CITY OF CYPRESS
AGENDA REPORT

Item # 5

TO: Peter Grant, City Manager
FROM: Douglas A. Dancs, P.E., Director of Public Works/City Engineer
MEETING OF: September 8, 2014
SUBJECT: Certification of the Sewer System Management Plan (SSMP) Update

RECOMMENDATION

It is recommended that the City Council:

1) Certify the Sewer System Management Plan Update, as required per Section D.14 of the State Water Resources Control Board Order No. 2006-0003; and

2) Authorize the Director of Public Works/City Engineer to submit the required certification form to the State Water Resources Control Board to maintain compliance with the Order.

BACKGROUND

The City of Cypress operates and maintains the local sewer collection system, which then transmits the wastewater to the Orange County Sanitation District (OCSD) for treatment. Whenever a pipe is blocked, or there is insufficient capacity, a spill or overflow can result. These spills enter streets via the curb and gutter and, eventually, make their way to a water body such as a beach, stream, or lake. Alternatively, the sewage can back up into a residence or business.

In May 2006, the State Water Resources Control Board (SWRCB) issued Order No. 2006-0003, Statewide General Waste Discharge Requirements (WDR), for all Sewage Collection Agencies in the State, which supersedes the previous Waste Discharge Order No. R8-2002-0014 issued by the Santa Ana Regional Water Quality Control Board in 2002. This Order places requirements on all wastewater agencies in an attempt to stem the rising trend of beach closures and impacts of ocean water quality that sewage spills and leaks can cause, and referred to as Sanitary Sewer System Overflows (SSO). If these discharges of sewage from any sewage spill or SSO are not fully contained and cleaned-up, and there is a discharge of sewage to surface waters of the State, or the SSO causes a nuisance, it is a violation of this Order, Sections 13260 and 13376 of the California Water Code, and Section 301 of the Clean Water Act. SWRCB can impose penalties for failure to follow the requirements of this Order.

DISCUSSION

The Order requires each enrollee to develop and implement a Sewer System Management Plan (SSMP). The SSMP is a written plan designed to minimize SSOs through proper design, construction, maintenance, operation, and management of sewage collection systems. The SSMP requires that enrollees develop and implement a SSO emergency response plan and a preventive maintenance program.

The Order contains a provision that requires permittees to update and recertify their SSMP every five (5) years. Section D.14 of the Order requires approval of the update by

the Enrollees' governing board. The City adopted its SSMP on January 26, 2009. A copy of the Order is included in the plan. Consistent with this requirement, the City's SSMP has been updated to reflect changes incorporated into management of the sewer system. The updated SSMP includes minor modifications such as:

- Element 4 – Operation and Maintenance Program – Updating of sewer capital improvement program expenditures to reflect current spending levels.
- Element 7 – Fats, Oils, and Grease (FOG) Control Program – Updates include reference to inspections performed by contract inspector, FOG permit exemptions, update of FOG inspection procedure, FOG public outreach process, and grease control device installation update.
- Element 8 – System Evaluation and Capacity Assurance – Reference to sewer rate adjustment that occurred in July 2009.
- Element 9 – Monitoring, Measurement and Program Modifications – Update to uses of the City's database system.
- Element 10 – SSMP Program Audits – Reference to SSMP audits performed pursuant to the WDR.
- Element 11 – Communication Program – Updated the scope of outreach efforts to residents and businesses.

A copy of the SSMP and Appendices is available for review by the public at the City Clerk's office.

FISCAL IMPACT

At this time, there is adequate funding to maintain the sanitary sewer system. Approximately $15 million worth of sanitary sewer repairs/upgrades were completed with $10.3 million as a result of cost savings due to the economy. There are approximately $28 million in improvements remaining and those will be included as part of the City's annual capital improvement program budget. An adequate level of funding has to be maintained to cover capital and operational expenses. Eventually the City's entire sanitary sewer system will have to undergo videotaping to measure the condition of the system. Upon completion of this, an updated Sewer System Master Plan will be prepared which will identify any deficiencies and estimated repair costs.

LEGAL REVIEW

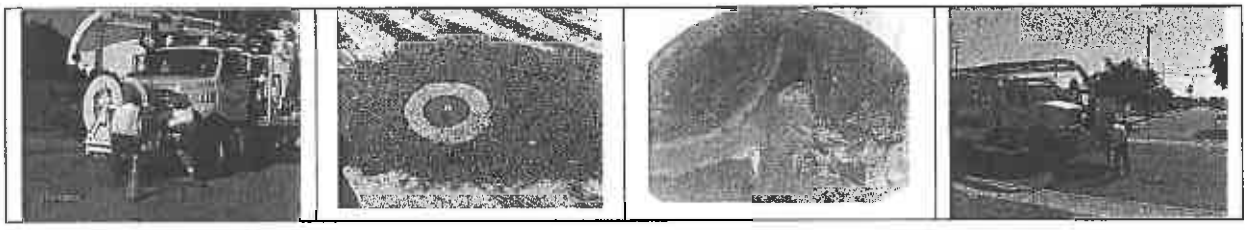
Legal review is not required for this item.

By: Kamran Dadbeh	
Kamran Dadbeh Assistant City Engineer	Peter Grant City Manager

GV:nv

Attachment: Sewer System Management Plan Update

City of Cypress
Sanitary Sewer Management Plan



2014 UPDATE

Department of
PUBLIC WORKS

[redacted], Director of Public Works/City Engineer

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SEWER SYSTEM MANAGEMENT PLAN (SSMP)

SSMP Introductory Overview

Introduction

State Water Resources Control Board Order No. 2006-0003 requires agencies to develop and implement a written Sewer System Management Plan (SSMP) and make it available to the State and/or Regional Water Board upon request.

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 in an effort to help reduce and prevent sewer spill overflows (SSOs), as well as mitigate any SSOs that do occur.

Document Organization

The City of Cypress, Public Works Department, developed the SSMP in compliance with the requirements of the State Water Resources Control Board, pursuant to Section 13267 of the California Water Code. The SSMP was approved by the City Council in 2009. A copy of the SSMP is on file with the City of Cypress, Public Works Department, and is publicly available upon request.

The SSMP includes 11 elements as listed below. Each of these elements form a section of this document.

Element 1: Goal

Element 2: Organization

Element 3: Legal Authority

Element 4: Operation and Maintenance Program

Element 5: Design and Performance Provisions

Element 6: Overflow Emergency Response Plan

Element 7: FOG Control Program

Element 8: System Evaluation and Capacity Assurance Plan

Element 9: Monitoring, Measurement, and Program Modifications

Element 10: SSMP Program Audits

Element 11: Communication Program

Service Area and Collection System

The City of Cypress is located in the northwestern portion of Orange County, California, adjacent to Los Angeles County. The City encompasses 6.7 square miles of residential, commercial, and industrial land. Neighboring cities include Cerritos and La Palma to the north; Buena Park, Anaheim, and Stanton to the east; Garden Grove and Los Alamitos to the south; and Long Beach, Hawaiian Gardens, and Lakewood to the west.

Cypress is centralized between a number of Southern California highways, providing access into the City from all directions. The San Diego Freeway (I-405) and Garden Grove Freeway (SR-22) are located to the south. The San Gabriel Freeway (I-605) is located to the west. The Artesia Freeway (SR-91) is located to the north. The major roads within the City include Lincoln Avenue, Katella Avenue, and Valley View Street.

The City is very flat, with the highest ground elevation at approximately 60 feet above mean sea level in the northeast corner of Cypress College. The lowest ground elevation is approximately 25 feet above mean sea level in the southwest corner of the City. In January 2008, the California State Department of Finance estimated the total number of occupied housing units in the City at 16,223. The total population was at 49,541 persons. Therefore, the estimated average number of persons per dwelling unit was 3.05.

The City's existing wastewater collection system is made up of a network of gravity sewers and sewer force mains. The gravity system consists of approximately 101 miles of pipe and 2,350 manholes and cleanouts, primarily constructed during the 1950's, 1960's, and 1970's. The system also includes approximately 14,213 service laterals. The gravity sewers are constructed of vitrified clay pipe, with sizes ranging from 6-inch to 21-inch in diameter. Approximately 85 percent of the existing sewer pipes are 8-inch in diameter. Each drainage area in the City terminates at an Orange County Sanitation District facility (OCSD). Drainage Area 1, located in the northwestern portion of the City, covers approximately 788 acres of residential and commercial land uses. The sewers in Drainage Area 1 are tributary to OCSD's Los Alamitos Sub-Trunk in Denni Street, Orange Avenue, and Bloomfield Street. Drainage Area 2, located in the central portion of the City, consists of approximately 2,050 acres of residential and commercial land uses. The sewers in Drainage Area 2 are tributary to OCSD's Westside Relief Interceptor in Moody Street, Orange Avenue, and Denni Street. Drainage Area 3, located in the eastern portion of the City, covers approximately 1,427 acres of residential and commercial land uses. The sewers in Drainage 3 are tributary to OCSD's Miller-Holder Trunk or Orange-Western Sub-Trunk. This system also includes 19 siphons which were typically constructed at large utility crossings.

The four OCSD facilities located within the City of Cypress are as follows; Los Alamitos Sub-Trunk, Westside Relief Interceptor, Miller-Holder Trunk, and Orange-Western Sub-Trunk. The sewage generated by the City of Cypress is carried out of the City by one of the aforementioned OCSD trunk sewers. The flow then travels south and west through OCSD's system to Treatment Plant No. 1, located in the City of Fountain Valley, or Treatment Plant No. 2, located in the City of Huntington Beach.

The City's Orangewood Sewage Pump Station was constructed in 1969 as a wet well/dry facility. It was converted to a submersible type pump in 1990. At that time, the original wet well was rehabilitated and remodeled, including a polyurethane lining. Sewage is pumped east in Orangewood Avenue via an 8-inch cement pipe force main. The flow is discharged to a manhole located in Orangewood Avenue at Luzon Street. It is then conveyed further east by gravity to OCSD's Miller-Holder Trunk.

Element 1: 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 in an effort to help reduce and prevent sewer spill overflows (SSOs), as well as mitigate any SSOs that do occur.

The Public Works Department, Maintenance Division, uses the SSMP in conjunction with its Preventive Maintenance Program to properly maintain and operate the City of Cypress sewer system. The Public Works Department has developed this SSMP to achieve the following collection system management goals and objectives listed below:

- Proper maintenance, operations, and management of all parts of the City of Cypress wastewater collection system.
- Provision of adequate capacity in the collection system to convey peak flows.
- Minimize the frequency of SSOs.
- Mitigate the impact of SSOs.
- Ensure compliance with statewide general discharge requirements.

In addition, the Preventative Maintenance Program goals include:

- Increase Preventative Maintenance on the collection system to decrease SSOs.
    - Clean all sewer main lines of sewer districts within the identified required maintenance period.
    - Continue with monthly, quarterly, bi-annual, and annual preventative maintenance hydro-cleaning and power-rod cleaning of identified sewer main line target (problem) areas.
    - Conduct future CCTV condition assessments of sewer system and continuously identify deficiencies.
    - Refer main lines with repeat non-scheduled maintenance to Engineering Division for evaluation.
    - Conduct appropriate analysis/evaluation of SSOs utilizing historical maintenance and activity data and records and provide recommendations to reduce future risk.
- Identify collection system blockages due to fats, oils and grease (FOG) and develop strategies to decrease backups.
- Operate all pump stations at peak efficiency and perform preventative maintenance on equipment at all sanitary sewer pump stations.
- Maintain records of the sanitary sewer system and respond to inquiries.
- Assist with the development of a capital improvement program directed at maintaining the current sewer assets, improving system reliability, and providing adequate future capacity.

Element 2: Organization:

The sewer collection system is managed by the Public Works Department. The Department is managed by the Director of Public Works/City Engineer.

Maintenance and Operations:

Reporting to the Director is the Maintenance Superintendent who manages the overall maintenance of the system. Reporting to the Superintendent is a Maintenance Supervisor who is responsible for direct supervision of City Staff who maintain the system. A Maintenance Specialist reports to the Supervisor who overseas the cleaning program.

Engineering:

Reporting to the Director is the Assistant City Engineer who manages the Engineering Division. This Division is responsible for the permitting, planning, construction, and inspection of any City maintained distribution line or facility.

Also reporting to the Director is the Water Quality Manager who manages the water quality programs for the City, which includes the storm water and fats, oils, and grease (FOG) programs.

Title	Phone No.
Director of Public Works/City Engineer	(714) 229-6740
Assistant City Engineer	(714) 229-6756
Water Quality Manager	(714) 229-6752
Maintenance Superintendent	(714) 229-6763
Maintenance Supervisor	(714) 229-6766

The names of City Staff in each position are listed in the Department's Emergency Phone Book and are updated as needed. The chain of communication for reporting SSOs is performed in accordance with the City's Overflow Emergency Response Plan. The City's Overflow Emergency Response Plan outlines the City's SSO reporting procedures to the Regional Water Quality Control Board, the State Office of Emergency Services, the Orange County Health Department, the Orange County Fire Authority, and the Cypress Police Department.

The objective of the City's Overflow Emergency Response Plan is to protect public health and the environment. The procedure to achieve this is in the following order: **contact** the appropriate agencies**, contain** the spill, **control** the spill, **clean-up** the spill, and **calculate** the volume of the spill.

Once a spill is reported, the Maintenance Supervisor and his crew will go to the scene and contain the spill (at the catch basin and at the end of stream), clear any

identified blockage, and clean-up the site. Once clean-up has occurred, the Health Department, RWQCB, and the County are notified. Should the spill exceed 1,000 gallons, City staff will notify the Office of Emergency Services. An online report will then be completed within three days.

In the event of a sewage spill on private property, City staff will contain the sewage on site to prevent sewage from entering the public right-of-way or storm drain system. Contact with the owner or property manager is required to ensure they arrange for a private contractor to remediate the SSO. An Orange County Health Care Agency representative will be notified by the Maintenance Supervisor, if needed for assistance.

If the private property spill reaches City right-of-way (curb, gutter, street), the Maintenance Supervisor and a crew will contain the spill and ensure proper clean-up of the site. The Supervisor then notifies the County Health Care Agency and an online report will be completed. All spills will be photographed and documented.

Element 3: LEGAL AUTHORITY

Via sanitary use ordinances, service agreements, and other legally binding procedures, the City of Cypress possesses the necessary legal authority to enforce all the elements of this section. The City Municipal Code contains sections relative to Sewers and Sewage Disposal, Sewer Disposal and Sewer Service Charges, Sewerage Facilities, Water Quality, and Fats, Oils, and Grease Management. These Chapters are available at the City of Cypress Website at www.ci.cypress.ca.us and are referenced in the following sections. The FOG Ordinance is included as an attachment to this element.

a) Prevent illicit discharges into the sanitary sewer system, including satellite wastewater collection systems and laterals, stormwater, unauthorized debris, etc.

Illicit discharges are controlled specifically by the City's Water Quality Ordinance which regulates the types of discharges that are permitted to enter the municipal storm drain system. This includes any discharges that may result from a sanitary sewer overflow. In addition, the City's Fats, Oils, and Grease Ordinance contains provisions that specifically addresses the response requirements to sewer system overflows, public nuisances, abatement orders, and clean up costs reimbursement.

The following excerpt from the Cypress Municipal Code provides legal authority for this chapter:

> ***Sec. 13-22. Prohibition on illicit connections and prohibited discharges.***
> *(a) No person shall:*
> *(1) Construct, maintain, operate and/or utilize any illicit connection.*
> *(2) Cause, allow or facilitate any prohibited discharge.*
> *(3) Act, cause, permit or suffer any agent, employee, or independent contractor, to construct, maintain, operate or utilize any illicit connection, or cause, allow or facilitate any prohibited discharge.*
>
> ***Sec. 13-83. 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.*

b) Require proper design and construction of sewers and connections.

The City Municipal Code contains sections that apply to the design and construction of all sewer systems. This section promulgates design criteria, standards, and procedures to ensure implementation of the requirements of Water Quality and FOG Ordinances. The design and construction standards are explained in greater detail as required by this Order in Element 5 – Design and Performance Provisions. The City's Public Works Director/City Engineer is authorized to approve, modify, or update design standards for sewer facilities that are on file in the Department of Public Works – Engineering Division.

The following excerpt from the Cypress Municipal Code provides legal authority for this chapter:

> ***Sec. 22-10. Sewer design and construction standards.***
> *(a) The provisions of Chapter 25, "Subdivisions," and specifically sections 25-28 and 25-29 of the Code of the City of Cypress shall apply to the design and construction of all sewer systems within the City of Cypress. Such sections shall apply to the design and construction of sewer systems within the City irrespective of the fact that the design or construction of the sewer is or is not required as a result of a subdivision of real property.*
>
> *(b) Pursuant to article VIII of chapter 13 of this Code, the city, through its director of the department of public works, or his or her designee, shall promulgate design criteria, standards, and procedures to assure implementation of the requirements of such article, and to further promulgate design criteria, standards, and procedures so as to control infiltration and connections from inflow sources, including satellite systems, of the city's sanitary sewer system, and to require that sewers, sewer connections, and service laterals be designed and constructed so as to assure implementation of the requirements of such article, and to further promulgate design criteria, standards, and procedures for, and to inspect the construction of, all sewers, sewer connections, and service laterals to insure correct installation, testing, and inspection of all new and rehabilitated sewers, sewer connections, and service laterals so as to assure implementation of the requirements of such article.*

c) Ensure access for maintenance, inspection, and repairs to publicly owned portions of the lateral.

The City Municipal Code contains provisions that provide for maintenance, inspection, and repairs to publicly owned portions of the lateral. The City Municipal Code also specifies that all house laterals, industrial connection sewers, and appurtenances are the responsibility of the private property owner. In those situations where there is a public owned line that traverses into private property, the City has been granted access rights through necessary easements, pursuant to the City Municipal Code.

The following excerpt from the Cypress Municipal Code provides legal authority for this chapter:

> ***Sec. 25-34. Inspection of public improvements.***
>
> *All construction of improvements under this chapter shall be subject to inspection and testing by the director of public works, or his authorized representatives, to insure compliance with the standards and specifications specified and required by this chapter. All work and improvements must be found to conform to said standards and specifications as a condition of the city's acceptance of them and the release of any improvement securities held therefore. No construction shall commence or continue without first having arrangements made with the director of public works or his staff for inspection. The director of public works, and his authorized representatives, shall have the right to stop any work or refuse to inspect any work or reject any or all work and construction if it is found that the work is unauthorized, is unsafe in any way to the workmen or the public, is inferior in materials or workmanship, was performed without inspection, or does not meet or comply with the city standards, specifications, or city-approved construction plans. Reasonable access to the construction and work shall be provided at all times so that full knowledge of the progress, workmanship, and character of the materials used in the work can be gained.*

d) Limit the discharge of FOG (Fats, Oils, and Grease) and other debris that may cause blockages.

In order to limit the discharge of FOG into the sanitary sewer system, the City adopted a FOG Ordinance in December 2004. Included in the Ordinance, are definitions for FOG and Food Service Establishments, FOG Pretreatment Requirements, Discharge Prohibitions, and FOG Discharge Requirements for Food Service Establishments. Furthermore, discharges of a sanitary sewer nature are also prohibited by the City's Water Quality Ordinance. Element 7 of this SSMP has more detailed information related to the City's FOG program.

> *Attachment 2 at the back of this document is FOG Ordinance which provides the legal authority under the FOG Program.*

e) Enforce violations of its sewer ordinance.

Enforcement of sanitary sewer overflows is handled through the City's FOG Ordinance and the City's Water Quality Ordinance. Included in these Ordinances are provisions which provide for the issuance of administrative citations and cost recovery procedures to collect payment for resources utilized to contain and clean up areas affected by sanitary sewer overflows.

The following excerpts from the Cypress Municipal Code provide legal authority for this chapter:

Sec. 13-25. Enforcement.

(a) Administrative remedies.

(1) Notice of noncompliance. The authorized inspector may deliver to the owner or occupant of any private property, or to any person responsible for an illicit connection or prohibited discharge, a notice of noncompliance listing the steps necessary to correct the conditions on the property causing noncompliance with the provisions of this article, any approved construction or post-construction water quality management plan, or any permit issued pursuant to section 13-29 hereof.

a. The notice of noncompliance shall identify the provision(s) of this article, the applicable water quality management plan or permit which has been violated. The notice of noncompliance shall state that continued noncompliance may result in additional enforcement actions against the owner, occupant and/or person.

b. The notice of noncompliance shall state a compliance date that must be met by the owner, occupant and/or person; provided, however, that the compliance date may not exceed ninety (90) days unless the authorized inspector extends the compliance deadline an additional ninety (90) days where good cause exists for the extension.

(2) Administrative compliance orders.

a. The authorized inspector may issue an administrative compliance order. The administrative compliance order shall be delivered in accordance with section 13-25, paragraph (a)(5), of this article. The administrative compliance order may be issued to:

1. The owner or occupant of any private property requiring abatement of conditions on the property that cause or may cause a prohibited discharge or an illicit connection in violation of this article;

2. The owner of private property or a responsible party subject to the requirements of any water quality management plan to ensure implementation of an adherence to the terms, conditions and requirements of the plan;

3 A permittee subject to the requirements of any permit issued pursuant to section 13-29 hereof to ensure compliance with the terms, conditions and requirements of the permit;

4.Any person responsible for an illicit connection or prohibited discharge.

b. The administrative compliance order may include the following terms and requirements:

1. Specific steps and time schedules for compliance as reasonably necessary to prevent threatened or future unauthorized discharges, including but not limited to the threat of a prohibited discharge from any pond, pit, well, surface impoundment, holding or storage area;

2. Specific steps and time schedules for compliance as reasonably necessary to discontinue any illicit connection;

3. Specific requirements for containment, cleanup, removal, storage, installation of overhead covering, or proper disposal of any pollutant having the potential to contact stormwater runoff;

4. Any other terms or requirements reasonably calculated to prevent continued or threatened violations of this article, including, but not limited to requirements for compliance with best management practices guidance documents promulgated by any federal, State of California or regional agency;

5. Any other terms or requirements reasonably calculated to achieve full compliance with the terms, conditions and requirements of any water quality management plan, or permit issued pursuant hereto.

(3)Cease and desist orders.

a. The authorized inspector may issue a cease and desist order. A cease and desist order shall be delivered in accordance with section 13-25, paragraph (a)(5), of this article. A cease and desist order may direct the owner or occupant of any private property and/or other person responsible for a violation of this article to:

1. Immediately discontinue any illicit connection, or prohibited discharge to the stormwater drainage system;

2. Immediately contain or divert any flow of water off the property, where the flow is occurring in violation of any provision of this article;

3. Immediately discontinue any other violation of this article;

4. Clean up the area affected by the violation.

b. The authorized inspector may direct by cease and desist order that the owner of any private property, the responsible party subject to the terms and conditions of any water quality management plan, or any permittee under any permit issued pursuant to section 13-27 hereof.

1.Immediately cease any activity not in compliance with the terms, conditions and requirements of the applicable water

quality management plan or permit.

[2.Reserved.]

(4) Recovery of costs. The authorized inspector may deliver to the owner or occupant of any private property, any permittee or any responsible party, or any other person who becomes subject to a notice of noncompliance or administrative order, an invoice for costs. An invoice for costs shall be delivered in accordance with section 13-25, paragraph (a)(5), of this article. An invoice for costs shall be immediately due and payable to the city for the actual costs incurred by the city in issuing and enforcing any notice or order.

a. If any owner or occupant, permittee or responsible party, or any other person fails to either pay the invoice for costs or appeal successfully the invoice for costs in accordance with section 13-26 then the enforcing attorney may institute collection proceedings.

[b.Reserved.]

(5) Delivery of notice. Any notice of noncompliance, administrative compliance order, cease and desist order or invoice of costs to be delivered pursuant to the requirements of this article shall be subject to the following:

a. The notice shall state that the recipient has a right to appeal the matter as set forth in sections 13-26.

b. Delivery shall be deemed complete upon (a) personal service to the recipient; (b) deposit in the U.S. mail, postage prepaid for first class delivery; or (c) facsimile service with confirmation of receipt.

c. Where the recipient of notice is the owner of the property, the address for notice shall be the address from the most recently issued equalized assessment roll for the property or as otherwise appears in the current records of the city.

d. Where the owner or occupant of any private property cannot be located after the reasonable efforts of the authorized inspector, a notice of noncompliance or cease and desist order shall be deemed delivered after posting on the property for a period of ten (10) business days.

Sec. 13-105. 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 13-107.

(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.

Element 4: OPERATION AND MAINTENANCE PROGRAM

The Department of Public Works maintains accurate electronic records of our inventory of sewer assets, as well as all work performed on those assets. The Department utilizes a database program to maintain this information. QuickBase is a web-based program that is customized by our users to create a database collection program to meet our specific needs. Utilizing this program enables staff to retrieve or input data anytime or place through an internet connection and browser, thus allowing our staff instant accessibility to information in the field. Staff is also able to add interactive tables, timelines, charts, calendars, etc. to facilitate entering data into reports. QuickBase also allows us to set-up automatic notices or proactively send out e-mails directly to users keeping them informed or reminding them of upcoming tasks.

a) Sanitary Sewer System Map

The Maintenance Division maintains an up-to-date map of the sanitary sewer system showing all gravity line segments and manholes, pumping facilities, pressure pies and valves, and applicable stormwater conveyance facilities. All modifications are coordinated through the Engineering Division of the Public Works Department.

The Maintenance Division keeps current sewer and storm drain maps, showing the flow directions, in the sewer cleaning vehicles. Personnel are required to note any discrepancies or errors on field maps and immediately register any necessary changes.

As part of routine actions to ensure quality control, these mark-ups are submitted to the Engineering Division for verification and map updates. The master underground utilities map is modified, and updated underground utilities map book pages are distributed. Updates are transferred to the associated maps (Sewer Cleaning District Maps, etc.) which are then re-printed for distribution. A copy of the City's Sewer Map is attached herein as Attachment "3.1".

b) Routine Preventive Operation and Maintenance Activities

i) Routine Activities by Staff

Sewer maintenance staff maintains a daily cleaning log showing the type and amount of sewer maintenance that was performed that day, and then updates the data in QuickBase. Any sewer main lines found to be deficient by the Maintenance Division are referred to the Engineering Division for further evaluation. A copy of the Sanitary Sewer Cleaning and Maintenance Log Sheet is attached herein as Attachment "3.2".

In addition, staff routinely conducts appropriate analysis/evaluation of SSOs, utilizing historical maintenance activity data and provides recommendations to increase the efficiency of the sanitary sewer system.

