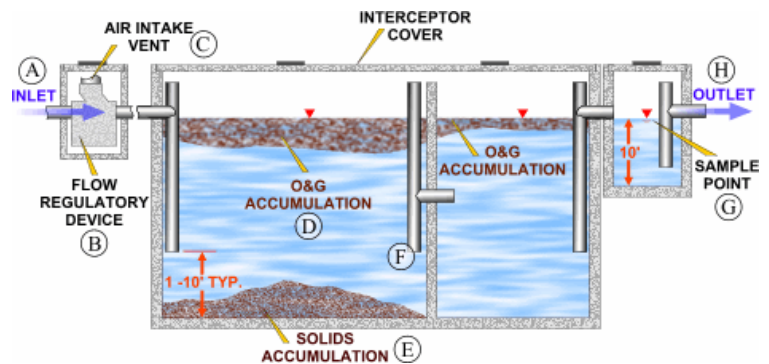
When fats, oils, and grease (FOG) enter the sewer, they create a variety of problems, such as sewer blockages and spills, which put the health and safety of the public at risk. Grease interceptors have played an important role in preventing accumulated FOG from clogging sewer lines. A grease interceptor is a proven and effective grease collection device, which when combined with Best Management Practices (BMPs), significantly reduces the amount of FOG entering the sewer.

What is a Grease Interceptor?

- A grease interceptor is a control device that is designed to collect and intercept FOG and food waste from wastewater discharged from Food Service Establishments, until they can be removed and disposed by wastehauling. It is typically a large concrete box with two or three compartments and is usually installed underground outside Food Service Establishments.
- Grease interceptors separate FOG from wastewater by gravity. Since FOG weighs less than water, the grease floats on the water surface when given sufficient time.
- Grease interceptors are designed such that the wastewater flow is slowed down to allow sufficient time for FOG to separate. This allows FOG to collect as a thick mat on the surface inside the interceptor.



How it works



The following describes how a grease interceptor works:

A	Flow from undersink grease traps or directly from plumbing fixtures enters the grease interceptor. The Uniform Plumbing Code (UPC) requires that all flow entering the interceptor must enter through the inlet pipe.
B	An approved flow control or restricting device is installed to restrict the flow to the grease interceptor to the rated capacity of the interceptor.
C	An air intake valve allows air into the open space of the grease interceptor to prevent siphonage and back-pressure.
D	FOG floats on the water surface and accumulates behind the grease retaining fittings and the wall separating the compartments. FOG will be removed during routine grease interceptor cleaning.
E	Solids in the wastewater that do not float will be deposited on the bottom of the grease interceptor and will need to be removed during routine grease interceptor cleaning.
F	Grease retaining fittings extend down into the water to within 12 inches of the bottom of the interceptor. Because FOG floats, it generally does not enter the fitting and is not carried into the next compartment. The fittings also extend above the water surface to provide air relief.

G	Some interceptors have a sample box so that inspectors or employees of the food service establishment can periodically take effluent samples. Having a sample box is recommended by the UPC but not required.
H	Flow exits the interceptor through the outlet pipe and continues on to the sanitary sewer system.

Installation Considerations

- Install the grease interceptor as close as practical to the fixture(s) being served. This is important because every foot of piping between the fixture(s) and the interceptor is a potential maintenance problem.
- The grease interceptor should be located in an accessible area such that cleaning and maintenance can be easily performed. The placement should allow the interceptor cover to be visible and easily removable for cleaning. Anticipate sufficient clearance for removal of the cover and baffle for cleaning.
- Plumbing containing discharges from food grinders, dishwashers, and wastes from toilets, urinals, wash basins, and other fixtures containing fecal materials should bypass the grease interceptor.
- A properly sized and designed grease interceptor may not work efficiently if it is installed incorrectly. A licensed plumbing contractor can handle all aspects of the interceptor installation which may include equipment procurement, plumbing, and in-ground installations that include excavations and concrete cutting/repair.
- The cost of installation will vary depending on the site. Cost factors include the size of the device, space, grade, proximity to a sewer line, and above-ground or in-ground installation.

Proper Maintenance

Regular maintenance is essential to the proper operation of grease interceptors. Even the best designed and properly installed interceptors will fail when improperly maintained.

- Grease interceptor maintenance, which is usually performed by permitted haulers or recyclers, consists of removing the entire volume (liquids and solids) from the grease interceptor and properly disposing of the material in accordance with all Federal, State, and/or local laws.
- Grease interceptors must be fully pumped out and cleaned at a frequency such that the combined FOG and solids accumulation does not exceed 25% of the total interceptor design hydraulic depth. This is to ensure that the minimum hydraulic retention time and required available hydraulic volume are maintained to effectively intercept and retain FOG discharged from the facility.
- OCSD's FOG Ordinance requires Food Service Establishments to clean their grease interceptors at least

every 6 months. Typically, Food Service Establishments are required to clean grease interceptors once every 3 months. The frequency may increase depending on the capacity of the device, the amount of FOG in the wastewater, and the degree to which the facility has contributed to blockages in the past.

- Implementation of BMPs may reduce the required maintenance frequency for grease interceptors due to a reduction of FOG and solids loading on the interceptor, thereby reducing maintenance costs. Refer to the Fact Sheet for BMPs that may be implemented.

Maintenance Procedures

A proper grease interceptor maintenance procedure is outlined below:

1	Contact a grease hauler or recycler for cleaning.
2	Ensure that all flow to the interceptor is stopped by shutting the isolation valve in the inlet piping to the interceptor.
3	Remove the lid and bail out any water in the trap or interceptor to facilitate cleaning.
4	Remove baffles if possible.
5	Dip the accumulated grease out of the interceptor and deposit in a watertight container.
6	Pump out the settled solids and then the remaining liquids.
7	Scrape the sides, the lid, and the baffles with a putty knife to remove as much of the grease as possible, and deposit the grease into a watertight container.
8	Replace the baffle and the lid.

Choosing a Grease Hauler

When selecting a grease waste hauler, be aware that services and prices can vary. Minimum services should include:

- Complete pumping and cleaning of the interceptor, rather than just skimming the FOG layer.
- Deodorizing and thorough cleaning of affected areas, as necessary.
- Disposal/reclamation at an approved location.

Representatives of food service establishments should witness all cleaning/maintenance activities to verify that the interceptor is being fully cleaned and properly maintained.





Keeping Records







Careful record-keeping is one of the best ways to ensure that the grease interceptor is being cleaned and maintained on a regular basis.



Kitchen Best Management Practices (BMPs) for Fats, Oils, and Grease (FOG)

The best way to stop FOG from building up in sewer lines is to prevent it from entering your drains, by using “Kitchen Best Management Practices.” The most common Kitchen BMPs are listed below.

Kitchen BMP	Reason For	Benefits to Food Service Establishment
<p>Train employees in kitchen BMPs, including the proper methods of FOG disposal. Provide frequent refresher training as well.</p> 	<p>Employees are more willing to support an effort if they understand the importance of implementing BMPs to prevent sewer spills.</p>	<p>Subsequent benefits of BMPs will have a better chance of being implemented.</p>
<p>Display the appropriate “No Grease” signs or posters prominently in the workplace.</p> 	<p>Signs serve as a constant reminder for employees working in kitchens.</p>	<p>These reminders will help minimize grease discharge to the traps and interceptors and reduce the cost of cleaning and disposal.</p>
<p>Install screens on all kitchen drains. Consider openings that are not more than 3/16 inch. Screens should be removable for frequent cleaning.</p> 	<p>Drain screens prevent food particles containing FOG from entering into the sewer system and causing sewer blockages.</p>	<p>This will reduce the amount of material going to grease traps and interceptors. As a result, grease traps and interceptors will require less frequent cleaning, thus reducing maintenance costs.</p>
<p>Hot water over 140°F from cooking or cleaning operations should not be put down a drain that is connected to a grease trap or grease interceptor.</p> 	<p>Temperatures in excess of 140°F will dissolve grease, which may re-congeal or solidify in the sanitary sewer collection system as the water-cools down in temperature.</p>	<p>Using water less than 140°F where applicable will reduce gas or electric energy costs for heating the water. This will also help prevent FOG “pass through” in grease interceptors.</p>