For maintenance of the sewer lift station, staff performs daily visual checks of the pump station operation and logs the inspection. The City also performs testing on emergency systems at the sewer lift station every three months. Furthermore, the sewer lift station wet wells are vacuumed and cleaned and the discharge check valves are cleaned and tested on a bi-annual basis.

ii) Routine Activities by Contractor

As needed, the Public Works Department hires a contractor to conduct a Closed Circuit Television (CCTV) inspection of each sewer main line. Videos of these inspections are delivered in DVD format and reports are provided outlining all deficiencies for each segment of sewer line.

iii) Maintenance and Cleaning Schedule

The City of Cypress keeps an internet based database (QuickBase) showing the history of the sewer systems cleaning maintenance logs. QuickBase is customized by staff to create a database collection program to meet our specific needs. Utilizing this program enables staff to retrieve or input QuickBase data anytime or place through an internet connection and browser, thus allowing our staff instant accessibility to information in a field situation. Staff is also able to add interactive customized tables, timelines, charts, calendars, etc. to facilitate data entry into reports. QuickBase also allows us to set up automatic notices or proactively send out e-mails directly to users keeping them informed or reminding them of upcoming tasks.

The City of Cypress is divided into 31 districts, which contain a total of 108 miles of sewer main lines. These lines are cleaned on a two-year cycle beginning at the north end of the City (District 1) working towards the south end of the City (District 31). Each year, 54 miles of sewer main lines are completely cleaned using our sewer cleaning truck. The Public Works Department conducts monthly, quarterly, bi-annual and annual preventative maintenance, which includes hydro-cleaning and cleaning of identified sewer mainline targeted problem areas based on the severity and frequency of problems within the sewer reach.

iv) Preventive Maintenance Program

The City of Cypress also makes it a priority to clean sewer hot spots every three months. The hot spots cleanings average approximately 30,000 feet of main sewer lines every three months. After the quarterly cleanings, the Public Works Department evaluates the effectiveness of the cleanings and increases or decreases preventative maintenance on known problem hot spots, as necessary.

c) Rehabilitation and Replacement Plan

Condition Assessment and Inspection

In August 2008, AKM Consulting Engineers completed a Sewer Master Plan Update which updated the City's existing 2003 Sewer Master Plan and was based upon reviewing previous studies, as-built plans, CCTV inspections, and maintenance reports. This Sewer Master Plan identified and prioritized system deficiencies and developed short-term and long-term rehabilitation actions to address each deficiency for the entire City of Cypress sewer system. A copy of the Executive Summary section of the Sewer Master Plan Update is attached herein as Attachment "3.3".

The City inspected its entire sewer collection system via CCTV in a two-phase program. The first phase of inspections was completed in 2003, in conjunction with the City's Sewer Master Plan. The second phase of inspections was completed in 2007 to augment the City's 2008 Sewer Master Plan Update performed by AKM Consulting Engineers, a local expert in sewer and storm drain design. Overall, approximately 97.7 percent (522,955 feet of 535,274 total) of the sewer system has been inspected. The remaining 2.3 percent of the system included reaches that were not accessible to the camera and siphon segments that were not inspected due to the risk of losing valuable camera equipment.

The CCTV inspection was performed by contracted services. National Association of Sewer Service Companies (NASSCO), Pipeline Assessment and Certification Program (PACP) coding procedures formed the basis of the inspection work. This rating system is utilized in prioritizing annual mainline repair projects. The CCTV inspection identified any lines that need a follow-up inspection within the next five years. A map showing the CCTV Locations is attached herein as Attachment "3.4".

Prioritization of Rehabilitation

The purpose of CCTV inspections is to determine the condition of the City's existing gravity sewers, and formulate a rehabilitation plan for the defective sewers. The defects which will most likely cause sanitary sewer overflows and exfiltration will be given the highest ranking. 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. Six categories were utilized to determine the severity of the pipe defects: Severe, Major, Moderate, Minor, Operations and Maintenance, and No Deficiency. The initial priorities for improvements to the sewers are based on these factors.

The Sewer Master Plan currently categorizes necessary repairs into two main categories: "Hotspot and Capacity Deficiency" and "Condition Deficiency." In an effort to improve health and safety, and minimize FOG issues and possible overflows, the City has given highest priority to the repair of severely condition deficient sewers and hotspots with severe grease blockages, severe calcium

deposits, and very heavy root intrusion, because they present the greatest potential adverse impacts to the public.

Seven Year and Yearly Rehabilitation and Replacement Program

The Sewer Master Plan Update provides the framework for the Sewer Pipe Rehabilitation/Capacity Improvements Program and identifies long-term financial needs which have been incorporated into the Capital Improvement Program. The City has approved its Capital Improvement Program, FY2014-15 – FY2020-21, which includes fund allocation for the design and construction of sewer projects. The Capital Improvement Program currently allocates $9.1 million over the next seven years toward the repair and improvement of the City's sewer collection system. Each fiscal year, the City allocates an average of $1.3 million to its Sewer Pipe Rehabilitation/Capacity Improvements Program. Sewer use fees provide the primary funding source for the program, which gives projects priority based on the criteria as identified above. In July 2009, the City Council approved an adjustment to the City's sanitary sewer rate assessed to residences and businesses. The rate adjustment was approved for a 5-year period and revenue generated would fund the sanitary sewer system that has been identified as having deficiency or capacity issues.

d) Staff Training

The City of Cypress supports the Maintenance Division staff with their efforts to obtain California Water Environment Association (CWEA) certification for collection workers, Grades I through IV. Training of Maintenance Division staff includes:

- Water Discharge Requirements (WDR) Awareness Training using Operations and Maintenance of Wastewater Collection Systems, Volume I & II on DVDs.
- Operations and Maintenance of Wastewater Collection Systems; field study training books.
- Sanitary Sewer Overflow (SSO) Response Training and containment and clean up field training three times a year.
- Staff is required to attend seminars offered through the California Water Environment Association (CWEA) at least twice a year.

e) Equipment Inventory

The City of Cypress provides and maintains vehicles and equipment used to inspect and/or clean City-owned sewer systems. The City-owned vehicle and equipment list includes, but is not limited to the following:

- One ½ ton Ford Ranger Truck with all containment equipment onboard

- One ¾ ton Chevy Truck with all containment equipment onboard
- One Camel Combo Vacuum/Hydro Jetter 10 yard unit
- One 2.5 yard vacuum trailer
- Critical Replacement Parts on Hand
- Replacement Hydro Jetter cleaning hose and nozzles
- Replacement sewer lift station pumps

Element 5: DESIGN AND PERFORMANCE PROVISIONS

a) Standards for Installation, Rehabilitation, and Repair.

The City currently uses the City of Cypress Design Standards for Sewer Facilities for design of its sewer facilities. The Public Works Director/City Engineer is authorized to approve, modify, or update design standards for sewer facilities that are on file in the Department of Public Works – Engineering Division. A summary of the City's Sewer System Criteria is as follows:

Collection System

Minimum Pipe Size	8-inch
Minimum Velocity	2.0 ft/sec at average flow 3.0 ft/sec at peak flow
Pipe Depth to Diameter Ratio	0.50 for pipes 15-inches and smaller at peak dry weather flow 0.64 for pipes 18-nches and larger at peak dry weather flow

Pump Station

Pumps	Minimum 2 each sized at peak flow Minimum solids handling capacity 3"
Wet Wells	Sized to limit pump cycling to less than 4 to 6 times/hr Provide 2-hours of storage at peak flow Equipment to be maintained, accessible without entering structure Odor control, as necessary
Ventilation	12-air changes/hour (min) in dry well, per NFPA 820 30-air changes/hour (min) in wet well if not operated continuously 12-air changes/hour (min) in wet well if operated continuously
Controls	Redundant system Float operated back-up controls
Emergency Power	Stationary source with automatic transfer switch
Telemetry	Dialer system at all pump stations to alert personnel in the event of a station failure
Force Mains	Minimum velocity of 3.0 ft/sec Minimum size 4-inches Air/Vac installed in vaults

For construction, the City uses the American Public Works Association Standard Specifications and Drawings for Public Works Construction ("The Greenbook") 2012 Edition and the City of Cypress Standard Plans.

b) Standards for Inspection and Testing of New, Rehabilitated, and Repaired Facilities.

The City uses the American Public Works Association Standard Specifications and Drawings for Public Works Construction ("The Greenbook") 2012 Edition. All new, rehabilitated and repaired sewer assets require inspection involving pressure testing, mandrelling, water exfiltration

and/or post construction closed circuit television inspection, overseen by a City construction inspector prior to acceptance of work. Sewer pump stations require startup testing and operation of all pumps, motors, VFDs, telemetry, valves, floats, gauges, and all other appurtenant equipment.

Element 6: Overflow Emergency Response Plan

The City of Cypress has developed an Overflow Emergency Response Plan which is attached herein as Attachment "1".

Attachment 1

CITY OF CYPRESS
OVERFLOW EMERGENCY RESPONSE PLAN

The objective of this Overflow Emergency Response Plan is to protect public health and the environment. The procedure to achieve this is in the following order: ***contain*** the spill, ***contact*** the appropriate agencies, ***control*** the spill, ***clean up*** the spill and ***calculate*** the volume of the spill.

CONTAIN

Take immediate action to contain the spill and prevent sewage from entering storm drains, drainage channels, and surface water bodies.

Protect containment with traffic and crowd control. Use cones, barricades, arrow boards, vehicles or other equipment, as necessary.

Overflows can be contained, using absorbent, sand or dirt berms. Rubber matting can be used to seal catch basin entrances. Vehicles are to be stocked with containment materials and tools.

All overflows that have a possibility of breaking containment will require the vacuum trailer to monitor the spill.

A pump bypass procedure may be used to return sewage to the sanitary sewer. If additional equipment is needed, contractors may be utilized.

When a sewer overflow occurs on private property, the sewage should be contained on site before it enters the public right of way, if possible. Once an overflow from a private spill reaches the City right of way, the City will contain the spill.

CONTACT

All sewer spill overflows shall be reported to the Orange County Health Care Agency. All sewer spill overflows that result in a discharge to a storm drain, drainage channel, and surface water body shall immediately be reported to the Regional Board as soon as staff is aware of the discharge, by telephone, voice mail, or FAX.

ORANGE COUNTY HEALTH CARE AGENCY
Telephone ***(714) 433-6140 / (714) 433-6000***

CONTROL ONE (714) 628-7008 *After hours*
Fax Number ***(714) 972-0749***

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
Telephone ***(951) 782-4130*** *(24/7-voice mail) Fax Number* ***(951)781-6288***

The City of Cypress will report all SSOs using the attached Sanitary Sewer Overflow Report Form, within 5 days of the immediate notification.

The City of Cypress will submit monthly reports of all SSOs, including all pertinent information for each SSO.

The City of Cypress shall report all SSOs greater than 1,000 gallons to the Office of Emergency Services (OES).

OFFICE OF EMERGENCY SERVICES
Telephone ***(800) 852-7550***
Fax ***(916) 262-1677***

CONTROL

After locating overflow manhole, locate the first downstream manhole that is dry and proceed to relieve the blockage.
Relieve the blockage using the Camel Combination jetting / vacuum unit # 142. When the blockage is cleared, monitor the flow to ensure the sewer system is at its normal flow rate.
If further assistance or equipment is needed, we will activate our joint cities agreement with the City of Buena Park sewer crew for assistance as needed in sewer related emergencies. Contractors can be utilized if the blockage cannot be relieved.

In the case of a sewage spill on private property, City staff will contain the sewage on site, to prevent sewage from entering the public right of way or Storm Drain System. Contact with the owner or property manager is required to ensure they arrange for a private contractor to relieve the SSO. An *Orange County Health Care Agency* representative will be notified for assistance.

CLEAN UP

All liquids and solids, including wash water, in the containment area will be returned to the sanitary sewer. After evaluating the site, sewage contaminated areas will be disinfected, using a 50/50 water and bleach mixture, taking into account all environmental concerns. All wash water will be flushed to a containment area.

All contaminated material removed by City crews from the containment area will be transported to the Corporation Yard for proper disposal. Private contractors are required to dispose of contaminated material at a permitted facility.

CALCULATE

To estimate the spill volume, City staff will use the *Volume Tabulation Method*: (vent hole estimate; field observation; volume of spill path) Volume Calculations.

CITY OF CYPRESS
EMERGENCY CONTACT LIST

The names and contact information of personnel in each position are listed in the City of Cypress Public Works Department Emergency Phone Book and are updated as needed.

EXTERNAL AGENCIES

REGIONAL WATER QUALITY CONTROL BOARD (SANTA ANA)
(951) 782-4130

ORANGE COUNTY HEALTH CARE AGENCY
(714) 433-6140 / (714) 433-6000

OFFICE OF EMERGENCY SERVICES
(800) 852-7550

ORANGE COUNTY FLOOD CONTROL
(714) 567-6300

ORANGE COUNTY SANITATION DISTRICT
(714) 962-2411

CONTROL ONE
(714) 628-7008

CITY OF BUENA PARK
(714) 562-3707 Duty Pager (714) 666-6935

CITY OF CYPRESS

SANITARY SEWER OVERFLOW REPORT

Time SSO is first reported to responding agency		
Reported by	☐ Cypress Police Dept. ☐ Other (List)	
Reporting sewer agency		
Date & time reported to RWQCB staff		A.m. P.m.
Phone number		
Responsible party		
Estimated overflow start date / time		A.m. P.m.
Estimated overflow stop date / time		A.m. P.m.
Did any sewage reach storm drain?	☐ Yes ☐ No	
Did SSO reach surface waters other than a storm drain?	☐ Yes ☐ No	
Containment Info		
Wash water disposal method		
Estimated overflow rate		
SSO volume lost		
How was volume tabulated?		
Photo documentation	☐ Yes (attached) ☐ No	
Recovered SSO volume		
Recovered wash water & sewage-contaminated water volume		
Lost wash water & sewage-contaminated water volume		
Location of overflow: Street		
Location of overflow: City	Cypress	
Location of overflow: Zip	90630	
Location of overflow: County	Orange	
SSO Structure I.D.		
Number of overflows w/in 1000' of this location		
Dates of overflows w/in 1000' of this location		
Location of potential blockage or problem point		

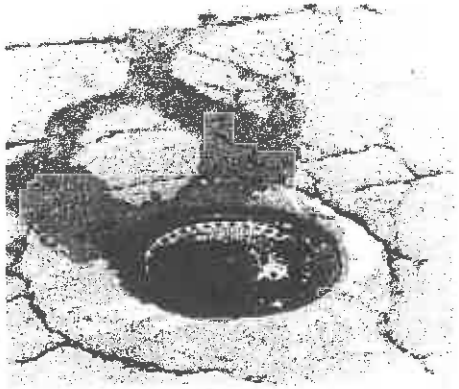
Description of component from which spill occurred	
Likely cause of SSO	
Overflow cause - detailed description	
Measurable precipitation during 72-hour prior to overflow?	
Steps taken or planned to reduce, eliminate, and prevent reoccurrence of SSO and schedule of major milestones	
Where the SSO entered the storm drain inlet	
Steps taken or planned to mitigate the impact(s) of the SSO and schedule of major milestones	
Any additional correspondence and follow-up reports, as necessary, to supplement the SSO report form and provide detailed info	☐ Yes (attached) ☐ No
Name or description of initial receiving water	
Name or description of secondary receiving water	
If the SSO did not reach surface waters, describe the final destination of sewage	
Were the local health services agency notified?	☐ Yes ☐ No
If the SSO was >1,000 gallons, was OES notified?	☐ Yes ☐ No
Were signs posted to warn of contamination?	☐ Yes ☐ No
Location of posting	
How many days were the warning signs posted?	
Were samples obtained of contaminated water (attach results)?	☐ Yes ☐ No
Remarks	

City of San Diego
Metropolitan Wastewater Department

Reference Sheet for E...ting Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

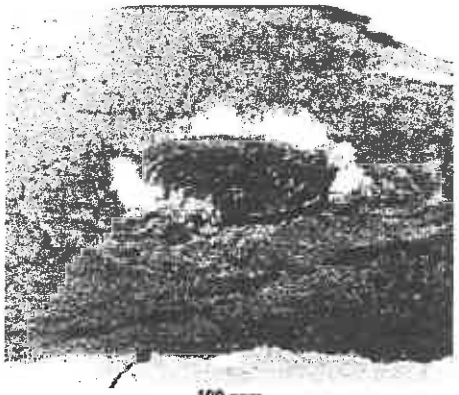
Wastewater Collection Division
(619) 654-4160



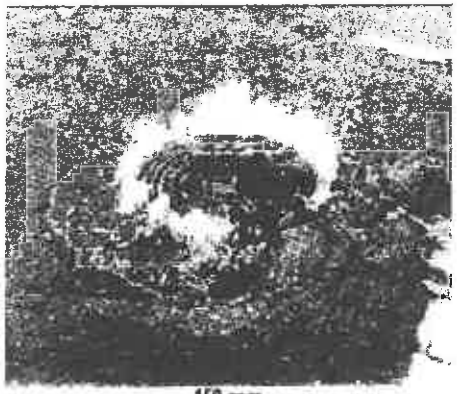
5 gpm

25 gpm

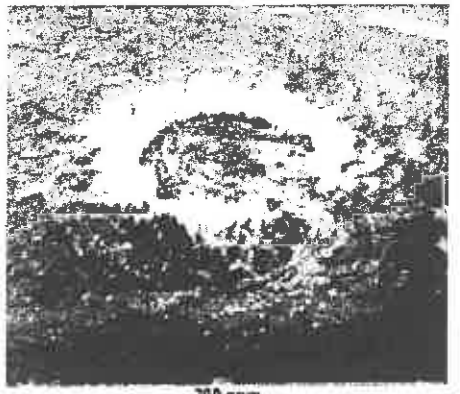
50 gpm



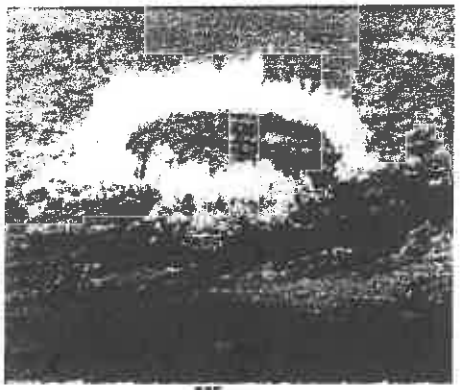
100 gpm



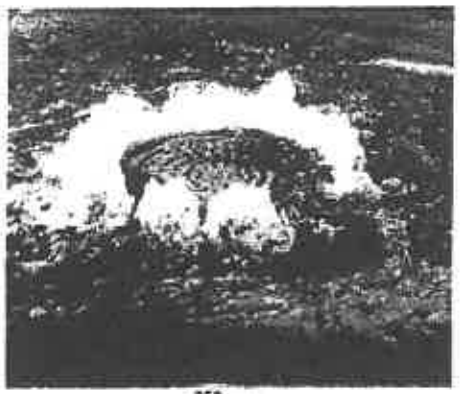
150 gpm



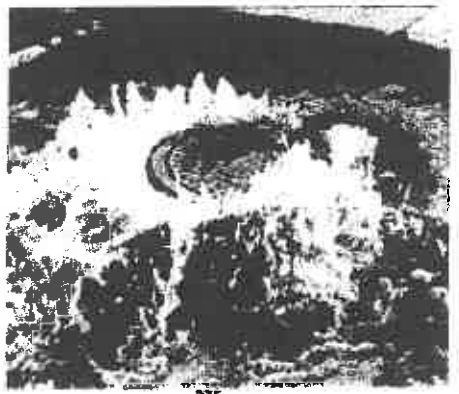
200 gpm



225 gpm



250 gpm



275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4.99

Figure A-1 – Reference Sheet for Estimating Sewer Spill Flow Rate (from City of San Diego)

SEWER OVERFLOW PROCEDURE

Take photos of all spills

Take photos of all spills

Responsible Party

PRIVATE
Blockage in lateral

- Spill is contained on private property
  - Notify Property owner of proper cleanup
    Notify Supervisor
    Notify Code Enforcement
- Spill reaches City right of way (Curb, gutter, street) Or storm drain involved
  - If property owner has not hired cleanup service
    - **Contain**
      Clear blockage
      Cleanup
      Fill out Report
      - Notify:
        Health Dept
        714-433-6419
        - Online Report **Optional**
          30 days to certify

Contractors

Pro-Pipe
666-0436
800-386-1497 (24hrs)
Mike - 865-5921

National Plant Services
800-445-3614 (24hrs)
Response 1-2 hrs

J & M Keystone
800-368-2757

Esco Pumps
1-323-855-6506

Jemini Systems
1-949-651-6041

Charles King Co.
1-562-426-2974

CITY
Blockage in main line

- Spill enters Storm Drain
  - **Contain**
    Clear blockage
    Cleanup
    Fill out Report
    Contain at catch basin and end of stream
    - Notify:
      Health Dept 714-433-6419
      RWQCB 951-320-6362
      RDMD (PFRD) 714-567-6363 For Assistance Or Impact
      - Over 1,000 gallons Notify OES 800-852-7550
        - Online Report
          3 days
          15 days to certify
- Spill reaches City right of way (Curb, gutter, street) No storm drain involved
  - **Contain**
    Clear blockage
    Cleanup
    Fill out Report
    - Notify:
      Health Dept
      714-433-6419
      - Online Report
        30 days to certify
- Spill is contained on private property
  - **Contain**
    Clear blockage
    Cleanup
    Fill out Report
    - Online Report
      30 days to certify

*** Health Dept Group:**
Mmazur@hca.co.orange.ca.us 433-6280
Lbrennler@hca.co.orange.ca.us 433-6284
Mfennessy@hca.co.orange.ca.us 433-6281
Lhoneybourne@hca.co.orange.ca.us 433-6015

Cypress PD - 714 229-6600
Cypress Fire - 714 527-9475

Health Dept and RDMD after hours 628-7008 (Control one)

RDMD (PFRD) - 567-6363 (storm drain)
Grant Sharp - 973-6691
Resources & Development Management Department

Art Erbes, Sewer Supervisor - cell - 714 300-9978
Bobby Blackburn, Superintendent - cell - 714 308-6274
Call Supervisor immediately upon a spill occurrence.

Element 7: FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM

7.1 INTRODUCTION

State Water Resources Control Board Order No. 2006-0003-DWQ calls for owners of sanitary sewer collection systems to develop Sanitary Sewer Management Plan (SSMP) to reduce potential for sanitary sewer overflows. A component of the model plan requires a Fats, Oils, and Grease (FOG) Control Program. This element summarizes the City's FOG Source Control Program.

7.2 BACKGROUND

Justification for FOG Program. The frequency of sewer line preventive maintenance (hydrojetting), FOG buildup in sanitary sewer siphons, and the volume of grease collection and removal of grease from commercial FOG generators in the proximity of sanitary sewer system service area conclude that a FOG program is warranted.

Problem Area Identification. A FOG problem area is identified by a line blockage determined to be the result of FOG or segments of the sewer where preventive maintenance has identified accumulations of FOG. Potential FOG problem areas consist mainly of trunk line segments in commercial districts that serve a concentration of food service facilities. Problem areas also appear to be associated with multi-family/single family dwelling complexes, although sewer backups at these sites appear to be due to a combination of factors, including grease and disposal of non-biodegradable products.

Sewer Line FOG Obstruction/Blockage Preventive Maintenance Program. Prevention of FOG-related interference to the sewer system consists of a two-prong approach: scheduled preventive maintenance (PM) of problem segments, and source control. Hydro-jetting is the most common method of trunk line preventive maintenance. Known problem areas are prioritized based on qualitative findings of previous preventive maintenance results, such as surcharged condition or significant grease collected on the jetting nozzle. High priority segments are put on a preventive maintenance schedule. Sections identified as "hot spots" are subject to an increased cleaning frequency.

FOG Source Control Program History. A FOG source control program was implemented in December 2004. A field survey identified all food service facilities with and without grease control devices. In December 2004, the City Municipal Code was revised to require that facilities install grease pretreatment devices under certain conditions as specified in the Municipal Code, and which conform to minimum requirements of the current Uniform Plumbing Code. Existing food service establishments without grease control devices and identified as grease producers were made subject to a grease disposal mitigation fee to pay for the costs of sanitary sewer maintenance performed by the City's

Public Works Department. Facilities designated as "limited food service" establishments are exempt from the requirements of the FOG Program. However, any modification to the food preparation process resulting in the generation of FOG, could result in the re-classification of the facility upon inspection of the facility. Periodic inspection of food service facilities began in Spring 2005. Inspections are conducted by a Contract FOG Inspector. All FSE's subject to the inspections pay an annual FOG Permit fee to offset the inspection costs. Limited food service establishments are exempt from FOG permit fees as they are not required to undergo inspections.

SSMP Enhanced FOG Source Control Program. The City has an approved Pretreatment Program. The FOG component of the program is being enhanced by adding food service facilities to the program's Waste Discharge Permit Program, thus increasing public outreach. Operators are given best management practices educational materials by both the water quality and FOG inspectors as they are inspected. A follow up inspection of the FSE is conducted when a facility is found non-compliant after being inspected by the Orange County Health Care Agency. The City continues to implement its FOG public education program for both businesses and residents. For FSE's, information is provided to all operators to educate their employees about proper grease disposal methods. A public education DVD is provided to FSE operators to show to their employees. All new employees are required to view the DVD and to certify that they have viewed the material. This DVD is in English, as well as Spanish, Mandarin, Vietnamese, and Korean. Other educational materials are included in a FOG Manual that is provided to all FSE operators to further increase their understanding of the SSMP requirements. FSE operators are also provided a Kitchen BMP Poster to display in their facility to further educate employees about how to minimize FOG. When FSE operators are mailed their FOG permit notices, the notices contain information regarding the intent of the FOG program as it relates to the SSMP. FOG information is also available on the City website for accessibility by both residents and businesses.

The City has developed various outreach tools to educate FSE operators of FOG program responsibilities. This includes a FOG Powerpoint slideshow on the City website that reviews kitchen best management practices that must be implemented at FSEs. Restaurant operators are also notified prior to inspections reminding them of their responsibilities under the FOG program so that they remain in compliance.

With regard to grease control devices at food service establishments, the City has seen an increase in the devices being installed at existing restaurants especially those requiring discretionary approval by the City such as a conditional use permit. Whenever an existing restaurant building without a grease interceptor applies for a conditional use permit, the City requires installation of a grease interceptor as a condition of approval. This has improved the condition of the City's sanitary sewer system.

7.3 LEGAL AUTHORITY

Fats, Oils, and Grease Ordinance. The City of Cypress has a FOG Ordinance that provides legal authority to implement a pretreatment program for FOG. A summary of the enabling authority is summarized as follows:

Section 13-80 Purpose, policy and findings
Section 13-81 Definitions
Section 13-82 FOG discharge requirement
Section 13-83 Prohibitions
Section 13-84 Food grinders prohibited
Section 13-85 Best management practices required
Section 13-86 FOG pretreatment required
Section 13-87 Variance and waiver of grease interceptor requirement
Section 13-88 Multiple FSEs at commercial properties
Section 13-89 Grease disposal mitigation fee
Section 13-90 Sewer system overflows, public nuisance, abatement orders and cleanup
Section 13-91 FOG wastewater discharge permit required.
Section 13-92 FOG wastewater discharge permit application
Section 13-93 FOG wastewater discharge permit conditions
Section 13-94 FOG wastewater discharge permit fee
Section 13-95 FOG wastewater discharge permit modification of terms and conditions
Section 13-96 FOG wastewater discharge permit duration and renewal
Section 13-97 Exemption from FOG wastewater discharge permit
Section 13-98 Nontransferability of FOG wastewater discharge permits.
Section 13-99 FOG wastewater discharge permit charge for use
Section 13-100 Grease interceptor requirements
Section 13-101 Monitoring and reporting conditions
Section 13-102 Inspection and sampling conditions
Section 13-103 Right of Entry
Section 13-104 Notification of Spill
Section 13-105 Enforcement
Section 13-106 Violations
Section 13-107 Compliance schedule agreement (CSA)
Section 13-108 FOG wastewater discharge permit suspension
Section 13-109 Permit Revocation
Section 13-110 Damages to facilities or interruption of normal operations
Section 13-111 Public Nuisance
Section 13-112 Termination of service
Section 13-113 Emergency suspension order
Section 13-114 Civil Penalties
Section 13-115 Criminal penalties; misdemeanor

Section 13-116 Appeals to the city manager
Section 13-117 Payment of charges
Section 13-118 Judicial review

7.4 ADMINISTRATION

The City of Cypress Public Works Department administers the FOG program. The City's Community Development Department/Building Division issues permits for the installation of grease control devices in conformance with the requirements of the Uniform Plumbing Code, and a grease control device standard plan approved by the Public Works Department and the Community Development Department/Building Division. Inspections of food services establishments are performed by a Contract FOG Inspector.

7.5 REGULATORY/OUTREACH STRATEGY

Food Service Establishment Component. The current commercial program consists of periodic inspections of food service establishments. The rationale includes the following:

- Commercial kitchen operations are deemed the primary source of FOG, based on FOG being a part of their food preparation process and their proximity to grease deposits in the collection system.
- Due to food service facility employee turnover rate, the oral message conveyed to facility management during a periodic inspection (which occurs once a year for kitchen best management practices and three times a year for grease control devices) is diluted or lost over time. A permit provides formal conveyance and ready reference of operating requirements to the business owner/manager.
- Waste discharge permits convey more specific requirements for maintenance frequency, recordkeeping, and other requirements.
- Permitting provides a mechanism for recovery of the costs incurred in implementing the food service establishment component of the FOG program.
- The Cypress City Council, at their April 24, 2006 City Council meeting, concurred with staff's recommendation to implement a waste discharge permitting fee program specifically for food service facilities.
- The goal is to inspect each permitted facility annually for compliance with kitchen best management practices requirements and to inspect grease control devices at least three times per year to ensure proper maintenance of pretreatment mechanisms, and dispense BMP information during the inspection as needed.

Multi-family/Residential Component. The non-commercial component consists of the following:

- Dispensing of educational brochures at municipal facilities, and issuing periodic (e.g. immediately prior to pending holidays) public service announcements to residents of prudent food preparation waste handling practices. This PSA's are published in the quarterly City Newsletter, City's local cable television channel, and the City's official website.
- Other venues as opportunities arise including, but not limited to, the Cypress Community Festival, Arts Week, and Arbor Day Celebration.

7.6 GREASE REMOVAL TECHNOLOGY

Design and Sizing. The ordinance provides the following direction. The requirement is implemented by the Building Division.

> The owner of food service establishment shall install or cause to be installed a pretreatment system for grease removal which meets or exceeds minimum sizing requirements of the most current version of the UPC. The Director of Public Works and the Building Official shall approve the final sizing. A standard plan has been prepared by the City identifying the minimum requirements that must be installed for any grease control device installed at a food service establishment. Additional pretreatment may be required if FOG problems are evident in public sewers. Food grinders are prohibited.

- A food service establishment will be required to install additional grease control measures if there is grease buildup at the point of connection of the sewer, history of grease blockage at such point, or accelerated maintenance of the public sewer resulting from the discharge of grease from said facility. These measures may include, but not be limited to, installation of additional pretreatment equipment, or reimbursement of the City for the cost of accelerated preventive maintenance of the public sewer to prevent blockage of the sewer related to such grease discharge.

- City may, upon finding existing system insufficient for effective FOG retention, require additional grease control measures.

Pretreatment System Maintenance. The ordinance provides the following direction and is conveyed in the waste discharge permit.

- Pretreatment systems shall be inspected and maintained by the user as per the City's FOG requirements needed to ensure continuous efficient operation.
- A record of all inspection and maintenance activity shall be kept by the user of the facility, showing the date of the inspection or maintenance, activity completed, and disposition of the removed contents or repairs/replacement of equipment components.
- Failure to operate or maintain the pretreatment system in a way so as to ensure optimum efficiency, or failure to keep records of pretreatment system maintenance, shall constitute a violation of this Chapter.

7.7 WASTE DISCHARGE PERMITS

Policy and Applicability. The waste discharge permit program as applied to the FOG source control is summarized as follows.

- Issue waste discharge permits to food service facilities that are required to have pretreatment systems or are identified as known contributors of FOG.
- Food service establishments are required to have pretreatment systems.
- A Food Service Establishment (FSE) is defined in the California Uniform Retail Food Facility Law (CURFFL) Health & Safety Code § 113785, *as any commercial or public entity within the boundaries of the City, 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. A limited food preparation establishment is not considered an FSE 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.*
- A limited food service establishment (LFSE) must certify that they are exempt from the FOG requirements due to their current food preparation processes. However, a LFSE operator may have the facility classification changed based upon inspection by the FOG inspector and his findings of the facility.
- FOG pretreatment system maintenance frequency is established in waste discharge permits. Frequency of inspection is determined by the FOG program. At the minimum, grease control device inspections occur at least three times per year.

Permit Contents. The City of Cypress has established a FOG Permit Program. As part of this program, a Fats, Oils, and Grease Control Program Manual has been prepared and is provided to all food service establishments in the City. Contained in this manual are various forms that are completed as grease control device and kitchen best management practices inspections are completed. Other information provided to prospective and current food service establishment operators include the Grease Interceptor Standard Plan and a FOG Frequently Asked Questions brochure. These referenced materials are included in the back of document as Attachment "4". Permits follow a standard format for all applications and contain the following provisions.

- Designated waste streams from food service establishments shall discharge through pretreatment systems identified in the permit.
- Bypass or modification of waste treatment systems prohibited.
- Maintain waste treatment systems per manufacturers' instructions or at frequency as indicated in permit, whichever is more frequent. Maintenance is defined as removal of collected contents and the unit kept in optimal physical/mechanical condition.
- Keep records of waste treatment system maintenance, including pumping and/or cleanout dates, and disposition of treatment system wastes. Also, keep records of all employee training activities.
- Conform to reporting requirements as required.
- Do not discharge any hazardous waste or other problem wastes.
- Notify City immediately of any abnormally high volume or concentration of waste discharge that has occurred or is imminent.
- Train employees on waste discharge permit requirements, including pretreatment system maintenance recommendations and requirements, and kitchen best management practices. Records of all employee training shall be kept on file at the facility.

Inspection and Enforcement. Inspections are conducted to assess compliance with permit requirements. Compliance is determined by visual inspection of the PreTreatment (PT) system, interview with owner/staff about general operations and waste handling; and documentation of PT maintenance, PT waste disposition and employee training. (Note: waste stream monitoring and analysis may be required to determine compliance). The inspection goal is to conduct one kitchen best management inspection per year and three grease control device inspections per year. Inspections are unannounced.

Routine protocols for determination of FOG program compliance have been established. All food service establishments subject to the permit requirements undergo inspections. Review of records includes pretreatment equipment maintenance logs, kitchen hoods, waste disposal receipts, and employee training. Failure to implement kitchen BMPs or maintain grease control devices will result in the issuance of a notice of non-compliance to the FSE operator. Upon receipt of the notice of non-compliance, the FSE operator is given an

opportunity to make the necessary corrections, which is then verified by a follow up inspection.

The City uses a combination of actions as specified in the FOG Ordinance against a noncompliant user including, but not limited to, issuance of a notice of non-compliance, issuance of administrative citation, permit revocation, as well as other enforcement remedies that the City may have available.

FOG Waste Management. FOG discharge to the sewer is prohibited. Users are required to properly dispose of pretreatment wastes. A pumping service must be hired to pump and properly dispose of grease interceptor contents. Disposal of liquid wastes in the trash is unlawful.

The following policy is established to deal with verifying disposition of grease wastes.

- Facility with grease interceptor shall keep receipts of pumping company names and service dates.
- Facility with grease trap(s) that utilize a service company shall keep records of company and service dates.
- Facility with grease trap(s) that services in-house must keep record of service dates only, and describe and demonstrate PreTreatment waste handling procedure.

7.8 FOG BUDGET, RESOURCES, AND COST RECOVERY

Budget. The FOG Program applies to all food service establishments and excludes those that are classified as limited food service establishments. It is funded through the Sewer Fund, which is funded by sewer service-related fees and charges to commercial and residential facilities. The program presently has a budget of approximately $65,000 and is subject to change. Administration of the FOG program is handled by the Public Works Department Water Quality Manager. Inspections are performed by a private contractor retained by the City. Maintenance of the sanitary sewer system as it relates to FOG control, is performed by the Department of Public Works Maintenance Division.

Equipment Summary. FOG resources are limited to the equipment that is used by the contract FOG inspector while performing inspections.

- Cost Recovery. The City of Cypress has established a fee schedule to help recover the cost of the source control activities, as it relates to the FOG inspection program. The schedule includes fees for permits which includes grease control device inspections/re-inspections, kitchen best management practices inspections/re-inspections, and plan checks. Other FOG related services will be assessed based on actual costs. Spill cleanup recovery accounting is handled by the Department of Public

Works Maintenance Division apart from the FOG program. The amount and application of the fees is designed to recoup the cost of implementing the FOG Inspection Program

Element 8: SYSTEM EVALUATION AND CAPACITY ASSURANCE

a) HISTORIC EFFORTS

In order to formulate solutions to address chronic maintenance issues, the City of Cypress authorized the "Hot Spot Sewer Study". The study was completed in September 1993. It investigated 37 locations reported to be the problem areas by the City's Public Works staff. At two of these locations (Moody Street at Lincoln Avenue, and Florence Street from Cerritos Avenue to Ferne Avenue) the direction of sewage flow changes 180 degrees, which causes settlement of the solids. Two locations (Cathy Avenue and Jeanine Lane, and Myra Avenue and Beaver Circle) were identified with settlement problems. The remaining 33 locations had problems with grease plugging up the sewers. Eight of the 33 locations were inverted siphons which were constructed under crossing drainage facilities.

Some of the general problems found throughout the City's sewer system are as follows:

- High groundwater table, resulting in infiltration.
- A flat natural ground slope, approximately 0.2 percent, limiting the slopes at which sewers can be constructed at reasonable depths.
- Construction of sewers on very flat slopes due to problems 1 and 2 above. Drop manholes have been used to avoid constructing sewers below the water table.
- Low flows in sewers (below 50 percent) even during peak hours, resulting in velocities less than 2 feet per second (fps) which, in turn, results in settlement of solids in the pipes.
- Grease clogging the sewer lines in residential and commercial areas.
- Low velocities in sewer siphons, which require frequent maintenance.
- 180 degree direction changes in sewer system.

The City has already begun to remedy some of the deficiencies of the sewer collection system. The following completed projects have contributed toward the improvement or monitoring of the sewer collection system:

2002-23 Sewer Flow Monitoring Program

2003-05 Sewer Repair Orange Avenue W/O Moody Street

2004-07 Sewer Line Rehabilitation at Cerritos and Florence

2005-09 Sewer Line Repair at Marion Avenue and Barbara Anne Avenue

2006-04 Sewer Modifications at Moody Street and Alaska Avenue

2006-17 Sewer Lining on Marion Street from Moody Street to Bloomfield Street

2006-18 City-Wide Sewer CCTV

b) RECENT EFFORTS

In August of 2008, the City updated the 2003 Sewer Master Plan, which analyzed the entire sewer collection system. The master plan provided recommendations for $21.6 million in capacity improvements, as well as $21.5 million in condition improvements where deficiencies are known.

The objective of this Master Plan Update was to evaluate the City's existing sewer collection system and provide a framework for undertaking the construction of new and replacement facilities for providing proper service. This aids the City in meeting the requirements of the Statewide General Waste Discharge Requirements issued by the State Water Resources Control Board on May 2, 2006.

The Sewer Master Plan currently categorizes necessary repairs into two main categories: "Hotspot and Capacity Deficiency" and "Condition Deficiency." Due to this Master Plan, the CITY has acquired the services of consultants such as AKM Consulting Engineers, Lee and Ro, Inc. and Harris and Associates. These firms have designed several sewer projects over the past 5 years and through the competitive bidding process, a significant portion of the deficiencies have been addressed. By the end of 2014, out of 198 sewer segments, 88 sewer segments which had severe/major Condition Deficiency have been repaired. Also out of 23 projects with Capacity Deficiency, 7 projects have been completed. In all, a total of 32,000 linear feet out of 83,000 linear feet of deficient sewer have been repaired. It should be noted that these projects were the highest priority projects undertaken to reduce the risk of any potential sewer overflow.

c) CURRENT SEWER PROGRAM PLAN

The City of Cypress is committed to the replacement, repair, and maintenance of its sewer lines. The City's $9.1 million, 7-year program, allocates an average of $1.3 million per year for the design and construction of sewer system replacement and rehabilitation projects. The current sewer program aims to address the deficiencies as identified in the City's Sewer System Master Plan Update. Each year the existing sewer rehabilitation program is updated and modified based upon remaining cash flow, utility work, and paving projects. The needed capital improvements were identified as a result of assessment of the system through capacity analyses, condition assessment of the system based upon CCTV inspections and physical facility inspections. In July 2009, the City Council approved an adjustment to the City's sanitary sewer rate assessed to residences and businesses. The rate adjustment was approved for a 5-year period and revenue generated would fund the sanitary sewer system that has been identified as having deficiency or capacity issues.

Element 9: MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

The City of Cypress Public Works Department operates and maintains the sanitary sewer collection system. The Department's primary goal is to ensure proper sanitary sewage flow while minimizing blockages and other system malfunctions that may have significant health, environmental, or property damage impacts.

The Public Works Department uses an internet database program (Quickbase), which allows staff to input, retrieve, and track maintenance activities. The Maintenance Division's sewer crew maintains a daily log of activities. This log includes; the work performed, pipe/manhole identification number, length of pipe cleaned, structural or maintenance problems discovered in the pipe and their severity, staff names, equipment used, material used, and whether additional follow-up is needed. This information is then entered into Quickbase. This database enables City staff to better monitor and report SSOs, blockages, and back-ups due to FOG, roots, and/or other sewer system failures. Additionally, Quickbase is used to track frequency, location, and volume of SSOs. It is also used to monitor grease interceptor and kitchen best management practices inspections of food service establishments conducted by the City's Contract FOG Inspector as well as FOG Permit payment history.

In addition to internal staff, contractors may be utilized as needed to complete targeted and citywide system assessments. A Closed Circuit Television (CCTV) inspection of the City's entire system was completed to provide an overall condition rating. These images were then analyzed and deficiencies were identified. Modifications to the existing maintenance schedule were made based on the analysis of the videos. In addition, Capital Improvement Projects have been identified to rehabilitate sections of the City's system.

The City will continue to enhance a formal methodology to monitor the implementation effectiveness of each SSMP element, and work on the audit element to ensure that the City remains in compliance with the WDR. Changes and updates to the SSMP will be made as necessary, based on the results of future evaluations.

Element 10: SSMP PROGRAM AUDITS

The Program Audits section of the SSMP serves to record the evolution of the SSMP elements. At the intitial submittal of the City's SSMP, the Department of Public Works reported that it would either perform the audits itself or obtain outside resources to perform the audits of the City's SSMP once every two years and evaluate the findings and update the SSMP accordingly.

Consequently, two audits of the SSMP were performed in 2011 and 2013 by an outside consultant, AKM Engineering. Review of the audit included an evaluation and status report of the sanitary sewer system capital improvement program, measurement of the performance of the City's sanitary sewer cleaning program, status of the City's FOG program especially the number of grease interceptor and kitchen best management inspections performed as well as data pertaining to the number of grease control devices that have been installed at food service establishments since the inception of the program, and the City's SSO prevention efforts. Copies of the audits and their findings are available in the Public Works Department.

Element 11: COMMUNICATION PROGRAM

This section highlights the communications and outreach plan developed for the City of Cypress's SSMP. The City's main "customers" are the residential, commercial, and industrial users that connect to the sewer main lines located within the City of Cypress. The City of Cypress provides extensive public outreach and education materials to residents and businesses related to sanitary sewer overflows, preventing grease blockages, and Best Management Practices (BMP) for handling of grease waste. Residential education includes public service announcements on the City's website and cable television channel, distribution of information at community events, and targeted mailers to problem areas. The City also recently prepared a Powerpoint slideshow relative to FOG. This presentation describes the Fats, Oils, and Grease (FOG) program and provides information on different ways a food service establishment (FSE) can comply with the FOG Ordinance and ultimately obtain a FOG Permit. Additionally, Public Works staff is available to attend Chamber of Commerce meetings, homeowner association meetings, and food service establishment and industrial staff meetings, as requested.

The Public Works Department inspects approximately 110 food service facilities annually for compliance with BMPs and the maintenance of their grease removal device. During these inspections, educational materials are distributed and the inspector is available to answer any questions the owner/manager may have. The City also conducts approximately five plan checks per year for new and remodeled restaurants and other food service facilities, to determine proper grease removal device sizing. As the economy continues to improve, we are seeing the opening of new restaurants or remodeling of existing facilities which mandate the installation of City-approved grease control devices. The City also periodically mails FOG prevention information to food service establishment operators reminding them of the FOG prevention responsibilities.

The City continues to use the quarterly Recreation Brochure to disseminate information describing the negative impacts of discharging fats, oils, and grease into the sanitary sewer system. In areas where a sewer overflow is attributed to the build-up of fats, oil, or grease in the sewer pipes, City staff will send targeted mailers to the affected area notifying neighbors of the event. These mailers will reinforce the message to avoid pouring these items down the drain and describe the continued impact that this has on the sewer system. During the holidays, important information about fats, oils, and grease is disseminated via the City's website and cable television channel.

The City has disseminated information in meetings and/or by flyers/brochures to land developers, consultant engineers, general contractors, and plumbing contractors regarding the need and methods to reduce SSOs. To further enhance its knowledge of SSMP requirements, ongoing interaction between departments and divisions is held to discuss the program's components. The

Community Development Department, Community Development/Building Division, and the Public Works Department/Maintenance Division are provided information regarding the overall SSMP, program audits, emergency response plan, FOG program, and design standards so that they can familiarize themselves with the requirements. For capital improvement projects, key stakeholders may be outreached to include engineering consultants and contractors of the importance of proper sewer system design and capacity standards. The City's Finance Department also plays a role in the FOG program by referring any prospective food service establishment operator to the Public Works Department to ensure that the operator is made aware of the FOG program requirements.

Plumbers and sewer contractors have access to all available City of Cypress plans, specifications, and standard details. Information is also made available to contractors/architects/engineers relative to the FOG plan check progress. Anytime a restaurant plans to open in the City, plans must be submitted to the City for a separate FOG plan check. This is separate from the plan check performed by the City's building division. The FOG plan check includes review of the projects plumbing plan to verify that the city-approved grease interceptor is installed and that all 3-compartment sinks, mop sinks, dishwashers, and floor drains are connected to the grease interconnect. This practice has made it possible for the City to avoid situations where an inadequate grease interceptor is installed or the plumbing is not connected correctly. Information regarding the FOG plan process is posted on the City's website and available at the Public Counter. The City of Cypress has developed various outreach materials for these entities. Information includes proper operations and maintenance activities and effective BMP's for preventing blockages.

Attachment 1

STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2006-0003

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**, 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

<table>
<tr><td>Task and Associated Section</td><td colspan="4">Completion Date</td></tr>
<tr><td></td><td>Population > 100,000</td><td>Population between 100,000 and 10,000</td><td>Population between 10,000 and 2,500</td><td>Population < 2,500</td></tr>
<tr><td>Application for Permit Coverage
Section C</td><td colspan="4">6 months after WDRs Adoption</td></tr>
<tr><td>Reporting Program
Section G</td><td colspan="4">6 months after WDRs Adoption[1]</td></tr>
<tr><td>SSMP Development Plan and Schedule
No specific Section</td><td>9 months after WDRs Adoption[2]</td><td>12 months after WDRs Adoption[2]</td><td>15 months after WDRs Adoption[2]</td><td>18 months after WDRs Adoption[2]</td></tr>
<tr><td>Goals and Organization Structure
Section D 13 (i) & (ii)</td><td colspan="2">12 months after WDRs Adoption[2]</td><td colspan="2">18 months after WDRs Adoption[2]</td></tr>
<tr><td>Overflow Emergency Response Program
Section D 13 (vi)</td><td rowspan="4">24 months after WDRs Adoption[2]</td><td rowspan="4">30 months after WDRs Adoption[2]</td><td rowspan="4">36 months after WDRs Adoption[2]</td><td rowspan="4">39 months after WDRs Adoption[2]</td></tr>
<tr><td>Legal Authority
Section D 13 (iii)</td></tr>
<tr><td>Operation and Maintenance Program
Section D 13 (iv)</td></tr>
<tr><td>Grease Control Program
Section D 13 (vii)</td></tr>
<tr><td>Design and Performance
Section D 13 (v)</td><td rowspan="3">36 months after WDRs Adoption</td><td rowspan="3">39 months after WDRs Adoption</td><td rowspan="3">48 months after WDRs Adoption</td><td rowspan="3">51 months after WDRs Adoption</td></tr>
<tr><td>System Evaluation and Capacity Assurance Plan
Section D 13 (viii)</td></tr>
<tr><td>Final SSMP, incorporating all of the SSMP requirements
Section D 13</td></tr>
</table>

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 30days 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

LEGAL AUTHORITY ATTACHMENTS

1. Attachment 2.1: Chapter 13, Article VIII, Sections 13-80 through 13-118: Fats, Oil and Grease Management and Discharge Control

Attachment 2.1

ARTICLE VIII. FATS, OIL AND GREASE MANAGEMENT AND DISCHARGE CONTROL

Sec. 13-80. Purpose, policy and findings.

(a) The Porter-Cologne Water Quality Act (California Water Code §§ 13000 et seq.) provides for the regulation and reduction of pollutants discharged into the waters of California.

(b) The city 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 regulations 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"), may produce FOG as a byproduct of their operations, which, if not properly managed and disposed, may create the potential for blockage of sanitary sewer lines, which can result in damage to both public and private property, and sewage overflows that cause health problems 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 to protect the public health and safety.

(h) This chapter shall be interpreted in accordance with the definitions set forth in section 13-81. 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 chapter 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 sanita' districts other than the city. Such FSEs will be permitted and regulated by regulatory agencies other than 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. No. 1065, § 1, 12-13-04.)

Sec. 13-81. Definitions.

(a) Unless otherwise defined herein, terms related to water quality shall be as defined in the sewer WDRs and in the latest edition of Standard Methods for Examination of Water and Wastewater, published by the American Public Health Association, the American Water Works Association and the Water Environment Federation. The testing procedures for waste constituents and characteristics shall be as provided in 40 C.F.R. § 136 (Code of Federal Regulations).

(b) Other terms not herein defined are defined as being the same as set forth in the latest adopted applicable editions of the California Codes applicable to building construction adopted pursuant to the California Building Standards Law.

(c) Subject to the foregoing provisions, the following words and phrases shall mean:

(1) *Best management practices* : Schedules of activities, prohibitions of practices, maintena' procedures and other management practices to prevent or reduce the introduction of FOG to the se facilities.

(2) *Director* : The director of the department of public works, the city engineer.

(3) *Discharger* : Any person who discharges or causes a discharge of wastewater directly or indirectly to the sewer facilities. Discharger shall have the same meaning as user.

(4) *Fats, oils, and grease (FOG)* : Any substance, such as a vegetable, animal or other 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.

(5) *FOG control program* : The FOG control program required by and developed pursuant to section (c)(12)(viii) of the sewer WDRs.

(6) *FOG discharge manual* : The "fats, oil and grease discharge manual," setting forth best management practices for FSEs, as approved by the director.

(7) *FOG wastewater discharge permit* or *discharge permit* : A permit issued by the city subject to the requirements and conditions established by the city authorizing the permittee or discharger to discharge wastewater into the city's facilities or into sewer facilities or which ultimately discharge into such a facility.

(8) *Food grinder* : Any device installed in the plumbing of a facility or sewage system for the purpose of grinding food waste or food preparation byproducts for the purpose of disposing it in the sewer system.

(9) *Food service establishment (FSE)* : Facilities defined in California Uniform Retail Food Facility Law (CURFFL) Health & Safety Code § 113785, and any commercial or public entity within boundaries of the city, operating in a permanently constructed structure such as a room, building, 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. A limited food preparation establishment is not considered an FSE 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.

(10) *Grab sample* : A sample taken from a waste stream on a one-time basis without regard to the flow in the waste stream and without consideration of time.

(11) *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. A grease control device may also include any other proven method to reduce FOG subject to the approval of the director.

(12) *Grease disposal mitigation fee* : A fee charged to an owner/operator of an FSE, as provided in this chapter, 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 FSE under consideration impossible.

(13) *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 an FSE 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.

(14) *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.

(15) *Inspector* : A person authorized by the city to inspect any existing or proposed wastewater generation, conveyance, processing, and disposal facilities.

(16) *Interference* : Any discharge which, alone or in conjunction with discharges from other sources, inhibits or disrupts the city's sewer system, treatment processes or operations; or is a cause of violation of the city's NPDES or waste discharge requirements.

(17) *Local sewering agency* : Any public agency or private entity responsible for the collection and disposal of wastewater to the city's sewer facilities duly authorized under the laws of the state to construct and/or maintain public sewers.

(18) *Major operational change* : 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 create a potential for SSOs to occur.

(19) *New construction* : Any structure planned or under construction for which a sewer connection permit has not been issued.

(20) *Permittee* : A person who has received a discharge permit to discharge wastewater into the city's sewer facilities subject to the requirements and conditions established by the city.

(21) *Public agency* : The state and/or any city, county, special district, other local governmental authority or public body of or within this state.

(22) *Public sewer* : A sewer owned and operated by the city, or other local Public Agency, which is tributary to the City's sewer facilities.