Kitchen BMP	Reason For	Benefits to Food Service Establishment
<p>When transporting used FOG, don't overfill containers and use covers.</p> 	<p>If containers are overfull or lack covers, the FOG may spill over.</p>	<p>This will prevent FOG drips and spills.</p>
<p>Pour all cooking grease (yellow grease) and liquid oil from pots, pans and fryers into a covered grease container for recycling. Use a permitted waste collection service or authorized rendering/recycling center and keep a log.</p> 	<p>Recycling reduces the amount of FOG discharged to the sewer. There are several waste oil rendering facilities throughout Southern California (reference Restaurant Oil and Grease Rendering Fact Sheet).</p>	<p>The Food Service Establishment may be paid for the waste material, reducing the amount of waste/garbage it must pay to have it hauled away.</p>
<p>Scrape or dry-wipe excess food and solidified grease from pots, pans, fryers, utensils, screens and mats, then dispose of it in the trash.</p> 	<p>By dry-wiping pots, pans, and dishware and disposing food wastes in garbage receptacles, the material will not be sent to the grease traps and interceptors, but instead go to the landfill.</p>	<p>This will reduce the amount of material going to grease traps and interceptors, which will require less frequent cleaning, thereby reducing maintenance cost.</p>
<p>Dispose of food waste by recycling and/or solid waste removal.</p> 	<p>Some recyclers will take food waste for animal feed. In the absence of such recyclers, the food waste can be disposed as solid waste in landfills by solid waste haulers.</p>	<p>Recycling of food waste will reduce the cost of solids waste disposal. Solid waste disposal of food waste will reduce the frequency and cost of grease trap and interceptor cleaning.</p>
<p>Use "Spill Kits" – make your own spill kits with absorbent material such as absorbent pads or kitty litter. Keep them well-marked and accessible for cleaning spills. Dispose of used absorbent in the trash. Designate a key employee on each shift to monitor cleanup and restock the kits.</p> 	<p>Absorbent materials can serve as an effective agent to absorb grease and oil.</p>	<p>This will reduce the amount of material going to grease traps and interceptors, which will require less frequent cleaning, reducing maintenance costs.</p>
<p>Routinely clean kitchen exhaust system filters/hoods. Dispose of waste from hoods and filters by emptying it into a drain connected to a grease interceptor if you have one, or have the hoods professionally maintained.</p> 	<p>If grease and oil escape through the kitchen exhaust system, it can accumulate on the roof of the establishment and eventually enter the storm drain system when it rains.</p>	<p>The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams. In addition, it is a violation of water quality regulations, which might result in legal penalties or fines.</p>



Managing Food Materials

According to the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Agriculture (USDA), more than one quarter of all food produced in America every year goes to waste and that \$31 billion in resources goes into the nation's landfills and sewer systems. This fact sheet is provided to encourage businesses such as food service providers, processors, distributors, and merchandisers to eliminate waste and recover/recycle food materials.

Food waste can produce many environmental impacts. For example, food materials discharged to a wastewater treatment plant will dramatically increase the cost of wastewater treatment, and if released into storm drains, will significantly impact a creek or river's ability to sustain aquatic life forms. Also, food materials discarded into the solid waste stream contribute to odor and the creation of greenhouse gases at disposal facilities. EPA and USDA estimate that diverting food residuals from landfills would improve air quality as much as taking 1,000,000 cars off American roads. Finally, food residuals in landfills serve as the catalyst for generation of leachate - the toxic soup that often drains from landfill into our drinking water aquifers.

Examples of what are considered food "residuals" include: preparation wastes, uneaten portions, grease, batter waste, dairy products, beverages containing sugar, and dressings. These food materials are excellent candidates for reduction, recovery, and reuse. Reducing materials at their source, coupled with recovery, reuse, and recycling prevents pollution and reduces, and in some cases eliminates, treatment and disposal cost. A successful waste reduction program can result in cost savings and possible generation of revenues. These activities also contribute to a positive public image for the company, benefits to the community, and protection of the environment.