(23) *Regulatory agency* : Regulatory agency or regulatory agencies shall mean those agencies having regulatory jurisdiction over the operations of the city, including, but not limited to:

a. United States Environmental Protection Agency, Region IX, San Francisco and Washington, D.C. (EPA).

b. California State Water Resources Control Board (SWRCB).

c. California Regional Water Quality Control Board, Santa Ana Region (Santa Ana RWQCB).

d. South Coast Air Quality Management District (SCAQMD).

e. California Department of Health Services (DOHS).

f. Any public agency.

(24) *Sewage* : Wastewater.

(25) *Sewer facilities or system* : Any and all facilities used for collecting, conveying, pumping, treating, and disposing of wastewater and sludge operated by the city, including the public sewer.

(26) *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.

(27) *Sewer WDRs* : 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, adopted by the Santa Ana RWQCB, and any successor permit to such WDRs.

(28) *Sludge* : any solid, semisolid or liquid decant, subnate or supernate from a manufacturing process, utility service, or pretreatment facility.

(29) *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.

(30) *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.

(31) *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.

(32) *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.

(33) *Water 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.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-82. FOG discharge requirement.

No 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. No. 1065, § 1, 12-13-04.)

Sec. 13-83. 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. No. 1065, § 1, 12-13-04.)

Sec. 13-84. Food grinders prohibited.

(a) No food grinder shall be installed in a plumbing system of new construction of an FSE.

(b) All food grinders shall be removed from an existing FSE upon: (i) major operational change to the FSE; or (ii) within one hundred eighty (180) days of the effective date of this article, except when expressly approved, in writing, by the director.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-85. 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. No. 1065, § 1, 12-13-04.)

Sec. 13-86. FOG pretreatment required.

FSEs are required to install, operate and maintain an approved type and adequately sized grease interceptor necessary to maintain compliance with the objectives of this chapter in accordance with the FOG discharge manual and the requirements of 40 CFR § 403.5.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-87. Variance and waiver of grease interceptor requirement.

(a) *Variance from grease interceptor requirements.* A variance or a conditional waiver from the grease interceptor requirements on such terms and conditions as may established by the director, consistent with the requirements of the sewer WDRs, the city's FOG control program, the FOG discharge manual, and best construction, engineering, environmental and health and safety practices, (1) to allow alternative pretreatment technology that is, at least, equally effective in controlling the FOG discharge in lieu of a grease interceptor, may be granted by the director to FSEs demonstrating to the director's satisfaction that it is impossible to install, operate or maintain a grease interceptor; or (2) where the FSE demonstrates to the director's satisfaction that any FOG discharge from the FSE is negligible and will have an insignificant impact to the

sewer system.

(b) *Waiver from grease interceptor installation with a grease disposal mitigation fee.* For FSEs where installation of grease interceptor is not feasible and no equivalent alternative pretreatment can be installed, a waiver from the grease interceptor requirement may be granted with the imposition of a grease disposal mitigation fee as described in section 13-89. The director's determination to grant the waiver with a grease disposal mitigation fee will be based upon such considerations that the director determines to be appropriate and consistent with the sewer WDRs, the city's FOG control program, the FOG discharge manual, and best construction, engineering, environmental and health and safety practices. Provided, however, that a grease interceptor will be installed when the FSE either (i) applies for any discretionary permit, including, but not limited to, a conditional use permit; or (ii) conducts any remodeling to an FSE which involves construction valued at fifty thousand dollars ($50,000.00) or more requiring a building permit and which involves any one or combination of the following: (1) under slab plumbing in the food processing area, (2) a thirty (30) per cent increase in the net public seating area, (3) a thirty (30) per cent increase in the size of the kitchen area, or (4) any change in the size or type of food preparation equipment. No discretionary permit, including but not limited to a conditional use permit, shall be issued to an FSE unless the applicant can demonstrate that a grease interceptor has been or will be installed at the FSE.

(c) *Application for waiver or variance of requirement for grease interceptor.* An FSE may submit an application for waiver or variance from the grease interceptor requirement to the director. Terms and conditions for issuance of a variance to an FSE shall be set forth in the discharge permit. A waiver or variance may be revoked at any time when any of the terms and conditions for its issuance is not satisfied or if the conditions upon which the waiver was based change so that the justification for the waiver no longer exists.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-88. 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 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 sole discretion.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-89. Grease disposal mitigation fee.

(a) FSEs that operate without a grease control interceptor may be required to pay an annual grease disposal mitigation fee to equitably cover the costs of increased maintenance and administration of the sewer system as a result of the FSEs' inability to adequately remove FOG from its wastewater discharge. This section shall not be interpreted to allow a new FSE, or existing FSEs undergoing remodeling or change in operations, to operate without an approved grease interceptor unless the director has determined that it is impossible to install or operate a grease control interceptor for the FSE under the provisions of this chapter.

(b) The grease disposal mitigation fee shall be established by resolution of the city council, and shall be based on the estimated annual increased cost of maintaining the sewer system for inspection and removal of FOG and other viscous or solidifying agents attributable to the FSE resulting from the lack of a grease interceptor or grease control device and such other costs that the city council considers appropriate.

(c) The grease disposal mitigation fee may not be waived or reduced when the FSE does not comply with minimum requirements of this chapter and/or its discharge into the sewer system in the preceding twelve (12) months has caused or potentially caused or contributed alone or collectively, in sewer blockage or a sanitary

sewer overflow ("SSO") in the sewer downstream, or surrounding the FSE prior to the waiver request.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-90. 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 an 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. No. 1065, § 1, 12-13-04.)

Sec. 13-91. FOG wastewater discharge permit required.

(a) FSEs proposing to discharge or currently discharging wastewater-containing FOG into the city's sewer system shall obtain a FOG wastewater discharge permit from the city within either (i) one hundred eighty (180) days from the effective date of this chapter or (ii) at the time any FSE applies for or renews its annual business license from the city. Compliance with this chapter must be demonstrated at the time any business license is issued, provided that the director may extend the compliance date for no more than ninety (90) days after the date of the issuance of the license.

(b) FOG wastewater discharge permits shall be expressly subject to all provisions of this chapter and all other regulations, charges for use, and fees established by the city. The conditions of FOG Wastewater Discharge Permits shall be enforced by the city in accordance with this chapter and applicable state and federal regulations.

(c) The city shall not issue a certificate of occupancy for any new construction, or occupancy unless an FSE has fully complied with the provisions of this chapter.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-92. FOG wastewater discharge permit application.

Any person required to obtain a FOG wastewater discharge permit shall complete and file with the city prior to commencing discharges, an application in a form prescribed by the director and shall provide the city such information and documents as the director determines is necessary and appropriate to properly evaluate the application. The applicable fees shall accompany this application. After evaluation of the data furnished, the director may issue a FOG Wastewater discharge permit, subject to terms and conditions set forth in this chapter and as otherwise determined by director to be appropriate to protect the city's sewer system.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-93. FOG wastewater discharge permit conditions.

The issuance of a FOG Wastewater Discharge Permit may contain any of the following conditions or limits determined by the Director:

(a) Limits on discharge of FOG and other priority pollutants.

(b) Requirements for proper operation and maintenance of grease interceptors and other grease control devices.

(c) Grease interceptor maintenance frequency and schedule.

(d) Requirements for implementation of best management practices and installation of adequate grease interceptor and/or grease control device.

(e) Requirements for maintaining and reporting status of best management practices.

(f) Requirements for maintaining and submitting logs and records, including waste hauling records and waste manifests.

(g) Requirements to self-monitor.

(h) Requirements for the FSE to construct, operate and maintain, at its own expense, FOG control device and sampling facilities.

(i) Consent by the operator of the FSE for the city and other regulatory agencies to inspect the FSE to confirm compliance with this chapter, the sewer WDRs and other applicable laws, rules and regulations, including any NPDES permit applicable to the city.

(j) Additional requirements as otherwise determined to be reasonably appropriate by the director to protect the city's system or as specified by other regulatory agencies.

(k) Other terms and conditions, which may be reasonably applicable to ensure compliance with this chapter as determined by the director.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-94. FOG wastewater discharge permit fee.

The FOG wastewater discharge permit fee shall be paid by the applicant in an amount adopted by resolution of the city council. Payment of permit fees must be received by the city prior to issuance of either a new discharge permit or a renewed discharge permit. A permittee shall also pay any delinquent invoices in full prior to permit renewal.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-95. FOG wastewater discharge permit modification of terms and conditions.

(a) The terms and conditions of an issued discharge permit may be subject to modification and change by the sole determination of the director during the life of the permit based on:

(1) The discharger's current or anticipated operating data;

(2) The city's current or anticipated operating data;

(3) Changes in the requirements of regulatory agencies which affect the city; or

(4) A determination by the director that such modification is appropriate to further the objectives of chapter.

(b) The permittee may request a modification to the terms and conditions of an issued discharge permit. The request shall be in writing stating the requested change, and the reasons for the change. The director shall

review the request, make a determination on the request, and respond in writing.

(c) The permittee shall be informed of any change in the discharge permit limits, conditions, or requirements at least forty-five (45) days prior to the effective date of change. Any changes or new conditions in the discharge permit shall include a reasonable time schedule for compliance.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-96. FOG wastewater discharge permit duration and renewal.

FOG wastewater discharge permits shall be issued for a period not to exceed 1 year. Upon expiration of the discharge permit, the user shall apply for renewal of the permit in accordance with the provisions of this chapter.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-97. Exemption from FOG wastewater discharge permit.

A limited food preparation establishment is not considered an FSE for the purposes of this chapter and is exempt from obtaining a FOG wastewater discharge permit.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-98. Nontransferability of FOG wastewater discharge permits.

(a) FOG wastewater discharge permits issued under this chapter are for a specific FSE, for a specific operation and create no vested or property rights.

(b) No FOG wastewater discharge permit holder shall assign, transfer or sell any FOG wastewater discharge permit issued under this chapter nor use any such permit for or on any premises or for facilities or operations or discharges not expressly encompassed within the underlying permit.

(c) Any FOG wastewater discharge permit which is transferred to a new owner or operator or to a new facility is void.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-99. FOG wastewater discharge permit charge for use.

In addition to the FOG Wastewater discharge permit application fee, a charge to cover all costs of the city for providing the sewer service and monitoring shall be established by resolution of the city council.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-100.00 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.

Sec. 13-101. 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 two (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. No. 1065, § 1, 12-13-04.)

Sec. 13-102. Inspection and sampling conditions.

(a) The director may inspect and sample or order the inspection and sampling of 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, invoices and other documents and information and to make inquiries of the permittee and its employees relating to the cleaning, maintenance and inspection of the grease control devices or interceptor or other facilities relating to discharges into the sewer system.

(b) The director shall have the right to place or order the placement on the FSE's property or other locat as determined by the director, such devices as are necessary to conduct sampling or metering operations. Where an 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 FOG wastewater discharge 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 two (2) years.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-103. 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. No. 1065, § 1, 12-13-04.)

Sec. 13-104. Notification of spill.

(a) In the event a permittee is unable to comply with any FOG Wastewater discharge permit condition due to a breakdown of equipment, accidents, or human error or the permittee has reasonable opportunity to know that his/her/its discharge will exceed the discharge provisions of the FOG wastewater discharge permit or this chapter, the discharger shall immediately notify the city by telephone at the number specified in the permit. If the material discharged to the sewer has the potential to cause or results in sewer blockages or SSOs, the discharger shall immediately notify the local health department, city or county, and the city.

(b) Confirmation of this notification shall be made in writing to the director at the address specified in the FOG wastewater discharge permit no later than five (5) working days from the date of the incident. The written notification shall state the date of the incident, the reasons for the discharge or spill, what steps were taken to immediately correct the problem, and what steps are being taken to prevent the problem from recurring.

(c) Such notification shall not relieve the permittee of any expense, loss, damage or other liability which may be incurred as a result of damage or loss to the city or any other damage or loss to person or property; nor shall such notification relieve the permittee of any fees or other liability which may be imposed by this chapter or other applicable law.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-105. 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 13-107.

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

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-106. Violations.

(a) The owner and operator of an 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, properly operate, maintain or remove FOG 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 FOG 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 FSE, 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 l sanitary sewer agency that has jurisdiction over the sanitary sewer system that services the FSE, any authorized inspector, reasonable access to the FSE 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 city and the sanitary sewer agency that has jurisdiction of the sanitary sewer system that services the FSE; or

(10) Fails to pay the Grease disposal mitigation fee as specified in this chapter when due; or

(11) Fails to comply with the provisions of 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. No. 1065, § 1, 12-13-04.)

Sec. 13-107. Compliance schedule agreement (CSA).

(a) Upon determination by the director that a permittee or other owner or operator of an FSE or owner of a property is in noncompliance with the terms and conditions specified in its FOG wastewater discharge permit or any provision of this chapter, or needs to construct and/or acquire and install a grease control device or

grease interceptor, the director may require the permittee, owner or operator to enter into a CSA.

(b) The issuance of a CSA may contain terms and conditions as determined appropriate by the director, including but not limited to requirements for installation of a grease control device, grease interceptor and facilities, submittal of drawings or reports, audit of waste hauling records, best management and waste minimization practices, payment of fees, or other provisions to ensure compliance with this chapter.

(c) The director shall not enter into an CSA until such time as all amounts owed to the city, including user fees, noncompliance sampling fees, or, or other amounts due are paid in full, or an agreement for deferred payment secured by collateral or a third party, is approved by the director.

(d) If compliance is not achieved in accordance with the terms and conditions of a CSA during its term, the Director may issue an order suspending or revoking the discharge permit pursuant to this Chapter.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-108. FOG wastewater discharge permit suspension.

(a) *[Parameters for suspension.]* The director may suspend any permit when it is determined that a permittee:

(1) Fails to comply with the terms and conditions of a CSA order.

(2) Knowingly provides a false statement, representation, record, report, or other document to the city.

(3) Refuses to provide records, reports, plans, or other documents required by the city to determine permit terms or conditions, discharge compliance, or compliance with this chapter.

(4) Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or sample collection method.

(5) Refuses reasonable access to the permittee's premises for the purpose of inspection and monitoring.

(6) Does not make timely payment of all amounts owed to the city for user charges, permit fees, or any other fees imposed pursuant to this chapter.

(7) Causes interference, sewer blockages, or SSOs with the city's collection, treatment, or disposal system.

(8) Violates grease interceptor or grease control device maintenance requirements, or any condition or limit of its FOG wastewater discharge permit or any provision of this chapter.

(b) *[Written notice required.]* When the director has reason to believe that grounds exist for permit suspension, he/she shall give written notice thereof by certified mail to the permittee setting forth a statement of the facts and grounds deemed to exist.

(c) *Effect.*

(1) Upon an order of suspension by the director, the permittee shall immediately cease and desist its discharge and shall have no right to discharge any wastewater containing FOG directly or indirectly to the city's system for the duration of the suspension. All costs for physically terminating and reinstating service shall be paid by the permittee.

(2) Any owner or responsible management employee of the permittee shall be bound by the order of suspension.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-109. Permit revocation.

(a) *Revocation.* The director may revoke any FOG wastewater discharge permit when it is determined that permittee has failed to comply with this chapter.

(b) *Notice of revocation.* When the director has reason to believe that grounds exist for the revocation of a FOG wastewater discharge permit, he/she shall give written notice by certified mail thereof to the permittee setting forth a statement of the facts and grounds.

(c) *Effect of revocation.*

(1) Upon an order of revocation by the director becoming final, the permittee shall permanently lose all rights to discharge any wastewater containing FOG directly or indirectly to the city's system. All costs for physical termination shall be paid by the permittee.

(2) Any owner or responsible management employee of the permittee shall be bound by the order of revocation.

(3) Any future application for a discharge permit at any location within the city by any person associated with an order of revocation will be considered by the city after fully reviewing the records of the revoked FOG wastewater discharge permit, which records may be the basis for denial of a new permit.

(4) An order of FOG wastewater discharge permit revocation issued by the director shall be final in all respects on the sixteenth day after it is mailed to the permittee.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-110. Damages to facilities or interruption of normal operations.

(a) Any person who discharges any waste, including, but not limited to, those listed under 40 C.F.R. § 40, which causes or contributes to any sewer blockage, SSOs, obstruction, interference, damage, or any other impairment to the city's sewer system or sewer facilities or to the operation of the sewer system or those facilities shall be liable for all costs required to clean or repair the system or facilities, together with expenses incurred by the city to resume normal operations. A service charge of twenty-five (25) per cent 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 forty-five (45) days of invoicing by the city.

(b) Any person who discharges a waste which causes or contributes to the city violating its sewer WDRs or any other discharge requirements or permits established by any regulatory agency or the city incurring additional expenses or suffering losses or damage to the sewer system or sewer 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, and including any attorney's fees incurred by the city.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-111. Public nuisance.

Discharge of wastewater in any manner in violation of this chapter or of any order issued by the director, as authorized by this chapter, or any provisions of a FOG wastewater discharge permit is hereby declared a public nuisance and shall be corrected or abated as directed by the director. Any person creating a public nuisance is guilty of a misdemeanor.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-112. Termination of service.

(a) The city, by order of the director, may physically terminate sewer service and water service to any FSE, as follows:

(1) On a term of any order of suspension or revocation of a FOG wastewater discharge permit; or

(2) Upon the failure of a person not holding a valid discharge permit to immediately cease the discharge, whether direct or indirect, to the city's sewer facilities after the notice and process as provided herein.

(b) All costs for physical termination shall be paid by the owner or operator of the FSE or permittee as well as all costs for reinstating service.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-113. Emergency suspension order.

The city may, by order of the director, suspend sewer service and/ or water service when the director determines that such suspension is necessary in order to stop an actual or impending discharge which presents or may present an imminent or substantial endangerment to the health and welfare of persons, or to the environment, or may cause SSOs, sewer blockages, interference to the city's sewer facilities, or may cause the city to violate any state or federal law or regulation or the sewer WDRs. Any discharger notified of and subject to an emergency suspension order shall immediately cease and desist the discharge of all wastewater containing FOG to the sewer system.

(Ord. No. 1065, § 1, 12-13-04.)

. 13-114. Civil penalties.

(a) In addition to criminal penalties and administrative penalties authorized by this Chapter, all users of the City's system and facilities are subject to enforcement actions administratively or judicially by the City, U.S. EPA, Santa Ana RWQCB, or the County of Orange and other Regulatory Agencies. Said actions may be taken pursuant to the authority and provisions of several laws, including but not limited to: (1) Federal Water Pollution Control Act, commonly known as the Clean Water Act (33 U.S.C. §§ 1251*et seq.* .); (2) California Porter-Cologne Water Quality Control Act (California Water Code §§ 13000 *et seq.* .); (3) California Hazardous Waste Control Law (California Health & Safety Code §§ 25100 to 25250); (4) Resource Conservation and Recovery Act of 1976 (42 U.S.C. §§ 6901 *et seq.* .); and (5) California Government Code, §§ 54739-54740.

(b) In the event the City is subject to the payment of fines or penalties pursuant to the legal authority and actions of other regulatory or enforcement agencies based on a violation of law or regulation or its permits or the sewer WDRs, and said violation can be established by the City, as caused by the discharge of any user of the City's system which is in violation of any provision of the City's Chapter or the user's FOG Wastewater Discharge Permit, the City shall be entitled to recover from the user all costs and expenses, including, but not limited to, the full amount of said fines or penalties to which it has been subjected.

(c) Pursuant to the authority of California Government Code §§ 54739 - 54740, any person who violates any provision of this Chapter; any permit condition, prohibition or effluent limit; or any suspension or revocation order shall be liable civilly for a sum not to exceed $25,000.00 per violation for each day in which such violation occurs. Pursuant to the authority of the Clean Water Act, 33 U.S.C. §§ 1251*et seq.* ., any person who violates any provision of this Chapter, or any permit condition, prohibition, or effluent limit shall be liable civilly for a sum not to exceed $25,000.00 per violation for each day in which such violation occurs. The City Attorney, upon request of the Director, shall petition the Superior Court to impose, assess, and recover such penalties, or such other penalties as the City may impose, assess, and recover pursuant to Federal and/or State legislative authorization.

(d) *Administrative civil penalties.* Pursuant to the authority of California Government Code §§ 54740.5 and 54740.6, the city may issue an administrative complaint to any person who violates:

(1) Any provision of this chapter;

(2) Any condition, prohibition, or effluent limit of a FOG wastewater discharge permit or CSA; or

(3) Any suspension or revocation order.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-115. Criminal penalties; misdemeanor.

Any person who violates any provision of this chapter or of a FOG wastewater discharge permit or CSA is guilty of a misdemeanor, which upon conviction is punishable by a fine not to exceed one thousand dollars ($1,000.00), or imprisonment for not more than six (6) months, or both. Each violation and each day in which a violation occurs may constitute a new and separate violation of this chapter and shall be subject to the penalties contained herein.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-116. Appeals to the city manager.

Any FSE, permit applicant, or permittee adversely affected by a decision made by the director may appeal the decision by filing, within ten (10) days, a written request for hearing before the city manager accompanied by an appeal fee in an amount established by resolution. The request for hearing shall set forth in detail all the issues in dispute all facts supporting appellant's request. A hearing shall be held by the city manager within sixty-five (65) days. If the matter is not heard within the required time, the order of director shall be deemed final. The appeal fee shall refunded if the city manager reverses or modifies, in favor of the appellant, the order of the director. After the heari the city manager shall uphold, modify, or reverse the decision. The written decision shall be sent by certified mail to the appellant or its legal counsel/representative at the appellant's business address. The city manager's decision shall be final.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-117. Payment of charges.

(a) Except as otherwise provided, all fees, charges and penalties established by this chapter are due and payable upon receipt of notice thereof. All such amounts are delinquent if unpaid forty-five (45) days after date of invoice.

(b) Any charge that becomes delinquent shall have added to it a penalty in accordance with the following:

(1) Forty-six (46) days after date of invoice, a basic penalty of ten (10) per cent of the base invoice amount, not to exceed a maximum of one thousand dollars ($1,000.00); and

(2) A penalty of one and one half (1.5) per cent per month of the base invoice amount and basic penalty shall accrue from and after the forty-sixth day after date of invoice.

(c) Any invoice outstanding and unpaid after ninety (90) days shall be cause for immediate initiation of permit revocation proceedings or immediate suspension of the FOG wastewater discharge permit.

(d) Penalties charged under this section shall not accrue to those invoices successfully appealed, provided the city receives written notification of said appeal prior to the payment due date.

(e) Payment of disputed charges is still required by the due date during the city review of any app submitted by permittees.

(f) Collection of delinquent accounts shall be in accordance with the city's policy resolution establishing

procedures for collection of delinquent obligations owed to the city, as amended from time to time by the city council. Any such action for collection may include an application for an injunction to prevent repeated and recurring violations of this chapter.

(Ord. No. 1065, § 1, 12-13-04.)

Sec. 13-118. Judicial review.

(a) Pursuant to section 1094.6 of the California Code of Civil Procedure, the city hereby enacts this part to limit to 90 days following final decisions in adjudicatory administrative hearings the time within which an action can be brought to review such decisions by means of administrative mandamus.

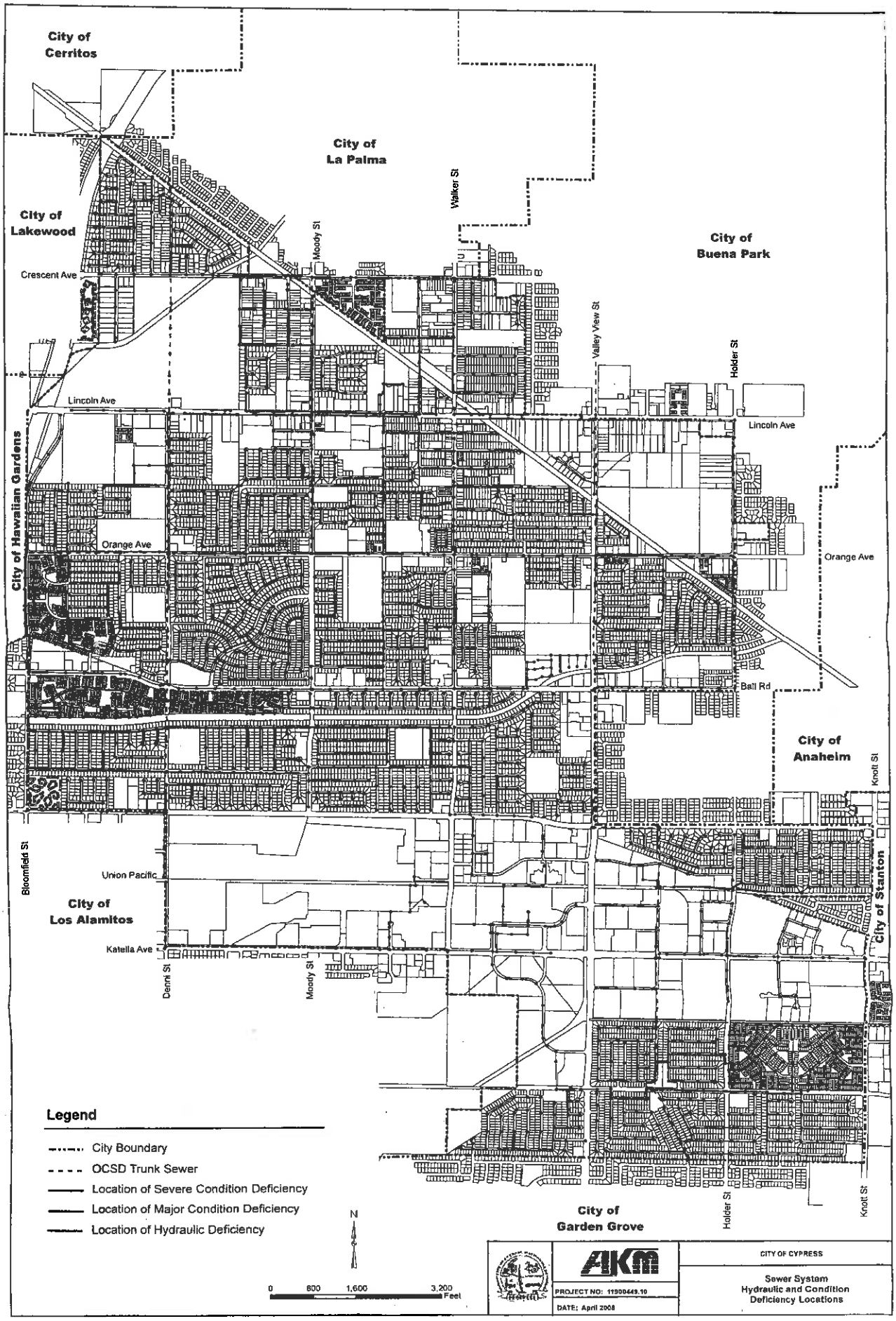
(b) Notwithstanding the foregoing, and pursuant to Government Code Section 54740.6, judicial review of a final order of the city manager or the director imposing administrative civil penalties pursuant to this chapter may be made only if the petition for writ of mandate is filed not later than the thirtieth day following the day on which such order becomes final.

(Ord. No. 1065, § 1, 12-13-04.)

OPERATION AND MAINTENANCE PROGRAM ATTACHMENTS

1. Attachment 3.1: City's Sewer Map
2. Attachment 3.2: Sanitary Sewer Cleaning and Maintenance Log Sheet
3. Attachment 3.3: Executive Summary of Sewer Master Plan Update
4. Attachment 3.4: Map of CCTV Locations

Attachment 3.1


City of Cerritos
City of La Palma
City of Lakewood
City of Buena Park
City of Hawaiian Gardens
City of Los Alamitos
City of Anaheim
City of Stanton
City of Garden Grove
Walker St
Moody St
Valley View St
Holder St
Crescent Ave
Lincoln Ave
Orange Ave
Ball Rd
Knott St
Bloomfield St
Union Pacific
Katella Ave
Denni St
Legend
City Boundary
OCSD Trunk Sewer
Location of Severe Condition Deficiency
Location of Major Condition Deficiency
Location of Hydraulic Deficiency
N
0 800 1,600 3,200 Feet
AKM
PROJECT NO: 115000649.10
DATE: April 2008
CITY OF CYPRESS
Sewer System Hydraulic and Condition Deficiency Locations

Attachment 3.2

City of Cypress

PW-82 - Sanitary Sewer Cleaning and Maintenance

Crew m

Location/MH #	Main Size	A	Materials removed from manhole	B	C	D	Footage cleaned	E	F	G	Remarks

Entered by: *Date:* Total Feet Cleaned:

CODES

A: MH Condition Code
- *0 - Normal*
- *1 - Loose cover*
- *2 - Repair/Modify or Other*
- *3 - Top buried*

B: Flow Code
- *0 - Normal*
- *1 - Trickle*
- *2 - Flooded*
- *3 - Other*

C: Odor Code
- *0 - Normal*
- *1 - Stagnation*
- *2 - Petroleum*
- *3 - Chemical*
- *4 - Other*

D: Pest Code
- *0 - Normal*
- *1 - Rodents*
- *2 - Insects*
- *3 - Alligators*

E: Found in line:
- *0 - None*
- *1 - Grease*
- *2 - Sand*
- *3 - Roots*
- *4 - Eggshells*
- *5 - Other*

F: Cause Code
- *0 - None*
- *1 - Special Maint.*
- *2 - Emergency*
- *3 - Hotspots*
- *4 - Other*

G: Activity Code
- *0 - Line cleaning*
- *1 - Manhole inspect.*
- *2 - Dye test*
- *3 - Manhole repair*
- *4 - Insect spraying*
- *5 - Other*

Attachment 3.3

Section 1

EXECUTIVE SUMMARY

1-1 Introduction

Background

The City of Cypress (City) existing wastewater collection system is made up of a network of gravity sewers, one pump station and one sewer force main. The gravity system consists of approximately 101 miles of pipe and 2,350 manholes and cleanouts. The system also includes approximately 14,213 service laterals. The gravity sewers are constructed of vitrified clay pipe with sizes ranging from 6-inch to 21-inch in diameter. The majority of the system was constructed during the late 1950's, 1960's, and 1970's.

1-2 Study Area

Location

The City of Cypress is located in the northwestern portion of Orange County, California adjacent to Los Angeles County. The City's regional location is depicted in Figure 3-1. The City encompasses 6.7 square miles of residential, commercial, and industrial land. Neighboring cities include Cerritos and La Palma to the north; Buena Park, Anaheim and Stanton to the east; Garden Grove and Los Alamitos to the south; and Long Beach, Hawaiian Gardens, and Lakewood to the west.

Topography

The study area is very flat, with a general slope of about 0.2 percent. The highest ground elevation is approximately 60 feet above mean sea level (amsl) in the northeast corner of Cypress College. The lowest ground elevation is approximately 25 feet amsl at the intersection of Cerritos Avenue and Bloomfield Avenue in the southwest corner of the City.

Climate

The climate in the area is typical of Southern California with generally mild temperatures, virtually no days below freezing, and approximately 340 days of sunshine per year. The average annual rainfall in the City is approximately 13 inches (Orange County Public Facilities and Resources Department Hydrologic Data). Most of the rainfall occurs between the months of November and March.

Land Use

The City, consisting primarily of single family neighborhoods intermixed with general neighborhood commercial uses, is nearing buildout. The majority of the large vacant parcels are in the Cypress Business Park along Katella Avenue in the southern portion of the City. There is a specific plan for each of the business centers in this area. These include the Cypress Business and Professional Center, Cypress Corporate Center, Cypress View Limited, McDonnell Center, Warland/Cypress Business Center, and Lusk Company Industrial Park. The major commercial areas are located along Lincoln Avenue with a variety of commercial uses, such as retail centers, and service-oriented business offices. Other commercial areas are located along major roads such as Valley View Street, Ball Road, and Cerritos Avenue.

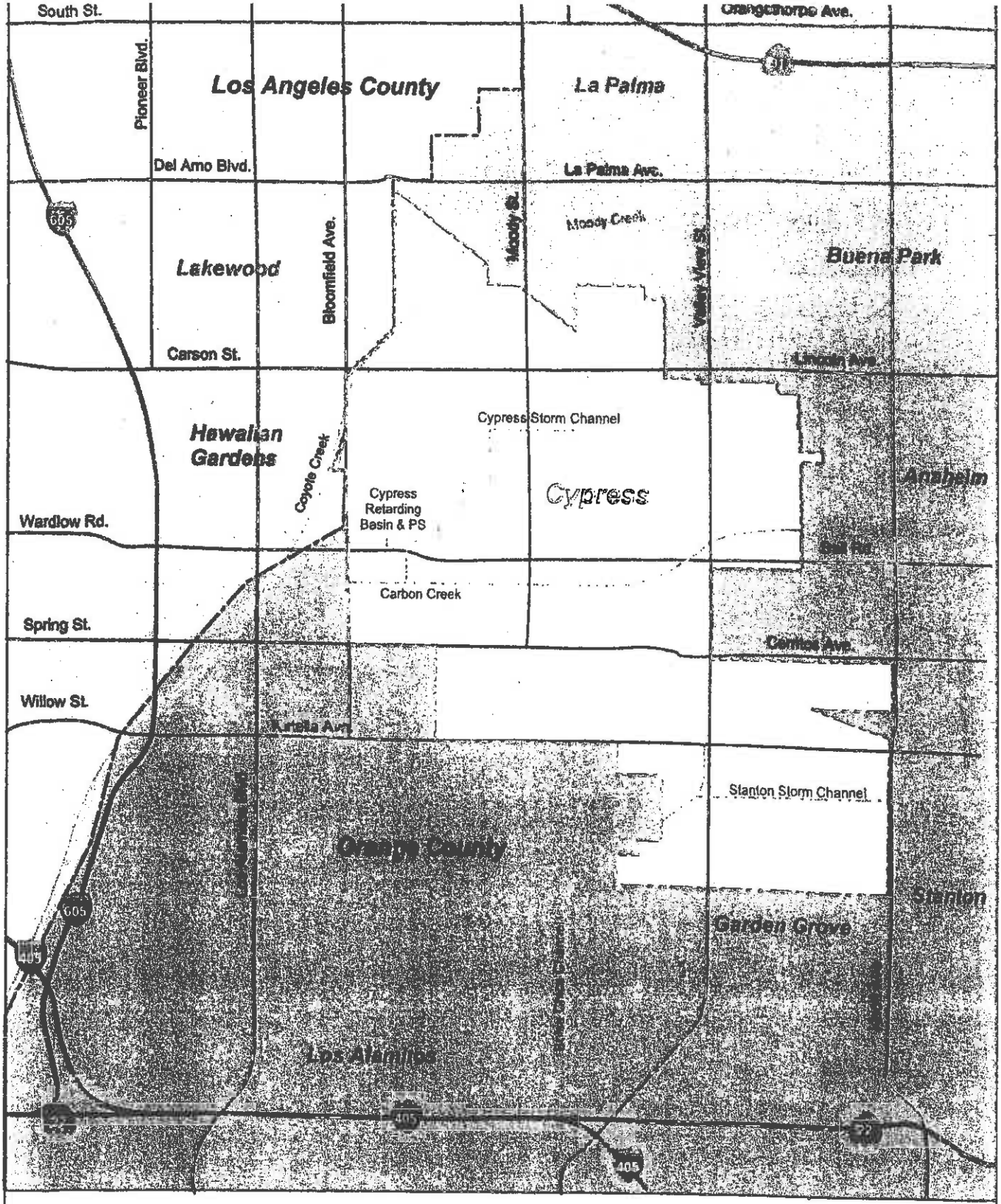

South St.
Orangethorpe Ave.
Pioneer Blvd.
Los Angeles County
La Palma
Del Amo Blvd.
La Palma Ave.
605
Lakewood
Bloomfield Ave.
Moody St.
Moody Creek
Valley View St.
Buena Park
Carson St.
Lincoln Ave.
Hawaiian Gardens
Coyote Creek
Cypress Storm Channel
Cypress
Cypress Retarding Basin & PS
Anaheim
Wardlow Rd.
Carbon Creek
Spring St.
Willow St.
Katella Ave.
Stanton Storm Channel
Orange County
Stanton
Garden Grove
Los Alamitos
405
22
Legend
City Boundary
County Boundary
N
NOT TO SCALE
AKM
PROJECT NO.: 1190771.00
DATE: August 2008
CITY OF CYPRESS SEWER MASTER PLAN
LOCATION MAP
FIGURE 3-1

Table 1-1 provides a summary of the study area land use categories under existing and ultimate conditions (combination of Table LU-1 and Table LU-10 of 2001 General Plan).

Table 1-1
Existing and Ultimate Land Use

Land Use Category	Existing Developed Area (AC)	Existing Vacant Area (AC)	Ultimate Developed Net Area (AC)	% of Total Net Area	Ultimate Dwelling Units (DU)	Ultimate Square Footage (TSF)
Low Density	1,160.70	1.30	1,162.00	27.3	7,555	-
Medium Density	238.84	1.16	240.00	5.6	3,840	-
High Density	187.36	4.64	192.00	4.5	4,130	-
Mobile Home Park	30.00	0.00	30.00	0.7	380	-
Residential Subtotal	**1,616.90**	**7.10**	**1,624.00**	**38.1**	**15,905**	
General Neighborhood Commercial	100.46	2.54	103.00	2.4	-	2,100
Business Park	16.68	1.32	18.00	0.4	-	400
Light Industrial	6.00	0.00	6.00	0.2	-	112
Commercial / Industrial Subtotal	**123.14**	**3.86**	**127.00**	**3.0**		**2,612**
Race Track	129.00	0.00.	129.00	3.0	-	-
Specific Plan	694.22	120.78	815.00	19.1	810* 700	15,000
Government	11.00	0.00	11.00	0.3	-	192
Education	273.00	0.00	273.00	6.4	-	4,800
Cemetery	126.38	17.62	144.00	3.4	-	-
Flood Control	71.00	0.00	71.00	1.7	-	-
Park	79.00	0.00	79.00	1.9	-	-
Golf Course	103.00	0.00	103.00	2.4	-	-
Railroad	48.00	0.00	48.00	1.1	-	-
Transportation	833.00	0.00	833.00	19.6	-	-
Community Services/ Facilities Subtotal	**2,267.60**	**138.40**	**2,506.00**	**58.9**	**1,510**	**19,992**
Total	**4,107.64**	**149.36**	**4,257.00**	**100.0**	**17,415**	**22,604**

* *Lincoln Avenue Specific Plan*

Population

The City's population increased steadily following its incorporation in 1956. The largest increase took place between 1960 and 1970 when the population grew from 1,753 to 31,026. During this time, single family development was occurring throughout the City.

In January 2008, the California State Department of Finance estimated the total number of occupied housing units in Cypress at 16,223. The total population was 49,541 persons. Therefore the estimated average number of persons per dwelling unit was 3.05. The total number of existing units was 16,611 and the corresponding vacancy rate was 2.34 percent.

1-3 Criteria

General

Establishing performance standards is an important part of evaluating existing wastewater collection systems, as it forms the basis for system analysis and system improvement recommendations. These standards include methodology for estimating wastewater design flows and minimum design standards for the collection system pipes, pump stations, and force mains.

Average wastewater flows can be reasonably estimated from land use and their corresponding unit flow factors. The results are then compared to measured flows. Peaking factors are needed for estimating peak dry weather and peak wet weather flows. Peak wet weather flows also include an allowance for inflow / infiltration (I/I).

Collection system design standards include minimum pipe size, minimum flow velocity, and depth of flow to pipe diameter ratio. Pump station criteria includes the capacity and number of pumps, wet well and force main sizes, redundancy, emergency power, remote monitoring capabilities, as well as safety and regulatory agency requirements. Finally, facility useful lives are needed for adequately scheduling replacement of the aging infrastructure.

Unit Flow Factors

Unit flow factors utilized in this study were developed based upon the land use data obtained from the City and results of the temporary flow monitoring study. The land use data consisted of the land use policy map (2001 General Plan) and the specific plan documents. Atlas maps, aerial photographs and field reviews supplemented this information. In the low and medium density residential areas, each parcel was assumed to be occupied by one dwelling unit.

The unit flow factors developed for this study are shown in Table 1-2.

Table 1-2
Unit Flow Factors

Land Use	Abbrev	Existing Unit Flow Factor	Ultimate Unit Flow Factor	Units
Low Density Residential	LDR	270	280	GPD/DU
Medium Density Residential	MDR	245	255	GPD/DU
High Density Residential	HDR	220	230	GPD/DU*
Mobile Home Park	MHP	220	230	GPD/DU
Business Park	Bus Park	110	120	GPD/TSF
Commercial	Comm	2680	2800	GPD/AC
Light Industrial	Lt Ind	2680	2800	GPD/AC
Elementary School	Sch	15	15	GPD/STU
Jr. High / High School	High Sch	25	25	GPD/STU
Parks	Parks	200	200	GPD/AC
Golf Course	Golf Course	200	200	GPD/AC

** Hydraulic model uses equivalent flow factors in GPD/AC, based upon an average density of 21.5 DU/AC (2001 General Plan)*

Peaking Factors

The wastewater unit flow factors shown in Table 1-2 are used to generate average dry weather flows (ADWF) entering the collection system. However, the adequacy of a sewage collection system is based upon its ability to convey the peak flows. Based upon the average and peak dry weather flow measurements, the following peaking relationship was selected for this study:

$$Q_{peak}\ (cfs) = 2.2 \times Q_{ave}(cfs)^{0.92}$$

This peaking relationship will lead to slightly higher values in comparison to the OCSD peaking formula, which utilizes a factor of 1.84 instead of 2.2. This is acceptable due to the fact that the City's service area is much smaller in comparison to the OCSD service area and will therefore experience higher peaks in flow.

The temporary flow monitoring data revealed higher peaking in areas with predominantly business park, industrial, and commercial uses. This study included additional analyses of these areas with a higher peaking factor. The results are incorporated in the recommendations of this master plan.

Sewer Design Criteria

Design criteria are established to ensure that the wastewater collection system can operate effectively under all flow conditions. Each pipe segment must be capable of carrying peak flows without surcharging the system. Low flows must be conveyed at a velocity that will prevent solids from settling and blocking the system.

At a minimum, all pipes should be 8 inches or larger in diameter and the velocity of flow should be greater than 2 feet per second at average flow. This velocity will prevent deposition of solids in the sewer. A velocity of 3 feet per second is desired at peak dry weather flow, to resuspend any materials that may have already settled in the pipe.

The design and analysis of gravity sewer systems is typically based upon the depth to diameter ratio (d/D). In this study, **existing** pipes are considered capacity deficient if the d/D is above 0.64 at peak dry weather flows. For **new construction**, pipes 15-inches in diameter and smaller should be designed with a d/D less than or equal to 0.50 at peak dry weather flows. Pipes 18-inches and larger should be designed with a d/D less than or equal to 0.64 at peak dry weather flows. All pipes should be designed with a d/D less than or equal to 0.80 at peak wet weather flows. This reserves a minimum of 25 percent of the pipe capacity for inflow and infiltration.

In the absence of a detailed I/I study, it is recommended that the peak wet weather flow be estimated as the larger of the two following equations:

1. Peak Wet Weather Flow (PWWF) = 1.35 x Peak Dry Weather Flow (PDWF)
2. Peak Wet Weather Flow (PWWF) = 3.10 x Average Dry Weather Flow (ADWF)

Pump Station Design Criteria

The performance of a wastewater pump station is of particular importance since a failure could have far reaching ramifications. It must therefore be reliable, sized with sufficient capacity, contain redundant equipment or backup, and be able to notify the appropriate personnel in the event of failure.

The wet well should be designed with sufficient capacity to prevent short cycles whereby the pumps frequently start and stop, yet small enough that it will regularly evacuate sewage from the wet well to prevent the wastewater from becoming septic. Two hours of storage at peak flow should be provided to allow response to a mechanical failure.

The pumps should be sized to efficiently handle the peak flows. A minimum of two pumps sized at the peak flow to the station should be provided so that sufficient standby capacity is available when one pump is removed for repairs.

The dry well should be well ventilated and provide unobstructed access to all equipment and have provisions for equipment removal.

The force mains should be selected to operate within a 3 feet per second to 5 feet per second velocity range, but should not be smaller than 4-inches in diameter.

The pump stations should incorporate redundant control systems for operation of the pumps. Telemetry equipment (a dialer, as a minimum) must be provided at all sewer pump stations.

An emergency power source should be provided to operate the pump station during outages of the primary power source. A standby generator with an automatic transfer switch is the preferred type of emergency power source. In addition, wet wells should include two hours of peak dry weather flow emergency storage for response time in mechanical failures.

Service Life of Pipe and Pump Station Equipment

In addition to the design criteria discussed in previous sections, the useful lives for which relatively trouble-free service can be expected are also of great importance when assessing an existing or future sewer system. Once the service life of a facility is exceeded, it becomes subject to failure and is often expensive to maintain. The determination of useful life can be difficult and depends on many different considerations including the following:

- Type of materials used and recorded performance of similar installations
- Velocities and flow rates expected in the system
- Chemical and biological conditions of the wastewater
- Construction methods and installation

However, the values listed in Table 1-3 are generally accepted as prudent planning criteria and are used as benchmarks for replacement recommendations in this study.

Table 1-3
Planning Criteria for Facility Useful Life

Facility	Description	Useful Life (Years)
Gravity Sewers:	Cast Iron Pipe (cip)	20
	Plastic Pipe	65
	Vitrified Clay Pipe (VCP)	75
Force Mains:	Asbestos-Cement Pipe (ACP)	40
	Ductile Iron Pipe (DIP)	40
	Plastic Pipe	30
Pump Stations:	Structure	60
	Piping	30
	Valving	20
	Mechanical	15
	Electrical	15

1-4 Existing Wastewater System

General Description

The City's existing wastewater collection system is made up of a network of gravity sewers and sewer force mains. The gravity system consists of approximately 101 miles of pipe and 2,350 manholes and cleanouts primarily constructed during the 1950's, 1960's, and 1970's. The system also includes approximately 14,213 service laterals.

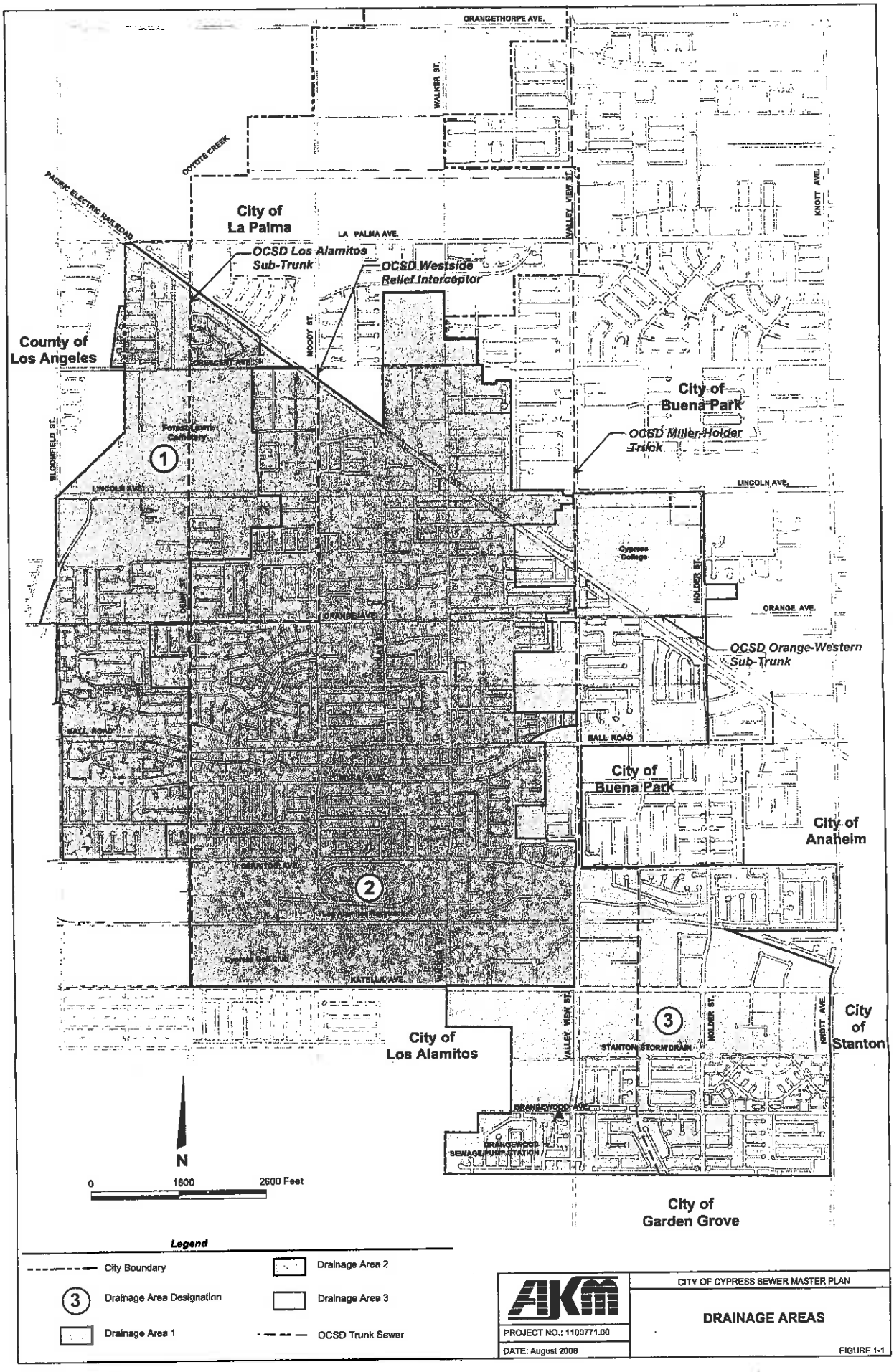
The gravity sewers are constructed of vitrified clay pipe with sizes ranging from 6-inch to 21-inch in diameter. Approximately 85 percent of the existing sewer pipes are 8-inch in diameter.

Drainage Areas

For this study, three drainage areas were delineated from review of the City's sewer atlas maps and record drawings. Each drainage area terminates at an Orange County Sanitation District (OCSD) facility. The drainage areas are shown on Figure 1-1.

Drainage Area 1, located in the northwestern portion of the City, covers approximately 788 acres of residential and commercial land uses. The sewers in Drainage Area 1 are tributary to OCSD's Los Alamitos Sub-Trunk in Denni Street, Orange Avenue, and Bloomfield Street.

Drainage Area 2, located in the central portion of the City, consists of approximately 2,050 acres of residential and commercial land uses. The sewers in Drainage Area 2 are tributary to OCSD's Westside Relief Interceptor in Moody Street, Orange Avenue, and Denni Street.


ORANGETHORPE AVE.
WALKER ST.
COYOTE CREEK
PACIFIC ELECTRIC RAILROAD
City of La Palma
LA PALMA AVE.
VALLEY VIEW ST.
KNOTT AVE.
OCSD Los Alamitos Sub-Trunk
OCSD Westside Relief Interceptor
County of Los Angeles
MOODY ST.
CRESCENT AVE.
City of Buena Park
OCSD Miller-Holder Trunk
BLOOMFIELD ST.
LINCOLN AVE.
Cypress College
HOLDER ST.
ORANGE AVE.
DENNI ST.
OCSD Orange-Western Sub-Trunk
BALL ROAD
MYRA AVE.
CERRITOS AVE.
KATELLA AVE.
City of Anaheim
City of Los Alamitos
STANTON STORM DRAIN
City of Stanton
ORANGEWOOD AVE.
ORANGEWOOD SEWAGE PUMP STATION
City of Garden Grove
1
2
3
N
0
1600
2600 Feet
Legend
City Boundary
Drainage Area Designation
Drainage Area 1
Drainage Area 2
Drainage Area 3
OCSD Trunk Sewer
AKM
PROJECT NO.: 1100771.00
DATE: August 2008
CITY OF CYPRESS SEWER MASTER PLAN
DRAINAGE AREAS
FIGURE 1-1

Drainage Area 3, located in the eastern portion of the City, covers approximately 1,427 acres of residential and commercial land uses. The sewers in Drainage Area 3 are tributary to OCSD's Miller-Holder Trunk or Orange-Western Sub-Trunk.

Orange County Sanitation District Wastewater Collection System

The City of Cypress service area lies within OCSD's Revenue Area 3. The four OCSD facilities located within the City are listed below:

- Los Alamitos Sub-Trunk
- Westside Relief Interceptor
- Miller-Holder Trunk
- Orange-Western Sub-Trunk

The sewage generated by the City of Cypress is carried out of the city by one of the aforementioned OCSD trunk sewers. The flow then travels south and west through OCSD's system to Treatment Plant No. 1, located in the City of Fountain Valley or Treatment Plant No. 2, located in the City of Huntington Beach.

Orangewood Sewage Pump Station

The original pump station was constructed in 1969 as a wet well / dry well facility. It was converted to a submersible type pump station in 1990. At this time, the original wet well was rehabilitated and remodeled, including an epoxy/polyurethane lining. The original dry well structure was abandoned. The wet well is a 6-foot diameter manhole, approximately 23 feet deep. The high water level is set at 66 inches.

The station has two ESSCO torque flow, 100 percent recessed impeller, submersible pumps. Each pump is rated at 510 gpm and 22.7 feet of total dynamic head at 1170 RPM. They are operated by 7.5 horsepower submersible motors. Normally, one pump operates at a time. The second pump is activated only in emergencies if one pump cannot maintain the maximum level in the wet well. The pumps are alternated so that an approximately equal operating duration can be obtained for each pump.