Reduction at the Start: Ordering and Inventory Controls

Perhaps the most effective method for reducing waste is to prevent it in the first place. Proper control of raw goods, final products, and the waste streams associated with food preparation is an important source reduction technique. Improved ordering and inventory control significantly affect three major sources of waste resulting from improper inventory control: excess, out-of-date, and obsolete raw goods. Below are options for reduction at the start:

- Order bulk supplies.
- Terminate useless packaging from the vendor.
- Refuse samples that will become waste.
- Work with suppliers to return shipping materials and packaging.
- Purchase reusable items.
- Purchase only the amount of raw goods needed for a set period of time. This practice will help eliminate out-of-date and excess goods and products.
- Develop a review and approval procedure for all raw goods and products purchased. The primary purchaser can regulate the quantity of materials purchased by other personnel to reduce excess and out-of-date inventory.
- Clearly label all materials. Labels can indicate contents, storage/handling, and expiration dates.
- Rotate perishable stocks at every delivery to minimize waste from spoilage, i.e., first-in, first-out.
- Consider offering half or smaller portions as an option, to reduce the amount of uneaten food.
- Develop an hourly or daily production chart to minimize over-prepping and unnecessary waste.
- Store leftover hot foods from different stations in separate containers rather than consolidating them to minimize the chance of spoilage.

Donation of Food Material

Currently do you have excess edible food? Think of how that food could be used to help someone in need. In 1998, 36 million Americans lived in households that suffer from hunger or food insecurity. Food donation programs such as the Orange County Food Bank make donating simple. They can be contacted at (714) 897-6670. By donating food it helps achieve a winning menu of opportunity, halting a program where your staff can feel proud of being part of helping a neighbor in need, reduce food waste cost (recycling), and being good community partners.

Segregate Food Wastes for Beneficial Uses

To increase their recyclable potential, food materials should be clean and free of trash such as paper, glass, and plastic. Also, depending upon the requirements of recyclers, solid food wastes should be separated from liquid food wastes to enhance their recyclability.

Rendering

Free grease is grease that has not been mixed with water. It is largely generated from pots, pans, grills, and deep fat fryers and comes from butter, lard, vegetable fats and oils, meats, nuts, and cereals. If kept out of the drains and handled separately, free grease may be rendered. Rendering facilities may purchase free grease and provide storage and collection. The market price depends upon factors such as volume, quality, and hauling distances. See fact sheets for Restaurant Oil and Grease Rendering and Best Management Practices for Fats, Oils, and Grease for further detail about management of grease.

Composting Food Wastes

"A rind is a terrible thing to waste!" Composting is an excellent way to turn a costly disposal problem into a source of soil nutrient and potential income, reduce air and water pollution, and save landfill space. The use of compost in gardening and agriculture reduces soil runoff and reduces the need for using chemical fertilizers, which protects California's waterways.

Businesses interested in diverting waste to composting could open their own compost facility or investigate the possibility of using local government or private compost facilities already in operation.

FACT SHEET



Prohibitions Relating to Discharge of Fats, Oils, and Grease (FOG)

The following prohibitions apply to all Food Service Establishments:

Prohibitions	Reason
<p>Use of food grinders. Installation of food grinders in the plumbing system of new constructions of Food Service Establishments is prohibited. Furthermore, all food grinders shall be removed from all existing Food Service Establishments within 180 days after notification, except when expressly allowed by the FOG Control Program Manager.</p>	<p>Eliminating food grinders (garbage disposal) will reduce the volume of solids that enter a grease interceptor or the sewer. Food wastes that accumulate in the grease interceptor occupy space used to separate and remove grease, resulting in an increased cleaning frequency requirement, waste hauling costs, and potential blockages.</p>
<p>Use of additives. Introduction of any additives into a Food Service Establishment's wastewater system for the purpose of emulsifying or biologically/chemically treating FOG for grease remediation or as a supplement to interceptor maintenance, unless a specific written authorization from the FOG Control Program Manager is obtained.</p>	<p>Emulsifiers hinder FOG separation by dispersing FOG in the wastewater, which directly conflicts with the grease interceptor's role in separating and removing grease. Additives may also cause the interceptor to discharge its contents to the sewer.</p>
<p>Disposal of waste cooking oil into drainage pipes. All waste cooking oils shall be collected and stored properly in receptacles, such as barrels or drums, for recycling or other acceptable methods of disposal.</p>	<p>Disposal of waste cooking oil to the sewer will cause blockages. Recyclers in Orange County may recycle waste cooking oil. This is an opportunity for cost recovery.</p>
<p>Discharge of wastewater from dishwashers to any grease trap or grease interceptor.</p>	<p>Dishwashers that utilize temperatures in excess of 140°F will dissolve grease, which then resolidifies in the sewer as the water cools. This does not necessarily apply to dishwashers that use water temperatures less than 140°F.</p>

Prohibitions	Reason
<p>Discharge of wastewater with temperatures in excess of 140°F to any grease control device, including grease traps and grease interceptors.</p>	<p>Temperatures in excess of 140°F will dissolve grease, which then resolidifies in the sanitary sewer as the water cools.</p>
<p>Discharge of wastes from toilets, urinals, wash basins, and other fixtures containing fecal materials to sewer lines intended for grease interceptor service, or vice versa.</p>	<p>Grease interceptors are intended to separate and remove FOG and should not contain other wastes that will interfere with its operations and maintenance.</p>
<p>Discharge of any waste including FOG and solid materials removed from the grease control device to the sewer system. Grease removed from grease interceptors shall be wastehailed periodically as part of the operation and maintenance requirements for grease interceptors.</p>	<p>This defeats the purpose of the interceptor. Accumulated grease, solids, and wastewater removed from interceptors must be properly disposed offsite periodically as part of the operation and maintenance requirements.</p>
<p>Operation of grease interceptors with FOG and solids accumulation exceeding 25% of the total design hydraulic depth of the grease interceptor (25% Rule).</p>	<p>This is to ensure that the minimum hydraulic retention time and required hydraulic volume are maintained to effectively intercept and retain FOG discharged to the sewer system.</p>



Restaurant Oil and Grease Rendering

Improperly managed oil and grease from Food Service Establishments (FSEs) such as restaurants has become a significant problem for wastewater collection and treatment systems. Fats, oils, and grease (FOG) coat, congeal, and accumulate in pipes, pumps, and equipment, leading to the costly and hazardous flow of waste grease into drain lines, sewer lines, lift stations, drain fields, and Publicly Owned Treatment Works (POTWs). Improper disposal can result in high biological oxygen demand (BOD) and chemical oxygen demand (COD) levels, increased operating costs, and clogged collection systems. A large percentage of the reported sewer system overflow in Orange County is caused by FOG blockage of the sewers.

Different Types of Oils and Grease

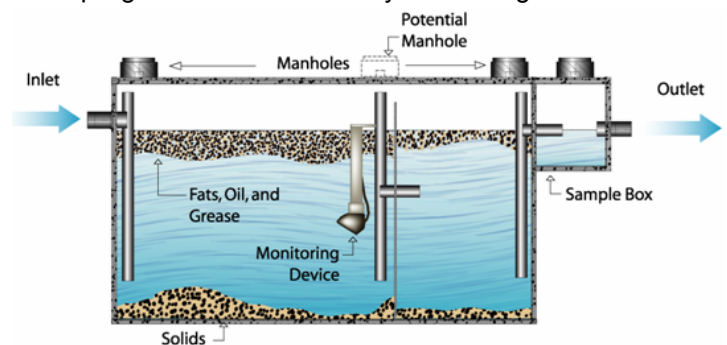
Recyclable grease is that used for or generated by cooking and has not been mixed with water. It is generated from pots, pans, grills, and deep fat fryers and comes from butter, lard, vegetable fat and oils, meats, nuts, and cereals. Recyclable grease should be kept out of the drains and handled separately. Rendering facilities may purchase recyclable grease and meat wastes and provide storage and collection. The market price depends upon factors such as volume, quality, and hauling distances. The rendering services will process recyclable grease by sampling it for pesticides and other chemicals and filtering and volatilizing impurities before reselling it, where prices may range from one to three cents per pound. If the volume of the wastes generated from one FSE

(restaurant or cafeteria) is too small for the rendering facility, businesses should explore the feasibility of setting up a cooperative collection among similar businesses.