Sewage is pumped east in Orangewood Avenue via an 8-inch asbestos cement pipe (ACP) force main. The flow discharges to a manhole located in Orangewood Avenue at Luzon Street. It is then conveyed further east by gravity through local sewers to OCSD's Miller-Holder Trunk.

Siphons

The City's sewer system includes 19 siphons, which were typically constructed at large utility crossings. Many of these siphons were identified as Hot Spots in the 1993 Hot Spot Sewer Study conducted by Lockman and Associates. The primary problem with the siphons is the fact that they often plug up with grease and require routine maintenance.

1-5 System Analysis

Hydraulic Model

A mathematical model (SWAN) of the gravity collection system was prepared for evaluating its design hydraulic capacity. The Manning's Equation is used for depth of flow calculations in gravity sewer pipes.

The sewer system is modeled by entering data for pipe diameters, lengths, slopes, and roughness coefficients as well as land use zoning classifications. The model uses the average flows for peaking as specified by the user. Pumped flows and measured flows can be entered at any manhole as a fixed flow.

Appendix 1 contains the sewer system database which includes pipe location, size, length, slope, and material. Appendix 2 and 3 of this study contain printouts of the results of analyses of the existing and ultimate sewer collection systems. The appendices can be found on the CD accompanying this report.

Capacity Analysis

The analysis of the City's existing gravity sewer system was based upon the calculated peak dry weather flows. Any segment of sewer pipe with a depth to diameter ratio (d/D) of 0.64 or more was considered to be hydraulically deficient. This allows for 25 percent above the peak dry weather flow for inflow and infiltration based on the assumption that the maximum capacity of a circular pipe will occur when d/D = 0.82 rather than the theoretical maximum that occurs at d/D = 0.938.

Separate analyses were run using the existing and ultimate unit flow factors. Each analysis is based upon the existing sewer system and the current land use zoning. The hydraulic models assume that the City is fully developed. The total length of sewer found to be capacity deficient under existing and ultimate conditions was 24,855 and 25,004 linear feet, respectively. This is approximately 5 percent of the total system.

Hot Spots

In September 1993, Lockman and Associates completed a Hot Spot Sewer Study for the City. The results identified forty-one Hot Spots, where there was a recurring problem with the sewer requiring regular maintenance approximately every three months.

The Hot Spot Sewer Study categorized each of the problems into one of the following:

1. Lack of scouring velocity in gravity sewer line
2. Lack of scouring velocity in siphons
3. Settlement and infiltration/inflow due to high groundwater level
4. 180 degree change in direction of flow
5. Offset joints, sags, and cracks at joints
6. Roots, rubber gaskets sticking out

Problem Category 1 and 2

A maintenance program, which involved a yearly thorough cleaning of each applicable hot spot, was recommended to take care of the lack of scouring velocity in gravity sewers and siphons. It was also suggested that the City consider imposing a grease trap requirement for commercial properties and apartment complexes.

Problem Category 3

Slip lining or injecting grout at the joints was recommended for those hot spots with inflow and infiltration problems. Settlement problems must be analyzed on a case by case basis.

Problem Category 4

Realignment or redesign of the sewer system was recommended in areas with 180 degree change in flow direction.

Problem Category 5

Pipe reconstruction was recommended for structural deficiencies such as offset joints, sags, and cracks.

Problem Category 6

Removal and application of grout in joints from the inside of the pipe was the recommended solution for roots or rubber gaskets sticking out of the pipe joints.

Maintenance

The sewer system is maintained by the City's Public Works Maintenance Division. The maintenance staff for the sewers primarily consists of a two person crew that is responsible for routinely cleaning sewer lines, checking equipment and recording runtimes at the Orangewood Sewage Pump Station, and responding to any emergency calls.

A comprehensive maintenance program is an important tool in assuring reliable system operation. This not only includes regular inspections and preventative maintenance, but also good record keeping. Accurate records are the backbone of any maintenance operation. They can be used for many purposes including: scheduling regular maintenance activities; allocating work power; budgeting; pinpointing persistent problems; tracking equipment performance and maintenance history; and the identification of equipment which may be showing signs of failure. The Sewer Geographic Information System prepared as part of this study can be used for this purpose.

On an average day, the City currently has a two person crew that tends to the sewer system maintenance. Two to three days a week, this crew cleans portions of the gravity sewer system. Review of recent maintenance records indicates that the City cleans an average of 264,000 feet of gravity sewer pipe per year. This is equivalent to 50 percent of the entire system.

Common problems encountered during the cleaning of the sewers are as follows:

1. Egg shells and sand
2. Mineral deposits
3. Grease
4. Roaches

It is recommended that the cleaning program be based upon the historical information and CCTV inspection reports. The siphons should be cleaned more frequently than the remainder of the system, but no less than three times per year. Immediate attention should be given to areas of customer complaints.

Closed Circuit Television (CCTV) Inspections

The City of Cypress established a program to CCTV inspect its entire collection system in two phases. The first phase was completed in 2003 when the sewer capacity was also analyzed. The second phase was completed in 2007. The total length of inspections completed was 522,955 feet or 97.7 percent of the entire gravity system (total length 535,274 feet).

The remaining 2.3 percent of the system includes reaches that were not accessible to the camera. Common reasons for this inaccessibility were major calcium deposits, heavy debris, high water levels, siphons, cleanouts (reverse set-up not possible) and protruding laterals. Siphons were also not inspected due to the risk of losing valuable camera equipment. The City's sewer system includes 19 siphons with a total length of 1,647 feet.

The first phase of CCTV inspection included about 94,123 feet of pipe and was performed by Empire Pipe Cleaning and Equipment, Inc. (EPCE) between December 2, 2002 and February 7, 2003. The inspected facilities were scattered throughout the City and included most of the large sewers in main arterials, as well as some of the smaller in-tract sewers.

The second phase of work included the remainder of the system and was performed by National Plant Services, Inc. (NPSI) primarily between January 31, 2007 and July 2, 2007. Additional inspections were completed in December 2007. Phase II included inspections of approximately 428,832 feet of pipe.

The Phase II inspections follow the National Association of Sewer Service Company (NASSCO), Pipeline Assessment and Certification Program (PACP) coding procedures, which is now accepted industry wide as the standard for sewer pipeline condition assessment. The Phase I inspection reports and data were converted to PACP coding as much as possible so that all reaches could be assessed on a consistent basis and rated for prioritization.

The PACP condition grading system assigns a condition grade for structural defects and operation and maintenance defects for each reach of pipe. The grade provides the ability to quantitatively measure the difference in pipe condition between one inspection and subsequent inspections, and to prioritize among different pipe segments. To help prioritize the condition of sewer system, the pipe rating is calculated by multiplying the number of occurrences of each defect by its condition grade and summing the products. Ratings are calculated separately for structural defects and operation and maintenance (O&M) defects. To indicate the distribution of defect severity, the pipe rating index is calculated by dividing the pipe rating by the number of defects. Rating indexes are calculated for structural and O&M defects separately and are included in the Database Summary.

The Inspection Report Database Summary (Database Summary) was developed utilizing the CCTV inspection written reports. The Inspection Report Database Summary is included in Appendix 4 (sorted by condition ranking) and Appendix 5 (sorted by upstream manhole ID). The appendices can be found on the CD accompanying this report.

Condition Assessment

The majority of the City's sewer system was constructed during the late 1950's, 1960's and 1970's. Twenty-one percent (21%) of the sewers were constructed in the late 1950's. Fifty-four percent (54%) were constructed during the 1960's, and seventeen percent (17%) were constructed during

the 1970's. As a system, its average age of approximately forty (40) years is far short of the expected average useful life of 75 years for VCP sewers.

The most prevalent problems seen throughout the City's sewer system are calcium deposits, sags, and offsets. It should be noted that many slightly separated joints were not always recorded in the CCTV written reports, due to the difficulty of identifying these problem areas without stopping the camera at each and every joint. These separated joints also seem to contribute to the widespread problem of infiltration and calcium deposits.

The best available information on the system condition is provided by the CCTV inspection recordings. For this Master Plan study, the condition of the sewer system was evaluated through review of the written CCTV reports and detailed review of 237 reaches of pipe (58,925 feet or 11 percent of the sewer system).

While the PACP pipe rating and the pipe rating index are useful when identifying the reaches in poor condition, they cannot be solely used when prioritizing a sewer system. The priorities are 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 priorities are determined by reviewing the critical reaches in further detail.

The reaches chosen for detailed review were those with defects that are likely to cause sewer overflows. They were selected based upon a review of the Inspection Report Database Summary. These defects include the following:

- The CCTV camera was blocked during inspection of the sewer reach.
- A crushed pipe, hole in pipe, broken pipe, or major offset joint was reported in the sewer reach.
- The sewer reach had multiple major calcium deposits and/or multiple major sags and high water levels.
- The sewer reach had major root intrusion or debris which could block the flow.
- The sewer reach had a high PACP pipe rating index.

Rehabilitation / Replacement Projects

The purpose of CCTV inspections and this study is to determine the condition of the City's existing gravity sewers, and formulate a rehabilitation plan for the defective sewers. The defects which will most-likely cause sanitary sewer overflows and exfiltration will be given the highest ranking. 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 includes the structural defects of deformed pipe, hole in pipe, broken pipe, and large joint offsets. Pipes with heavy calcium, roots and debris which potentially cause blockages and lead to a sanitary sewer spill are also included.

b. Major Condition – This category primarily includes structural defects of multiple fractures, large and medium joint offsets and major sags. Pipes with a large number of cracks, moderate calcium, roots and debris are also included.

c. Moderate Condition – Pipes in this category have fractures, cracks, small and medium joint offsets, and sags.

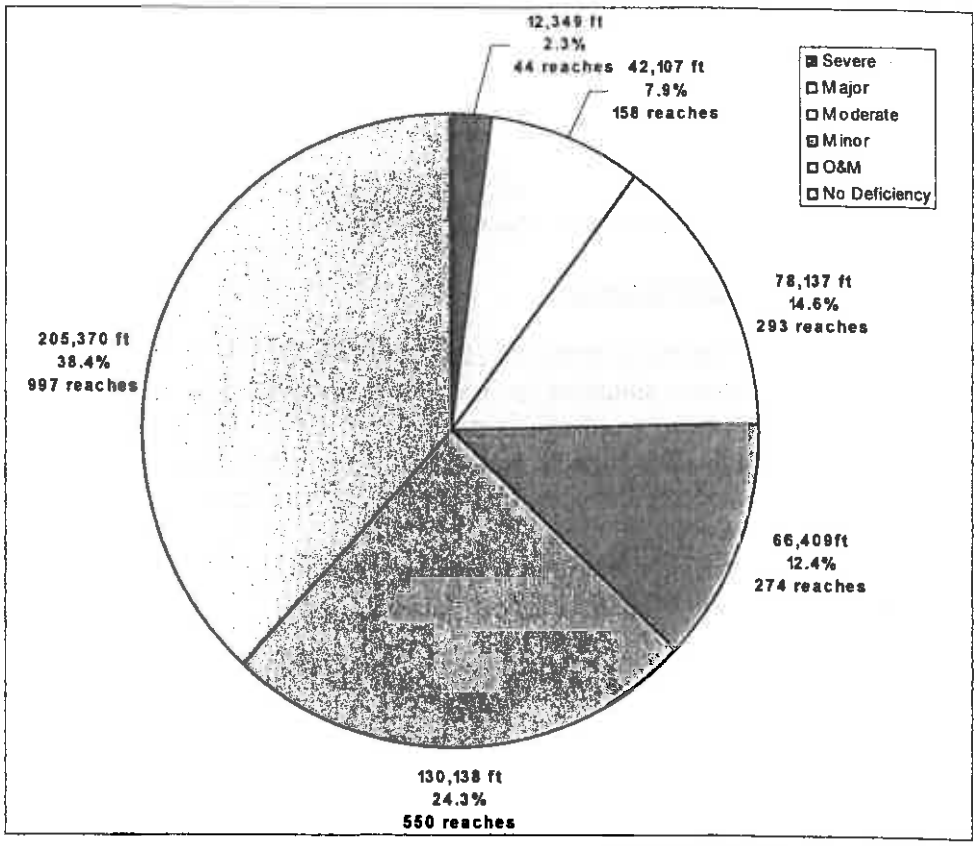
d. Minor Condition – Pipes in this category have slight sags, cracks, and small joint offsets.

e. O&M – This condition is for operational and maintenance problems and construction feature defects. There are no structural defects.

f. No Deficiency – This condition is for pipes without structural, operation and maintenance, or construction feature defects.

Figure 1-2 breaks down the condition of the inspected sewer reaches by priority designation. The length of pipe used on Figure 1-2 is the recorded length. This accounts for the total length even if the inspection could not be completed due to a defect. The sewers categorized as severe and major require the most immediate attention and comprise approximately 10 percent of the entire system.

Figure 1-2
Condition Priority Distribution



The sewer collection system should be free of structural defects that may result in the collapse of pipes and blockage of the wastewater flows. Portions of the system with significant structural damage should be improved as soon as possible.

The sewer collection system pipes should be maintained free of heavy roots, grease, and calcium deposits that may impede unobstructed flow of wastewater. This may require chemically treating and cutting roots, as well as a periodic maintenance program that will remove grease from the sewers. Pipes with heavy calcium deposits should be considered for replacement.

The City has an existing Fats, Oils and Grease (FOG) ordinance that requires all Food Service Establishments (FSE) to install, operate, and maintain an approved type and adequately sized grease interceptor. Consideration should be given to requiring all major grease contributors to install grease interceptors, including apartment complexes. The City's existing ordinance also has maintenance requirements for the grease interceptors and specifies violations and an enforcement program.

Rainfall Dependent Inflow and Infiltration (RDII) Analysis

Rainfall Dependent Inflow & Infiltration (RDII) analysis is conducted to identify the portions of the system with large inflow and infiltration rates during rainfall events. Recommendations for these areas of high RDII contribution are made to reduce the peak wet weather flows, which will also reduce pipe capacity requirements and transport and treatment costs. Additionally, future regional treatment capacity and outfall facility construction requirements may be eliminated by reducing RDII in the satellite systems.

For RDII analysis, flow monitors were installed by ADS Environmental Services at eight (8) representative locations, shown in Table 1-4 in the City. The monitors were in place over a six week period from February 11, 2003 through April 3, 2003.

Table 1-4
Flow Monitoring Locations and Basin Statistics

Site ID	Basin ID	Flow Monitor Location	Total Sewer Length (ft)	Total Basin Area (acres)
CYP01	1	Electric Street north of Lincoln Avenue	4,307	35
CYP02	2	Ball Road west of Larwin Avenue	48,725	287
CYP03	3	Avendia Granada east of Denni Street	14,461	70
CYP04	4	Larwin Avenue east of Bloomfield Street	25,122	33
CYP05	5	Myra Avenue east of Denni Street	37,182[a]	199[b]
CYP06	6	Samoa Street at Orangewood Avenue	11,950	71
CYP07	7	San Andres Avenue and Jamaica Street	12,315	46
CYP08	8	Cerritos Avenue at Aurelia Avenue	1,781	22

Rainfall

There were three significant storm events measuring greater than 0.5 inches of rainfall during the monitoring period, which occurred on February 11, February 24, and March 15, 2003.

The largest of the three storm events occurred on March 15, 2003 and can be considered a 5 year frequency storm event per the Orange County Hydrology Manual (*October 1986, Orange County Environmental Management Agency*). Table 1-5 displays the recorded rainfall and duration of the three storm events.

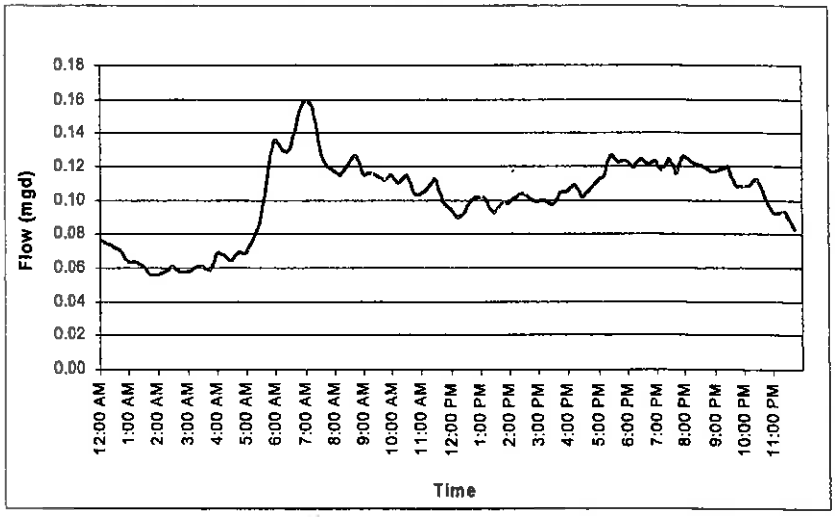
Table 1-5
Rain Gauge Statistics

Storm Events	Total Rainfall (in)	Duration (hrs)
2/11/2003	3.07	53
2/24/2003	1.18	13
3/15/2003	3.43	21

Dry Days

Dry days were selected during the monitoring period to determine the average daily dry weather flows for each of the basins. The criterion used to select dry days was that no rain fell on or two days prior to that day. An example of a typical dry day hydrograph is displayed on Figure 1-3.

Figure 1-3
Dry Weekday Hydrograph - Basin 6 (CYP06)



Base Infiltration

Base infiltration is the rate of flow entering the system from the surrounding soil. It is usually caused by high groundwater levels, and occasionally by leaking water pipes. It is considered to be constant during dry weather. The base infiltration for each basin was estimated by multiplying the minimum daily dry weather flow by a factor of 0.88. Base infiltration would have to be adjusted in basins consisting of a moderate to high number of users that operate during the nighttime hours.

Table 1-6 displays the average and minimum dry weekday flows, estimated base infiltration, and base infiltration as a percentage of daily dry weather flows for each basin. Base infiltration exceeding 30 percent of average daily flow is considered excessive and recommended for further investigation by performing flow isolations or CCTV recordings of the sewers in the basin. Basins 1, 2, 4, 5, and 6 showed base infiltration greater than 30 percent. Groundwater levels in Basins 1, 2,

4, and 5 vary from about 5 feet to 10 feet below ground surface. Some of the sewers in these basins are below the groundwater levels, which supports the higher base infiltration quantities.

Table 1-6
Base Infiltration

Basin ID	Flow Monitor Location	Total Basin Area (acres)	Average Dry Weekday Flow (mgd)	Minimum Dry Weekday Flow (mgd)	Base Infiltration (mgd)	% Base Infiltration
1	Electric St. north of Lincoln Ave.	35	0.07	0.03	0.0264	37.7%
2	Ball Rd. west of Larwin Ave.	287	0.34	0.13	0.1144	33.6%
3	Avendia Granada east of Denni Street	70	0.10	0.02	0.0176	17.6%
4	Larwin Avenue east of Bloomfield Street	33	0.07	0.03	0.0264	37.7%
5	Myra Avenue east of Denni Street	199	0.25	0.09	0.0792	31.7%
6	Samoa Street at Orangewood Avenue	71	0.10	0.06	0.0528	52.8%
7	San Andres Avenue and Jamaica Street	46	0.10	0.03	0.0264	26.4%
8	Cerritos Avenue at Aurelia Avenue	22	0.03	0.00	0.0035	11.7%

Analysis

A comparison of a dry day hydrograph and a storm day hydrograph is shown on Figure 1-4. The total RDII in each basin was determined by calculating the difference between dry day hydrograph and the storm day hydrograph or the storm day flows minus the dry day flows. The storm event days consist of the day in which the rain event occurred and the two following recovery days. In order to accurately determine the RDII contribution from the storm event, any increased flows preceding a storm event due to antecedent rainfall conditions were taken into account and used to adjust the average dry day values. This adjustment is referred to as pre-compensation.

Storm events 1 and 2 occurred on weekdays, while storm event 3 occurred on the weekend. Total RDII quantities for the eight basins are shown in Table 1-7.

Figure 1-4
Dry Day and Storm Day Hydrographs – Basin 2 (CYP02)

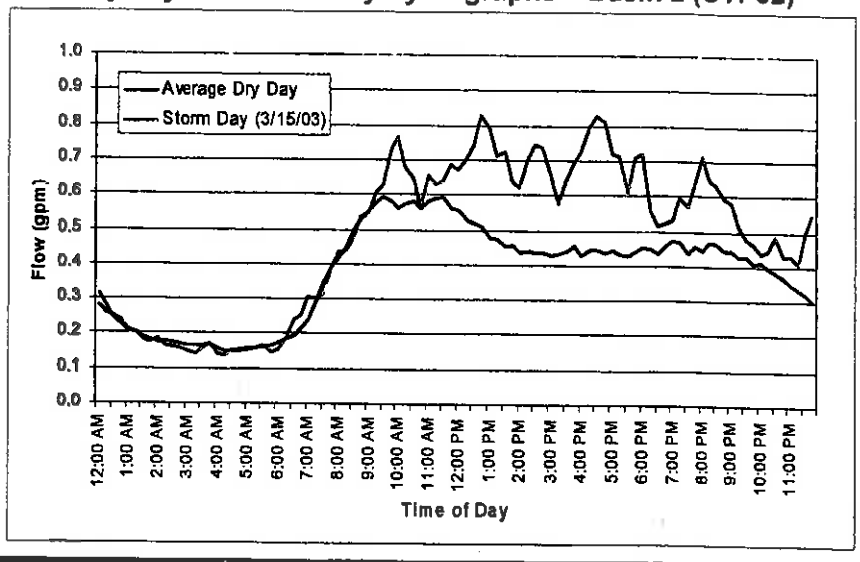


Table 1-7
Total Rainfall Dependent Inflow and Infiltration

Basin ID	Flow Monitor Location	Total Basin Area (acres)	Total Sewer Length (ft)	Average Dry Weekday Flow (mgd)	Average Dry Weekend Flow (mgd)	RDII Storm 1 2/11/2003 (mg)	RDII Storm 2 2/24/2003 (mg)	RDII Storm 3 3/15/2003 (mg)
1	Electric St. north of Lincoln Ave.	35	4,307	0.07	0.08	0.044	0.006	0.042
2	Ball Rd. west of Larwin Ave.	287	48,725	0.34	0.38	0.110	0.046	0.287
3	Avendia Granada east of Denni St.	70	14,461	0.10	0.12	0.014	0.017	0.011
4	Larwin Ave. east of Bloomfield St.	33	25,122	0.07	0.07	0.012	0.004	0.015
5	Myra Ave. east of Denni St.	199	37,182	0.25	0.28	0.054	0.025	0.200
6	Samoa St. at Orangewood Ave.	71	11,950	0.10	0.11	0.014	0.010	0.033
7	San Andres Ave. and Jamaica St.	46	12,315	0.10	0.11	0.011	0.000	0.014
8	Cerritos Ave. at Aurelia Ave.	22	1,781	0.03	0.02	0.023	0.013	0.034

The total RDII in each basin for Storm 3 (the largest of the three storms) was analyzed to determine the percentage of the RDII due to inflow and/or infiltration.

The estimated inflow/fast response infiltration was determined by calculating the total RDII that entered the system from the beginning of the storm event to two (2) hours after the storm ended. The contribution of RDII from infiltration was determined by subtracting the inflow/fast response infiltration from total RDII. Table 1-8 shows the estimated percentage of RDII that was attributed to inflow and infiltration.

Table1-8
Calculated Inflow and Infiltration for Storm 3

Basin ID	Flow Monitor Location	Total Basin Area (acres)	Total RDII (mg)	Inflow/Fast Response Infiltration (% total RDII)	Infiltration (% total RDII)
1	Electric Street north of Lincoln Avenue	35	0.042	0.038 (90%)	0.004 (10%)
2	Ball Rd. west of Larwin Ave.	287	0.287	0.153 (53%)	0.134 (47%)
3	Avendia Granada east of Denni Street	70	0.011	0.002 (18%)	0.009 (82%)
4	Larwin Avenue east of Bloomfield Street	33	0.015	0.007 (47%)	0.008 (53%)
5	Myra Ave. east of Denni Street	199	0.200	0.089 (44%)	0.111 (56%)
6	Samoa Street at Orangewood Avenue	71	0.033	0.013 (59%)	0.020 (61%)
7	San Andres Avenue and Jamaica Street	46	0.014	0.014 (100%)	0.000 (0%)
8	Cerritos Ave. at Aurelia Avenue	22	0.034	0.018 (53%)	0.016 (47%)

The basins were normalized by dividing the total RDII by the total length of sewers in the basin. This allows a common basis to compare the different sized basins. RDII quantities normalized by the total length of sewers are shown in Table 1-9.

Table 1-10 displays the RDII quantities normalized by basin size and total rainfall. The results are presented in percentage of rainfall entering the sewers in each basin. These values were determined by dividing the total RDII by the estimated total rainfall that fell on the basin.

Table 1-9
RDII Normalized by Total Length of Sewers in Basin

Basin ID	Flow Monitor Location	Total Sewer Length (ft)	RDII Normalized by Length of Sewers			
			Storm 1 2/11/2003 (g/lineal ft)	Storm 2 2/24/2003 (g/lineal ft)	Storm 3 3/15/2003 (g/lineal ft)	Ranking (based on Storm 3)
1	Electric Street north of Lincoln Avenue	4,307	10.22	1.39	9.75	2
2	Ball Road west of Larwin Avenue	48,725	2.26	0.94	5.89	3
3	Avendia Granada east of Denni Street	14,461	0.97	1.18	0.76	7
4	Larwin Avenue east of Bloomfield Street	25,122	0.48	0.16	0.6	8
5	Myra Avenue east of Denni Street	37,182	1.45	0.67	5.38	4
6	Samoa Street at Orangewood Avenue	11,950	1.17	0.84	2.76	5
7	San Andres Avenue and Jamaica Street	12,315	0.89	0	1.14	6
8	Cerritos Avenue at Aurelia Avenue	1,781	12.91	7.3	19.09	1

Table 1-10
RDII Normalized by Basin Size and Total Rainfall

Basin ID	Flow Monitor Location	Total Basin Area (acres)	% RDII Normalized by Basin Size and Total Rainfall			
			Storm 1 2/11/2003 (% rainfall)	Storm 2 2/24/2003 (% rainfall)	Storm 3 3/15/2003 (% rainfall)	Ranking (based on Storm 3)
1	Electric Street north of Lincoln Avenue	35	1.50%	0.50%	1.30%	2
2	Ball Road west of Larwin Avenue	287	0.50%	0.50%	1.10%	4
3	Avendia Granada east of Denni Street	70	0.20%	0.80%	0.20%	8
4	Larwin Avenue east of Bloomfield Street	33	0.40%	0.40%	0.50%	5
5	Myra Avenue east of Denni Street	199	0.50%	0.70%	1.30%	3
6	Samoa Street at Orangewood Avenue	71	0.20%	0.40%	0.50%	6
7	San Andres Avenue and Jamaica Street	46	0.30%	0.00%	0.30%	7
8	Cerritos Avenue at Aurelia Avenue	22	1.30%	1.90%	1.70%	1

It is typically recommended that basins showing greater than 5 percent of rainfall entering the sewer system be further investigated for points of inflow and infiltration entry. All of the basins studied in the City are below this 5 percent criterion for the observed storm events.