Restaurant kitchen wastewater contains oil and grease that is collected in a grease interceptor. Because fats coat, congeal, and accumulate on pipes and pumps and sometimes obstruct sewer lines, food service establishments are required by most local governments to install and maintain grease interceptors. Specific information about grease interceptor maintenance is presented in the OCSD's Fact Sheet for Grease Interceptor. Some rendering services and local septage haulers will service or pump out these grease interceptors for a fee, and some services may reduce the pumping fee if the FSE is a recyclable grease customer.

Where Does Grease Go When It Leaves a Restaurant?

A grease interceptor is designed to prevent grease, oil, solids, and other debris from entering the wastestream, where it becomes a problem by clogging sewers and disrupting the water flow in the system. The grease



interceptor captures those wastes and contains them until a waste hauler or pumper service can properly dispose them.

A grease interceptor should be checked and maintained to ensure that it is working properly. Backups, odors, and drainage problems are signs that the grease interceptor is not functioning as it should. See OCSD's Fact Sheet for Grease Interceptor for specific tips on proper maintenance of grease interceptors.

Grease Recycling

While pretreating wastewater through the use of grease interceptors, skimmers, separators, and process flow treatment systems such as carbon filtration or coagulation units can greatly reduce the problem, source reduction of oil and grease must be the first course of action. Through dry cleanup and the development of an efficient collection system and rendering program, wastewater problems can be avoided. Rendering companies or "grease recyclers" will accept oil, grease, and other animal byproducts, including deep fry fat and bones, thereby turning a nuisance waste material into a beneficial product such as animal feed.

How is Waste Oil and Grease Recycled?

Waste oil and grease is tested for pesticides and other contaminants. Material is placed in a settling tank to remove solids, heated in a vacuum to volatilize impurities and is then sold to companies for use as animal feed additives, in soap production, oils, cosmetic and skin care products, and in composting.

Benefits of Rendering

- **Compliance** - Many communities have sewer use ordinances that severely limit the discharge of FOG in wastewater. New state policies are being enacted that will require more communities to develop sewer use ordinances and wastewater discharge limitations. Penalties may be incurred when higher concentrations are found. Rendering prevents grease from reaching the sewer system and thereby helps FSEs maintain compliance.

- **Cost Avoidance** - The charge for pumping out a grease interceptor is considerably more than the service fee charged by a renderer. Furthermore, with dry cleanup and other source reduction techniques, many FSEs are reducing their water consumption and sewer use and are saving money. Rendering also helps FSEs avoid discharge penalty charges.
- **Economic Incentives** - Renderers' service fees are low and often provided at no charge. In some cases, rendering companies are willing to pay for oil and grease from FSEs.
- **Environmental Savings** - Natural resources and energy are conserved through source reduction and recycling. FOG recycling keeps these materials from clogging municipal sewer lines, as well as using valuable landfill space and diverts it to a useful purpose.

Questions to Ask a Renderer

When looking for an oil and grease renderer, it is important to ask the right questions, which may include:

1. Do you provide collection containers?
2. Do you provide transportation?
3. Can I expect revenue for my material? If not, what is your service fee?
4. What are your specifications? What constitutes contamination?
5. If there is a problem, who should I contact?

Remember that FOG is a commodity and should be treated as a valuable resource that can and should be recycled whenever possible.

Where to Find Renderers

Contact the California Integrated Waste Management Board at (916-341-6000) for a list of grease renderers or visit their website: www.ciwmb.ca.gov.