Basins 1, 2, 5, and 8 showed the most significant response to RDII in regards to both gallons of RDII per lineal foot and percentage of rainfall entering the system.

Site Hydraulics

The hydraulic conditions at each of the flow monitoring sites were analyzed and are shown in Table 1-11.

Table 1-11
Site Hydraulics

Site ID	Flow Monitor Location	Total Basin Area (acres)	Ave Dry Weekday Flow (mgd)	Peak Wet Weather Flow (mgd)	Dia (in)	Peak Dry d/D	Peak Wet d/D	Peak Wet Weather Flow/ Average Dry Day Flow
CYP01	Electric St. north of Lincoln Ave.	35	0.065	0.235	8	0.42	0.79	3.62
CYP02	Ball Rd. west of Larwin Ave.	287	0.342	0.868	15	0.41	0.47	2.54
CYP03	Avendia Granada east of Denni St.	70	0.095	0.299	10	0.22	0.25	3.15
CYP04	Larwin Ave. east of Bloomfield St.	33	0.068	0.22	12	0.3	0.34	3.24
CYP05	Myra Ave. east of Denni St.	199	0.28	0.636	12	0.56	0.64	2.27
CYP06	Samoa St. at Orangewood Ave.	71	0.101	0.249	8	0.31	0.43	2.47
CYP07	San Andres Ave. and Jamaica St.	46	0.099	0.233	8	0.56	0.58	2.35
CYP08	Cerritos Ave. at Aurelia Ave.	22	0.034	0.17	8	0.39	0.44	5

At each of the eight flow monitoring sites, the peak wet weather d/D remained below 1.0 meaning that none of the sites experienced surcharge conditions during the monitoring period.

Conclusions

Flow monitoring sites CYP01, CYP02, CYP05, and CYP08 showed the most significant RDII response. In addition, it can be seen that the estimated base infiltration in Basins 1, 2, 4, 5, and 6 is greater than 30 percent of average dry weather flow. Closed circuit television logs of the sewers showed major calcium deposits in Basins 1, 2, 5, 6, and 7. The calcium formations are most likely due to infiltration, which concurs with the high base infiltration estimates found in this RDII analysis. The sewers in Basin 4 are mostly below the groundwater levels, which also supports the high base infiltration in this area.

None of the dry and wet weather d/D values reached or exceeded 1.0, meaning that none of the locations experienced surcharged conditions during the monitoring period.

Recommendations

When the rainfall entering the sewer system is less than 5 percent of the total storm volume, it is usually not economically cost effective to locate and repair the RDII sources. Since all of the basins demonstrate a RDII well below 5 percent, further work to locate and repair the RDII sources is not recommended.

Basins 1, 2, 4, 5, and 6 showed a significant amount of base infiltration. The source of this base infiltration is most likely the high ground water present in these areas.

The City should consider reducing the number of manhole cover openings by installing plugs. Sufficient ventilation has to be provided to preclude corrosion of the manholes due to hydrogen sulfide formation. The openings should be placed upslope to minimize inflow into the system.

1-6 Capital Improvement Program

The primary goal of the Capital Improvement Program (CIP) is to provide the City of Cypress with a long range-planning tool for implementing its sewer infrastructure improvements in an orderly manner. To accomplish this goal, the City's improvements are split into two (2) categories: "Hotspot and Capacity Deficiency" and "Condition Deficiency". Hot Spot and Capacity Deficiency projects are beneficial when all parts of the recommended improvements are completed. Condition Deficiency projects are stand-alone improvements that can be completed, independently, to reduce the possibilities of sewage overflows. Therefore, the Condition Deficiency projects will be analyzed separately from the Hot Spot and Capacity Deficiency projects. The City should select the annual capital improvement projects based upon the funds available for these improvements.

The needed capital improvements were identified as a result of assessment of the system through capacity analyses, condition assessment of the system based upon CCTV inspections and physical facility inspections.

Capital Improvement Project Priorities

The capital improvement projects were selected primarily with consideration of the health and safety of the public and protection of the environment by minimizing the possibility of overflows. When segments of sewers with lower priorities are located in the same vicinity as a higher priority project, an exception can be made to include the lower priority sewers in that project to provide a more economically feasible Capital Improvement Program.

While the recommended capital improvement projects are given general prioritizations, the City should review the projects periodically and establish the annual capital improvement program to address any changed conditions based upon the most current information available, and to take advantage of concurrent construction such as street paving projects or adjacent infrastructure work.

It may not be feasible to implement some small projects as one single project. In such cases, several projects can be combined into one construction package. Some large projects may be broken down into smaller components to fit the City's budgetary and other obligations.

Hot Spot Improvements

The highest priority has been assigned to the projects that will help alleviate known maintenance problems and frequent back-ups in the system. Specifically, Project No. 1 and No. 2 (Hot Spot No. 7 and 23, respectively) focus on remedying the energy loss problem and resulting surcharges due to sewer confluences and multiple 90 degree directional changes in a concentrated area. Project No. 2 was completed in FY 2007-2008. Project No. 3 will also help to alleviate Hot Spot No. 7 by diverting flows upstream.

The Hot Spots that are not addressed in the CIP were identified by CCTV reports with minimal or no structural deficiencies. Existing sewer siphons and minimal slopes are often the cause of grease plugs. While grease can eventually be reduced through the programs required by the Waste Discharge Requirements, most of these Hot Spots will continue to need frequent maintenance.

Capacity Deficiency Improvements

Projects identified by hydraulic evaluations and observed in the field with existing capacity deficiencies are also given a high priority. The projects that show calculated hydraulic deficiencies, but were **not** observed to be deficient in the field are given a lower priority. The discrepancy in calculated and observed flows can be attributed to vacancies, the conservatism included in the unit flow factors, or the fact that field observations may not have been made at the exact peak flow time of day.

Condition Deficiency Improvements

The condition deficiency improvement projects are prioritized solely on the condition of the pipe as viewed from the CCTV recordings. The condition deficiencies with critical structure damage and severe obstructions were given the highest priority. Sewers with conditions categorized as "Severe" or "Major" are included in the recommended improvements.

The planning level recommendations are based upon the ranking and pipe defects from the CCTV inspection reports, and reviews of recordings. It may be possible to reline, repair or perform root treatment on some of the existing gravity pipes, in lieu of replacing them. Actual improvements should be designed based upon further detailed reviews of each recording, taking into consideration other factors such as location, age, capacity of the pipe, existing utilities, and concurrent infrastructure construction projects.

The useful life gained from replacing the deficient facilities will be longer than repairs and relining projects. Root treatment is usually a temporary solution. Unless the source is removed, it is likely that the roots will get thicker as time passes and the root intrusion will continue until the pipe is replaced.

Capital Improvement Program

The recommended Hot Spot and Capacity Improvement Projects are detailed in Table 1-12. The recommended Condition Improvement Projects are detailed in Table 1-13. Figure 1-4 illustrates the locations for all recommended Capital Improvement Projects.

The cost estimates presented in Table 1-12 and 1-13 are based upon recent information for similar projects in the Southern California area. The construction costs are based upon the following:

Gravity sewer replacement	$35 / diameter inch / ft
Sewer siphon replacement	$1,000 / ft

Implementation cost is determined by adding 35 percent of construction cost to cover engineering, inspection, and administration.

In summary, the system improvements costs are estimated as follows:

Hot Spot and Capacity Deficiency Projects	$21.6 Million
Condition Deficiency Projects	$21.5 Million
Total Estimated Cost	**$43.1 Million**

Although the condition improvement projects include planning level recommendations for each project, the construction costs are based upon replacing the entire reach.

The recommended Capital Improvement Program has been based upon the best information currently available. It should be updated as new information becomes available from sources such as new CCTV inspections and from maintenance crew observations. The project priorities may be adjusted to take advantage of concurrent construction such as street paving projects or adjacent infrastructure work.

Table 1-12

Hot Spot and Capacity Improvement Projects

Project No.	Pipe Number	US MH ID	DS MH ID	District No.	Street Location	Condition Rank	Deficiency Description	Length (ft)	Slope	Year of Const.	Exist. Pipe Size (in)	Replace-ment Diameter (in)	(1) Construction Cost ($)	(2) Eng and Admin ($)	(1) + (2) Total Cost ($)	Total Project Cost ($)
1	Hot Spot No. 7			08	Moody St between Lincoln Ave and Bishop St		Excessive energy dissipation due to multiple 90 degree turns in alignment	400			8	8	112,000	39,200	151,200	
								30			15	15	15,750	5,513	21,263	
							Total Project 1 Length	430			Reconfigure Exist. Manholes (5)		25,000	8,750	33,750	
											New Manholes (3)		30,000	10,500	40,500	246,713
2	Hot Spot No. 23			35	Florence St between Elm Ave and Cerritos Ave		Excessive energy dissipation due to multiple 90 degree turns in alignment	550			10	10	COMPLETED FY 2007-2008			
								50			8	8				
							Total Project 2 Length	600			Reconfigure Exist. Manholes (1)					
											New Manholes (5)					
3	-	09-006	09-003	09	Crescent Ave		Ex. Peak Flow Exceeds Capacity in Lincoln Ave.; Divert flows from north of Crescent Ave west to ex. 12" sewer and OCSD trunk	400	0.0173	-	-	8	112,000	39,200	151,200	151,200
							Total Project 3 Length	400								
4	09034036	09-034	09-036	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	252	0.0020	1956	8	15	132,300	46,305	178,605	
	09036038	09-036	09-038	09	Lincoln Ave	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	350	0.0020	1956	8	15	183,750	64,313	248,063	
	09038045	09-038	09-045	09	Lincoln Ave		Ex. Peak Flow Exceeds Capacity (d/D=1.00)	175	0.0020	1956	8	15	175,000	61,250	236,250	siphon under 36" storm drain
	09045046	09-045	09-046	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	175	0.0020	1956	8	15	91,875	32,156	124,031	
	09046048	09-046	09-048	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	350	0.0020	1956	8	15	183,750	64,313	248,063	
	09048050	09-048	09-050	09	Lincoln Ave	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	350	0.0020	1956	8	15	183,750	64,313	248,063	
	09050023	09-050	08-023	09	Lincoln Ave	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	333	0.0054	1956	8	15	174,825	61,189	236,014	
	08023022	08-023	08-022	08	Lincoln Ave & Moody St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	72	0.0056	1956	10	15	37,800	13,230	51,030	
	09040041	09-040	09-041	09	Cypress St	Major	Condition (offset, sags, calcium)	358	0.0024	1971	8	10	125,300	43,855	169,155	
	09041042	09-041	09-042	09	Parking Lot	Minor	High water level	174	0.0024	1972	8	10	60,900	21,315	82,215	
	09042043	09-042	09-043	09	Parking Lot	Minor	High water level	106	0.0024	1972	8	10	37,100	12,985	50,085	
	09043044	09-043	09-044	09	Parking Lot	Minor	Condition (multiple sags)	163	0.0024	1972	8	10	57,050	19,968	77,018	
	09044045	09-044	09-045	09	Parking Lot	O&M	Condition (multiple sags)	183	0.0024	1972	8	10	64,050	22,418	86,468	2,035,058
							Total Project 4 Length	3,041								
5	42097098	42-097	42-098	42	Orangewood Ave	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.73); Condition (offset, sags)	311	0.0024	-	8	10	108,850	38,098	146,948	
	42098099	42-098	42-099	42	Orangewood Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	350	0.0024	-	8	10	122,500	42,875	165,375	
	42099100	42-099	42-100	42	Orangewood Ave & New Zealand St	ND	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	30	0.0024	-	8	12	12,600	4,410	17,010	
	42100101	42-100	42-101	42	Orangewood Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	386	0.0024	1961	8	12	162,120	56,742	218,862	
	42101039	42-101	41-039	42	Orangewood Ave & Holder St	Severe	Ex. Peak Flow Exceeds Capacity (d/D=1.00); Condition (broken pipe, sags, calcium)	400	0.0024	1961	8	12	168,000	58,800	226,800	
	41039038	41-039	41-038	41	Orangewood Ave & Holder St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	400	0.0024	1961	8	12	168,000	58,800	226,800	
	41038037	41-038	41-037	41	Orangewood Ave	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.78); Condition (crack, sags)	400	0.0032	1961	8	12	168,000	58,800	226,800	
	41037036	41-037	41-036	41	Orangewood Ave	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.78); Condition (broken pipe, offsets, sags)	395	0.0032	1961	8	12	165,900	58,065	223,965	
	41036032	41-036	41-032	41	Orangewood Ave	Major	Condition (cacium)	145	0.0264	1961	8	12	60,900	21,315	82,215	1,534,775
							Total Project 5 Length	2,817								
6	41049048	41-049	41-048	41	Montserrat St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.76)	163	0.0024	1971	8	12	68,460	23,961	92,421	
	41048031	41-048	41-031	41	Rosario Ave	Severe	Ex. Peak Flow Exceeds Capacity (d/D=0.87); Condition (Sags)	251	0.0024	1971	8	12	105,420	36,897	142,317	
	41031030	41-031	41-030	41	Providencia St	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.64); Condition (offsets, calcium)	331	0.0048	1972	8	12	139,020	48,657	187,677	
	41030075	41-030	41-075	41	Providencia St & Grenada Ave	ND	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	24	0.0020	1972	8	12	10,080	3,528	13,608	
	41075029	41-075	41-029	41	Providencia St & Grenada Ave	ND	Ex. Peak Flow Exceeds Capacity (d/D=0.65)	40	0.0048	1972	8	12	16,800	5,880	22,680	
	41029131	41-029	41-131	41	Grenada Ave to Orangewood Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.77)	165	0.0048	-	8	12	69,300	24,255	93,555	
	41131032	41-131	41-032	41	Orangewood Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	12	0.0020	-	8	18	7,560	2,646	10,206	562,464
							Total Project 6 Length	986								

Table 1-12
Hot Spot and Capacity Improvement Projects

Project No.	Pipe Number	US MH ID	DS MH ID	District No.	Street Location	Condition Rank	Deficiency Description	Length (ft)	Slope	Year of Const.	Exist. Pipe Size (in)	Replace-ment Diameter (in)	(1) Construction Cost ($)	(2) Eng and Admin ($)	(1) + (2) Total Cost ($)	Total Project Cost ($)
7	14016014	14-016	14-014	14	Orange Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.74)	300	0.0016	1961	10	15	157,500	55,125	212,625	
	14014013	14-014	14-013	14	Orange Ave	Severe	Ex. Peak Flow Exceeds Capacity (d/D=0.76); Condition (broken pipe, offset, calcium)	300	0.0016	1961	10	15	157,500	55,125	212,625	
	14013011	14-013	14-011	14	Orange Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.77)	300	0.0016	1961	10	15	157,500	55,125	212,625	
	14011010	14-011	14-010	14	Orange Ave	Severe	Ex. Peak Flow Exceeds Capacity (d/D=0.77); Condition (cracks, sag)	300	0.0016	1961	10	15	157,500	55,125	212,625	
	14010009	14-010	14-009	14	Orange Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	125	0.0016	1976	10	15	65,625	22,969	88,594	939,094
							Total Project 7 Length	**1,325**								
8	15011034	15-011	15-034	15	Bishop St	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.67); Condition (calcium)	345	0.0016	1956	10	15	181,125	63,394	244,519	
	15034033	15-034	15-033	15	Bishop St	Severe	Ex. Peak Flow Exceeds Capacity (d/D=0.71); Condition (sag, roots, calcium)	330	0.0016	1956	10	15	173,250	60,638	233,888	
	15033039	15-033	09-039	15	Grindlay St	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.76); Condition (offset, calcium, roots)	310	0.0016	1956	10	15	162,750	56,963	219,713	698,119
							Total Project 8 Length	**985**								
9	Hot Spot No. 38			26	Cathy Ave		Condition (infiltration & inflow)	Renovate Existing Manhole 26-096					10,000	3,500	13,500	13,500
							Total Project 9 Length	**0**								
10	08064065	08-064	08-065	08	Merten Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.71)	200	0.0016	1956	10	15	105,000	36,750	141,750	
	08065029	08-065	08-029	08	Merten Ave	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=0.71)	250	0.0016	1956	10	15	131,250	45,938	177,188	
	08029071	08-029	09-071	08	Moody St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.84)	234	0.0016	1956	10	15	122,850	42,998	165,848	
	09071027	09-071	08-027	09	Moody St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.90)	126	0.0016	1956	10	15	66,150	23,153	89,303	
	08027070	08-027	08-070	08	Moody St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	350	0.0016	1956	10	15	183,750	64,313	248,063	
	08070025	08-070	08-025	08	Moody St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	155	0.0016	1956	10	15	81,375	28,481	109,856	
	08025024	08-025	08-024	08	Moody St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	195	0.0016	1956	10	15	102,375	35,831	138,206	
	08024023	08-024	08-023	08	Moody St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	238	0.0016	1956	10	15	124,950	43,733	168,683	1,238,895
							Total Project 10 Length	**1,748**								
11	27028027	27-028	27-027	27	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	267	0.0016	1961	10	15	140,175	49,061	189,236	
	27027026	27-027	27-026	27	Myra Ave	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	267	0.0016	1961	10	15	140,175	49,061	189,236	
	27026025	27-026	27-025	27	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.74)	267	0.0016	1961	10	15	140,175	49,061	189,236	
	27025024	27-025	27-024	27	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.81)	325	0.0016	1961	10	15	170,625	59,719	230,344	
	27024023	27-024	27-023	27	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.83)	325	0.0016	1961	10	15	170,625	59,719	230,344	
	27023022	27-023	27-022	27	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.84)	325	0.0016	1961	10	15	170,625	59,719	230,344	
	27022100	27-022	27-100	27	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.84)	325	0.0016	1961	10	15	170,625	59,719	230,344	
	27100063	27-100	26-063	27	Myra Ave	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.87); Condition (calcium, sag)	309	0.0016	1961	10	15	162,225	56,779	219,004	1,708,088
							Total Project 11 Length	**2,410**								
12	09022026	09-022	09-026	09	De Long St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	330	0.0020	1956	8	12	138,600	48,510	187,110	
	09026013	09-026	09-013	09	De Long St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	330	0.0020	1956	8	12	138,600	48,510	187,110	
	09013014	09-013	09-014	09	Watson St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.68)	280	0.0016	1956	10	15	147,000	51,450	198,450	
	09014015	09-014	09-015	09	Watson St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.71)	200	0.0016	1956	10	15	105,000	36,750	141,750	
	09015016	09-015	09-016	09	Watson St	ND	Ex. Peak Flow Exceeds Capacity (d/D=0.74)	300	0.0016	1956	10	15	300,000	105,000	405,000	siphon under 6'x7' open channel
	09016017	09-016	09-017	09	Watson St	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.77); Condition (calcium, infiltration)	350	0.0016	1956	10	15	183,750	64,313	248,063	
	09017034	09-017	09-034	09	Watson St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.77)	341	0.0016	1956	10	15	179,025	62,659	241,684	1,609,166
							Total Project 12 Length	**2,131**								
13	47020021	47-020	47-021	47	Nauru St	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	247	0.0020	1969	12	18	155,610	54,464	210,074	
	47021022	47-021	47-022	47	Nauru St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.66)	250	0.0020	1970	12	18	157,500	55,125	212,625	
	47022024	47-022	47-024	47	Nauru St	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	242	0.0020	1970	12	18	152,460	53,361	205,821	
	47024033	47-024	41-033	47	Maple Grove Park to Orangewood Ave	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.67); Condition (offsets)	158	0.0020	-	12	18	99,540	34,839	134,379	
	41033131	41-033	41-131	41	Orangewood Ave	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	95	0.0020	-	12	18	59,850	20,948	80,798	843,696

Table 1-12

Hot Spot and Capacity Improvement Projects

Project No.	Pipe Number	US MH ID	DS MH ID	District No.	Street Location	Condition Rank	Deficiency Description	Length (ft)	Slope	Year of Const.	Exist. Pipe Size (in)	Replace-ment Diameter (in)	(1) Construction Cost ($)	(2) Eng and Admin ($)	(1) + (2) Total Cost ($)	Total Project Cost ($)
							Total Project 13 Length	**992**								
14	16050051	16-050	16-051	16	Karen Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.76)	263	0.0015	1964	8	12	110,460	38,661	149,121	
	16051053	16-051	16-053	16	Karen Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	189	0.0024	1964	8	12	79,380	27,783	107,163	
	16053070	16-053	16-070	16	Karen Ave & Valley View St	Moderate	Condition (open crack)	17	0.0253	1964	8	12	7,140	2,499	9,639	265,923
							Total Project 14 Length	**469**								
15	35067074	35-067	35-074	35	Katella Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	326	0.0020	-	12	15	171,150	59,903	231,053	
	35074050	35-074	35-050	35	Katella Ave		Ex. Peak Flow Exceeds Capacity (d/D=0.67)	350	0.0020	-	12	15	183,750	64,313	248,063	
	35050057	35-050	35-057	35	Katella Ave	O&M	Condition (calcium)	151	0.0020	-	12	15	79,275	27,746	107,021	
	35057058	35-057	35-058	35	Katella Ave & Hope St	O&M	Condition (calcium)	81	0.0020	-	12	15	42,525	14,884	57,409	
	35058060	35-058	35-060	35	Katella Ave & Hope St	Major	Ex. Peak Flow Exceeds Capacity (d/D=0.68); Condition (offset, calcium)	15	0.0020	-	12	15	7,875	2,756	10,631	654,176
							Total Project 15 Length	**923**								
16	15032031	15-032	15-031	15	Nelson St	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=0.65)	350	0.0020	1956	8	10	122,500	42,875	165,375	
	09039047	09-039	09-047	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.77)	350	0.0016	1956	10	15	183,750	64,313	248,063	
	09047049	09-047	09-049	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.78)	350	0.0016	1956	10	15	183,750	64,313	248,063	
	09049051	09-049	09-051	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.81)	350	0.0016	1956	10	15	183,750	64,313	248,063	
	09051022	09-051	08-022	09	Lincoln Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.81)	280	0.0016	1956	10	15	147,000	51,450	198,450	1,108,013
							Total Project 16 Length	**1,680**								
17					Orangewood Ave		Pump Station Capacity Deficiency	Reconstruct Pump Station					2,000,000	700,000	2,700,000	
		40-002	41-033	41	Orangewood Ave		Forcemain Replacement	1,550	-	1969	8	8	434,000	151,900	585,900	3,285,900
							Total Project 17 Length	**1,550**								
18	28089090	28-089	28-090	28	Aurelia Ave & Cerritos Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	282	0.0024	1960	8	10	98,700	34,545	133,245	
	28090093	28-090	28-093	28	Aurelia Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.65)	300	0.0024	1960	8	10	105,000	36,750	141,750	
	28093094	28-093	28-094	28	Aurelia Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	308	0.0024	1960	8	10	107,800	37,730	145,530	
	28094060	28-094	27-060	28	Marion Ave & Walker St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=1.00)	282	0.0024	1960	8	12	118,440	41,454	159,894	
	27060062	27-060	27-062	27	Marion Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	221	0.0016	1961	10	12	92,820	32,487	125,307	
	27062061	27-062	27-061	27	Marion Ave	Moderate	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	223	0.0016	1961	10	12	93,660	32,781	126,441	
	27061057	27-061	27-057	27	St. Alban St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.68)	256	0.0016	1961	10	15	134,400	47,040	181,440	
	27057053	27-057	27-053	27	St. Alban St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.69)	252	0.0016	1961	10	15	132,300	46,305	178,605	
	27053028	27-053	27-028	27	St. Alban St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	268	0.0016	1961	10	15	140,700	49,245	189,945	1,382,157
							Total Project 18 Length	**2,392**					0			
19	42009054	42-009	41-054	42	Grand Manan Dr	ND	Ult. Peak Flow Exceeds Capacity (d/D=0.64)	148	0.0024	1972	8	10	51,800	18,130	69,930	
	41054053	41-054	41-053	41	Holder St	Minor	Ult. Peak Flow Exceeds Capacity (d/D=0.64)	160	0.0024	-	8	10	56,000	19,600	75,600	
	41053052	41-053	41-052	41	Holder St & San Andres Ave	O&M	Ult. Peak Flow Exceeds Capacity (d/D=0.64)	173	0.0024	1972	8	10	60,550	21,193	81,743	
	41052051	41-052	41-051	41	San Andres Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	344	0.0024	1971	8	10	120,400	42,140	162,540	
	41051050	41-051	41-050	41	San Andres Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.65)	200	0.0024	1971	8	10	70,000	24,500	94,500	
	41050049	41-050	41-049	41	San Andres Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	350	0.0024	1971	8	10	122,500	42,875	165,375	649,688
							Total Project 19 Length	**1,375**					0			
20	26063062	26-063	26-062	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.64)	250	0.0012	1962	12	15	131,250	45,938	177,188	
	26062061	26-062	26-061	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.65)	251	0.0012	1962	12	15	131,775	46,121	177,896	
	26061060	26-061	26-060	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	252	0.0012	1962	12	15	132,300	46,305	178,605	
	26060059	26-060	26-059	26	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.68)	252	0.0012	1962	12	15	132,300	46,305	178,605	
	26059058	26-059	26-058	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.70)	252	0.0012	1962	12	15	132,300	46,305	178,605	
	26058057	26-058	26-057	26	Myra Ave	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.71)	252	0.0012	1962	12	15	132,300	46,305	178,605	
	26057056	26-057	26-056	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.73)	252	0.0012	1962	12	18	158,760	55,566	214,326	
	26056055	26-056	26-055	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.74)	313	0.0012	1962	12	18	197,190	69,017	266,207	
	26055054	26-055	26-054	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.69)	304	0.0016	1961	12	18	191,520	67,032	258,552	
	26054021	26-054	25-021	26	Myra Ave	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.76)	141	0.0012	1961	12	18	88,830	31,091	119,921	1,928,509
							Total Project 20 Length	**2,519**					0			
21	22020074	22-020	16-074	22	Valley View St	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.71)	300	0.0013	1970	8	10	105,000	36,750	141,750	
	16074103	16-074	23-103	16	Orange Ave & Valley View St	ND		25	0.0110	1961	8	10	8,750	3,063	11,813	153,563
							Total Project 21 Length	**325**					0			

Table 1-12

Hot Spot and Capacity Improvement Projects

Project No.	Pipe Number	US MH ID	DS MH ID	District No.	Street Location	Condition Rank	Deficiency Description	Length (ft)	Slope	Year of Const.	Exist. Pipe Size (in)	Replace-ment Diameter (in)	(1) Construction Cost ($)	(2) Eng and Admin ($)	(1) + (2) Total Cost ($)	Total Project Cost ($)
22	23033104	23-033	23-104	23	Valley View St	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.68)	31	0.0036	1968	8	10	10,850	3,798	14,648	
	23104105	23-104	23-105	23	Valley View St	ND		13	0.0243	1964	8	10	4,550	1,593	6,143	20,790
							Total Project 22 Length	44					0			
23	36007043	36-007	35-043	36	Holder St & RR Track	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	147	0.0020	1963	8	10	51,450	18,008	69,458	
	35043042	35-043	35-042	35	RR Track	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	350	0.0020	1963	8	10	122,500	42,875	165,375	
	35042041	35-042	35-041	35	RR Track	O&M	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	350	0.0020	1963	8	10	122,500	42,875	165,375	
	35041040	35-041	35-040	35	RR Track	Minor	Ex. Peak Flow Exceeds Capacity (d/D=0.67)	350	0.0020	1963	8	10	122,500	42,875	165,375	565,583
							Total Project 23 Length	1,197								
							Total Project CIP Length	29,739							Total Project CIP Cost	21,595,066

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
1	5/29/07	75	1707			Y	Cerritos Ave	25-500	25-018	25500018	8	VCP	88	339	Severe		Soil enters through hole and broken pipe. Sediment fills 25% from infiltration. Pipe is completely flowing full due to large sag.	Replace pipe due to large sag and heavy infiltration	94,920	33,222	128,142
2	12/23/02	14	13	8	14		Orange Ave	14-013	14-014	14014013	10	VCP	295	300	Severe	7	Major broken pipe at 289 ft with major offset 2" and sunken pipe. Calcium deposits.	Spot Repair (2) broken pipes and sunken MH	105,000	36,750	141,750
3	1/3/03	17	1				Marion Ave	26-083	26-082	26083082	8	VCP	244	248	Severe		Major damaged pipe at 166-169 ft. Moderate damaged pipe from 171-172 ft. Sags, high water and calcium deposits present.	Spot Repair broken Pipes 166'-172'	69,440	24,304	93,744
4	1/21/03	26	20	18	10		Katella Ave	36-059	41-068	36059068	12	VCP	182	233	Severe		Broken pipe at 95 ft with offset caused camera to become blocked. High water level at that point also.	Spot repair broken pipe and JOL.	97,860	34,251	132,111
5	12/9/02	6	1				Grindlay St	15-047	15-052	15047052	8	VCP	186	185	Severe		Major broken pipe at water level at 179 ft, could exhibit exfiltration. Several sags present.	Spot Repalre broken pipe 170-185'.	51,800	18,130	69,930
6	12/26/02	14	26			Y	Pauline Dr	23-070	23-064	23070064	8	VCP	259	260	Severe		Major offsets >1" with soffit exposed completely. Several sags and major calcium deposits present. Small hole at crown at 29 ft.	Replace pipe, slurry backfill to prevent calcium.	72,800	25,480	98,280
7	1/20/03	26	11				Katella Ave	36-068	36-067	36068067	12	VCP	351	350	Severe		Hole at water level at 287 ft, possibility of exfiltration at this point. Longitudinal crack from 287-290 ft, with calcium. Calcium deposits present in line.	Spot Repair between 287' and 290'.	147,000	51,450	198,450
8	12/2/02	1	8			Y	La Salle St	08-060	08-063	08060063	8	VCP	329	327	Severe		Heavy roots at 220 ft obstructs 30% of pipe diameter. Presense of fine roots and grease in line. Crack at 9 ft and major offset at 247 ft.	Clean and root treat. Spot repair JOL.	91,560	32,046	123,606
9	4/17/07	46	1053			Y	Maple St	36-001	36-003	36001003	8	VCP	244.22	241	Severe		Utility is crossing vertically through the sewer line at 74'.	Spot repair 70'-80' for utility crossing at 74'.	67,480	23,618	91,098
10	1/8/03	17	7				Rosario Ave	41-048	41-031	41048031	8	VCP	241	251	Severe	6	Large metal object lodged in line and blocking camera and flow. Major sag with 100% water level.	Remove the lodged debris.	Maintenance		
11	3/21/07	34	760			Y	Juanita St	23-062	23-063	23062063	8	VCP	333.8	335	Severe		Major Debris needs to be removed from sewer . Larger than 50% at 100'.	Remove large debris at 100'.	Maintenance		
12	12/10/02	7	18			Y	Bishop St	15-034	15-033	15034033	10	VCP	331	330	Severe	8	Heavy roots at 228 and 242 ft obstructing > half pipe diameter. Major calcium deposits and sags present.	Root treat and cut	Maintenance		
13	1/14/03	22	15	14	16	Y	Myra Ave	25-124	25-119	25124119	12	VCP	204	252	Severe		Severe calcium deposits obstructing up to 50% of pipe diameter. Caused camera to be blocked.	Replace pipe due to continuous calcium deposits. Slurry backfill.	105,840	37,044	142,884
14	1/16/03	22	23			Y	Myra Ave	25-113	25-006	25113006	12	VCP	112	169	Severe		Severe calcium deposits obstructing up to 40% of pipe diameter. Caused camera to be blocked.	Replace reach due to continuous calcium. Slurry backfill	70,980	24,843	95,823
15	12/18/02	11	13	7	14	Y	Orange Ave	15-002	15-001	15002001	10	VCP	110	350	Severe		Major calcium deposits obstructing >35% of pipe diameter. Camera was blocked. From 8 O'clock to 4 O'clock.	Replace pipe and slurry backfill due to heavy calcium.	122,500	42,875	165,375
16	12/17/02		20	10	28	Y	Grindlay St	15-069	15-004	15069004	8	VCP	248	340	Severe		Major calcium deposits obstructing >30% of pipe diameter. Grease also present in line.	Replace pipe, and slurry backfill due to heavy calcium.	95,200	33,320	128,520
17	12/30/02		24	9	25		Ball Rd	19-020	19-019	19020019	15	VCP	349	350	Severe		Camera blocked by major calcium	Replace pipe, and slurry backfill due to heavy calcium.	183,750	64,313	248,063

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
18	3/30/07	38	836	1878		Y	Grindlay St	21-034	21-033	21034033	8	VCP	100.4	165	Severe		Major Calcium blocked up to 35% of pipe diameter, blocked camera.	Replace pipe, and slurry backfill due to heavy calcium.	46,200	16,170	62,370
19	12/18/02	11	11		12	Y	Orange Ave	15-003	15-002	15003002	10	VCP	338	350	Severe		Major calcium deposits obstructing >30% of pipe diameter. Fine roots also present.	Replace pipe, and slurry backfill due to heavy calcium.	122,500	42,875	165,375
20	12/19/02	12	27	7	28	Y	Walker St	21-098	21-097	21098097	10	VCP	229	347	Severe		Major calcium deposits that obstructed up to 30% of pipe diameter caused camera to be blocked. Major sag with high water at 80% present.	Replace pipe, and slurry backfill due to heavy calcium.	121,450	42,508	163,958
21	12/19/02	12	29			Y	Walker St	21-097	21-106	21097106	10	VCP	190	202	Severe		One major calcium deposit obstructing approximately 30% of pipe diameter just prior to D/S manhole.	Replace pipe, and slurry backfill due to heavy calcium.	70,700	24,745	95,445
22	1/20/03	26	15	17	16	Y	Katella Ave	36-060	36-059	36060059	12	VCP	350	350	Severe		Major calcium deposit obstructing approximately 30% of pipe diameter caused camera to become blocked.	Replace pipe, and slurry backfill due to heavy calcium.	147,000	51,450	198,450
23	3/30/07	38	833	834		Y	Grindlay St	21-040	21-039	21040039	8	VCP	166.4	166	Severe		Major Calcium blocked up to 30% of pipe diameter, blocked camera.	Replace pipe, and slurry backfill due to heavy calcium.	46,480	16,268	62,748
24	6/25/07	93	1959			Y	Via Encinas	19-075	19-073	19075073	8	VCP	114.8	230	Severe		Major Calcium blocked up to 30% of pipe diameter from 7 O'clock to 5 O;clock. Calcium blocked camera. Not likely to block debris though. Continuous.	Replace pipe, and slurry backfill due to heavy calcium.	64,400	22,540	86,940
25	6/25/07	93	1965			Y	Via Encinas	19-073	19-072	19073072	8	VCP	28.7	197	Severe		Major Calcium blocked up to 30% of pipe diameter, blocked camera. 9 O'lcock to 3 O'clock. Not likely to block flow.	Replace pipe, and slurry backfill due to heavy calcium.	55,160	19,306	74,466
26	2/21/07	14	358			Y	Newman St	16-019	16-018	16019018	8	VCP	182	190	Severe		Broken Pipe (VV) @9 primarily at crown of pipe', also joint offset medium. Too many roots.	Spot Repair U/S 5 moints from 16-018	53,200	18,620	71,820
27	2/20/07	13	345			Y	Camp St	16-007	16-006	16007006	8	VCP	209.3	200	Severe		5"x5" Hole with Visible Soil. Broken Pipe (SV) @ 5', also missing pipe. @ 12' Broken Pipe (VV) and joint offset medium. @192'	Spot Repair 3 joints U/S of MH 16-006. Cut and Root treat MH 16-007	56,000	19,600	75,600
28	4/27/07	54	1195			Y	Alley	25-039	25-036	25039036	8		199.91	200	Severe		3" Joint offset large @ 192' (DSL)	Replace 5 joints at JOL.	56,000	19,600	75,600
29	1/9/03	23	11				Paradise Cir	46-001	46-002	46001002	8	VCP	195	195	Severe		Broken pipe at 193 ft , crack open. End of run due to major offset. Two major offset pipes.	Replace pipe	54,600	19,110	73,710
30	2/20/07	13	340			Y	Bishop St	15-015	15-010	15015010	8	VCP	331	330	Severe		Broken Pipe (VV) @ 29', also 3" joint offset large @ 24' (DSL)	Spot repair 0'-50' for JOL and broken pipe. Replace Wye at 310'.	92,400	32,340	124,740
31	3/26/07	35	775			Y	Tanforan Dr	25-120	25-119	25120119	8		380	380	Severe		3" Offset at 375' (DSH). Minor/moderate cracks, with signs of infiltration.	Replace 5 joints @ JOL and reline pipe.	106,400	37,240	143,640
32	12/23/02	13	16				Orange Ave	14-011	14-010	14011010	10	VCP	297	300	Severe	7	Several severe cracks in pipe. Exfiltration could occur due to high water levels. Major sag greater than 65% and camera submerged.	Replace due to sags, multiple cracks, fractures, and broken pipes.	105,000	36,750	141,750
33	2/20/07	13	343	344		Y	Camp St	16-006	16-005	16006005	8	VCP	348	350	Severe		External Utility crosses through sides of the wall. Broken pipe (SV) at both sides with exposed soil..	Spot Repair utility @ 33' from MH 16-006.	98,000	34,300	132,300
34	12/2/02	1	1				Belmont St	08-036	08-054	08036054	8	VCP	350	350	Severe		Hole at 79 ft. Broken pipe around joint at 314 ft.	Spot repair hole at 79' and Broken pipe at 314'.	98,000	34,300	132,300

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
35	2/21/07	14	356			Y	Newman St	16-014	15-020	16014020	8	VCP	356.7	350	Severe		Big Hole on crown of pipe. Appears to be patched. The hole is roughly 8"x12" in size (VV) @ 7'	Spot Repair 0'-10'.	98,000	34,300	132,300
36	6/13/07	85	1844			Y	Bishop St	14-116	14-032	14116032	8	VCP	359.9	367	Severe		3" Joint offset large @ 13'	Spot Repair U/S 5 joints from MH 14-032	102,760	35,966	138,726
37	1/21/03	26	19				Shaw Carpets Parking Lot	Warland-Shaw-3 (40-911)	Pump Station (40-002)	40911002	10	VCP	166	161	Severe		Severely broken pipe from 4-7 ft, with multiple cracks. Major infiltration at 7 ft. Moderate offsets and sags present.	Replace pipe because of the multiple deficiencies.	56,350	19,723	76,073
38	5/21/07	70	1579			Y	Lincoln Ave	17-005	17-004	17005004	8	VCP	283.24	330	Severe		2" Joint offset large @ 134' and J O Medium	Root treat and cut. Prelace 10 joints @ JOL	92,400	32,340	124,740
39	5/21/07	70	1647			Y	Pritchard Way	42-075	42-074	42075074	8	VCP	177.26	177	Severe		2" Joint Offset Large at 58', 101', and 103'.	Replace pipe. JOL and large sags.	49,560	17,346	66,906
40	5/9/07	62	1422			Y	Maple St	36-005	36-006	36005006	8	VCP	160.08	160	Severe		Broken Pipe with soil exposed where a small portion of the pipe is missing @ 134' near water line	Spot Repair broken pipe at 130'-140'.	44,800	15,680	60,480
41	1/24/03	27	14			Y	Holder Easement	36-027	36-026	36027026	8	VCP	346.8	350	Severe		Fracture at 55 ft goes below water line. Possibility for exfiltration at this point.	Spot repair fracture between 50'60'	98,000	34,300	132,300
42	1/10/03	23	15				Orangewood Ave	42-101	41-039	42101039	8	VCP	406	400	Severe	5	Broken pipe at 328 ft. Hard to determine severity due to high water level and sags. Could be source for exfiltration. Calcium and grease present.	Replace pipe due to large sag and severely broken pipe.	112,000	39,200	151,200
43	6/21/07	91	1933			Y	Holder St	35-047	35-048	35047048	10	VCP	340.3	342	Severe		Broken Pipe was Fracture Multiple at 2 O'clock.	Spot repair broken pipe and fracture at 10' U/S to MH 35-048	119,700	41,895	161,595
44	2/20/07	13	339			Y	Bishop St	16-001	15-015	16001015	8	VCP	350.3	350	Severe		Minor broken pipe, with soil slightly visible on top portion of the pipe between 9 and 3 O'clock. Major Root ball blocks 35% of pipe. Roots between 0'-100'.	Root treat and cut. Spot repair 324' to 335' for broken pipe.	98,000	34,300	132,300
45	4/26/07	53	1134	1141		Y	Alley	25-075	25-073	25075073	10	VCP	122.8	258	Major		Major Calcium blocked up to 50% of pipe diameter, blocked camera.	Replace reach due to continuous calcium. Slurry backfill	90,300	31,605	121,905
46	4/2/07	39	972	973		Y	Olga St	27-040	27-041	27040041	8	VCP	320.4	323	Major		Major Calcium blocked up to 40% of pipe diameter, blocked camera.	Replace pipe, and slurry backfill due to heavy calcium.	90,440	31,654	122,094
47	4/3/07	40	982	983		Y	Marcella Ave	27-055	27-054	27055054	8	VCP	190.7	186	Major		Gis Length is 186 feet. Major Calcium blocked up to 30% of pipe diameter, blocked camera.	Replace pipe, and slurry backfill due to heavy calcium.	52,080	18,228	70,308
48	6/25/07	93	1962			Y	Alley	19-077	19-076	19077076	8	VCP	17.4	215	Major		Calcium blocked up to 30% of pipe diameter, blocked camera. Continuous Calcium on crown of pipe.	Replace pipe, and slurry backfill due to heavy calcium.	60,200	21,070	81,270
49	5/9/07	62	1424			Y	Kiwi Cir	48-030	48-029	48030029	8	VCP	146.95	235	Major		Major Calcium blocked up to 30% of pipe diameter, blocked camera. 8 O'clock to 4 O'clock. Not likely to block debris.	Replace pipe, and slurry backfill due to heavy calcium.	65,800	23,030	88,830
50	12/19/02	12	19			Y	Orange Ave	14-006	14-004	14006004	12	VCP	300	300	Major		Multiple fractures and cracks present at 297 ft. Major offset at 298 with gasket falling out. Calcium and major sag present.	Replace due to muptiple defects, especially JOL at 298'.	126,000	44,100	170,100
51	2/16/07	12	240			Y	Belmont St	08-047	08-048	08047048	8	VCP	273.8	275	Major		Moderate Hole at 3 O'clock, moderate/severe broken pipe at 245'.	Spot repair hole between 239'-250'.	77,000	26,950	103,950

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe						Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)								
52	12/9/02	6	8			Y	Edgemont Cir	15-065	15-066	15065065	8	VCP	282	280	Major		Water level at 100% at 166 ft. Major offset at 201 ft and calcium deposits present.	Spot Repair 10 joints at JOL	78,400	27,440	105,840
53	12/5/02	4	14			Y	De Long St	09-011	09-012	09011012	8	VCP	321	322	Major		Severe major offset >1" at 4 ft. Circumferential crack present from 3 - 5 ft.	Spot Repair 5 Joints at JOL	90,160	31,556	121,716
54	1/13/03	24	7			Y	Saipan St	47-045	47-039	47045039	8	VCP	71	69	Major		Severe major joint offset >1"at 65 ft. Major sag with water level of approximately 80%.	Spot repair 10 joints at JOL	19,320	6,762	26,082
55	1/10/03		24	15	25	Y	Seabrook Way	42-093	42-094	42093094	8	VCP	179	205	Major		(3) 1.5" Joint Offset Large. Run ended due to camera blocked. Calcium deposits in line	Replace entier pipe due to multiple defects	57,400	20,090	77,490
56	12/11/02	8	10			Y	Watson St	09-016	09-017	09016017	10	VCP	347	350	Major	12	Broken pipe at 85 ft. Calcium deposits throughout line.	Spot Repair Broken pipe between 80'-90'	122,500	42,875	165,375
57	5/16/07	67	1485			Y	Lincoln Ave	08-009	08-011	08009011	8	VCP	210.29	210	Major		Hole appears to be patched at 9 and 3 O'clock. Light fractures.	Spot repair 200-210' at broken pipe	58,800	20,580	79,380
58	2/28/07	19	478			Y	Via Largo	19-117	19-111	19117111	8	VCP	307.3	310	Major		Hole at 289' is patched. Multiple fractures around the entire circumference. Major calcium obstructs 15% of the pipe.	Spot Repair 285'-295' at hole and 0'-10' for fractured pipe.	86,800	30,380	117,180
59	6/14/07	86	1857			Y	Newport Way	22-054	22-053	22054053	6	VCP	345.1	341	Major		1.5" Joint offselt large (DSH) at 5.7'.	Spot Repair 5 joints U/S of MH 22-053	71,610	25,064	96,674
60	3/22/07	34	770			Y	Delano Dr	25-129	25-128	25129128	8		372.6	375	Major		Broken Pipe is moderate around entire circumference @ 11'. JOM throughout the entire pipe.	Replace due to multiple JOL and JOM through pipe	105,000	36,750	141,750
61	2/1/07	1	124			Y	Petite Ln	02-003	02-002	02003002	8	VCP	334.14	332	Major		1/2" Wide Joint Angular and multiple cracks	Spot repair108-128' at wide joint angular. Slurry backfill due to calcium deposits.	92,960	32,536	125,496
62	12/9/02	7	13			Y	Sowma Wy	15-067	15-068	15067068	8	VCP	309	300	Major		Concrete in manhole and beginning of line. Two major offsets and calcium deposits present.	Replace pipe due to multiple defects.	84,000	29,400	113,400
63	1/14/03	25	21			Y	Orangewood Ave	41-037	41-036	41037036	8	VCP	396	395	Major	5	Broken pipe at 72 ft. Two 1/2" to 1" major offsets and several sags in line	Replace Pipe, due to multiple defects.	110,600	38,710	149,310
64	5/25/07	74	1631			Y	Bloomfield St	19-007	19-009	19007009	8	VCP	234.54	237	Major		Fracture Multiple at 181'. Major calcium deposit obstruct 15% of pipe.	Spot repair Multiple fractures at 181'	66,360	23,226	89,586
65	2/14/07	10	221			Y	Cresent Ave	02-025	02-024	02025024	12	VCP	354.2	350	Major		Infiltration at crown throughout pipe. Multiple Fractures	Spot repair 242'-265' Slurry backfill due to calcium deposits.	147,000	51,450	198,450
66	2/27/07	18	470			Y	Avenida Carmel	19-121	19-120	19121120	8	VCP	313.6	315	Major		Light Fractures	Spot repair fractures at 85'-95'	88,200	30,870	119,070
67	4/4/07	41	880	1980		Y	Larwin Ave Esmt	26-045	26-038	26045038	8	VCP	145.5	139	Major		Hole with visible soil at 83'. The camera was under water, so defects could not be seen clearly. Recommend revideo	Revideo. Possibly spot repair hole at 80'-90'.	38,920	13,622	52,542
68	3/5/07	22	592			Y	Firenza Dr	20-081	20-086	20081086	8	VCP	209.59	204	Major		1.5" Offset Joint Large (DSL) at 207' and 1/2" Offset Joint Medium (DSL) at 41'	Spot repair 10 joints from JOL and JOM.	57,120	19,992	77,112
69	2/5/07	3	50			Y	Surrey Dr	13-087	13-088	13087088	8	VCP	381.95	383	Major		(3) 1/2" JOM and 1" JOL. All (DSL).	Replace pipe due to JOMs	107,240	37,534	144,774
70	2/23/07	18	376			Y	Camp St	15-017	15-030	15017030	8	VCP	347.2	350	Major		Small Hole at 8 O'clock near flow levels.	Spot repair between 310'-347'.	98,000	34,300	132,300
71	2/21/07	14	360			Y	Newman St	16-020	16-018	16020018	8	VCP	280.9	282	Major		No t broken pipe. It appears to be chipped @ 96'.	Spot repair chip between 90-105'.	78,960	27,636	106,596

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
72	3/28/07	36	804	805		Y	Ethel St	26-071	26-059	26071059	8	VCP	4.9	397	Major		Major calcium obstructs 35% Of pipe between 8 O'clock and 4 O'clock	Spot Repair 4' from MH 26-071.	111,160	38,906	150,066
73	2/7/07	5	170			Y	Danny Av	10-020	09-025	10020025	8	VCP	275	290	Major		1" Joint offset large (DSL) at 268' and 1/2" JOM (DSL) at 257'	Root treat and cut. Spot Repair 10 joints from JOL.	81,200	28,420	109,620
74	2/15/07	11	311			Y	Vista Mesa	15-055	15-050	15055050	8	VCP	241.1	242	Major		1" Joint offset large (DSH) @ 205' and 1/2" JO Medium	Replace 10 joints from JOL.	67,760	23,716	91,476
75	3/8/07	25	631			Y	Bloomfield St	13-009	13-010	13009010	8	VCP	350.11	350	Major		1" Offset Joint large (DSL) at 251', and 1/2" JOM (DSH) at 260'	Replace 10 joints from JOL.	98,000	34,300	132,300
76	2/9/07	7	87			Y	Esther St	14-087	14-088	14087088	8	VCP	216.07	217	Major		1/2" Joint Offset Angular.	Spot repair 10 joints from Angular Joint Offset	60,760	21,266	82,026
77	5/16/07	67	1487			Y	Lincoln Ave	08-014	08-072	08014072	8	VCP	241.02	240	Major		Small Hole at 12 O'clock and Minor Multiple Fractures	Spot repair 140'-150' at small hole	67,200	23,520	90,720
78	12/2/02	1	4			Y	Belmont St	08-054	08-053	08054053	8	VCP	338	340	Major		Major offset joint approximately 1", possibility for leakage to occur. Sag and other minor offset joints present.	Replace Lime	95,200	33,320	128,520
79	2/1/03	27	16			Y	Crescent Ave	10-002	10-001	10002001	8	VCP	350	350	Major		Two major offsets approximately 1". Fine roots and grease present.	Spot Repair Major Offsets	98,000	34,300	132,300
80	1/7/03	20	13	13	15	Y	Marion Ave	25-122	25-121	25122121	8	VCP	91	252	Major		Camera blocked due to major calcium deposit. Major offset approximately 1" at 67 ft.	Spot Repair JOL and Major Calcium deposits	70,560	24,696	95,256
81	12/5/02	4	13			Y	Cypress St	09-040	09-041	09040041	8	VCP	383	358	Major	4	Major offset approximately 1" joint at 175 ft. Calcium deposits and sags present.	Spot Repair JOL	100,240	35,084	135,324
82	12/2/02	1	9			Y	La Salle St	08-063	08-064	08063064	8	VCP	351	352	Major		Major offset approximately 1"at 346 ft. Several sags and grease.	Spot Repair JOL @ 346	98,560	34,496	133,056
83	12/9/02	6	6			Y	Grindlay St	15-068	15-069	15068069	8	VCP	63	61	Major		Major Calcium deposits at joints. Obstructing up to 10% of pipe diameter. Major offset joint at 39 ft.	Replace pipe	17,080	5,978	23,058
84	1/16/03	22	18			Y	Cathy Ave	26-098	26-097	26098097	8	VCP	243	245	Major		High water caused camera to submerged at end of run. Major offset at 226 ft and several calcium deposits.	Replace pipe	68,600	24,010	92,610
85	2/5/03	27	24			Y	Katella Ave @ Hope St	35-058	35-060	35058060	12	VCP	14	15	Major	15	Gasket seal hanging in to line at beginning of run at MH 35-058. Calcium deposit present at joint.	Spot repair exposed gasket	6,300	2,205	8,505
86	2/5/03	27	21			Y	Katella Ave @ Hope St	35-059	35-060	35059060	12	VCP	8	6	Major		Major offset joint approximately 1" with gasket coming out of joint. Very short segment btwn MH's.	Spot Repair JOL	2,520	882	3,402
87	1/10/03	23	16			Y	Orangewood Ave	42-097	42-098	42097098	8	VCP	310	311	Major	5	Major offset approximately 1" at 19 ft with signs of infiltration. Several sags present.	Spot Repair JOL	87,080	30,478	117,558
88	1/14/03	24	20			Y	Orangewood Ave	41-038	41-037	41038037	8	VCP	403	400	Major	5	Circular crack at 23 ft with slight gap and shift. Major sag with depth greater 70%. Several minor sags.	Replace	112,000	39,200	151,200
89	12/20/02	13	3			Y	Ball Rd	22-004	22-003	22004003	10	VCP	246	248	Major		One major offset approximately 1". Calcium deposits present.	Spot Repair JOL	86,800	30,380	117,180
90	12/12/02	9	26			Y	Lincoln Ave	08-008	08-006	08008006	15	VCP	276	276	Major		Major offset approximately 1" at 246 ft. Several minor cracks and calcium deposits.	Spot Repair JOL	144,900	50,715	195,615
91	2/12/07	8	275			Y	Ashbury Ave	14-108	14-100	14108100	8	VCP	266.8	267	Major		This JOM is a JOL on Inspection report.	Spot Repair JOL	74,760	26,166	100,926
92	4/26/07	53	1138			Y	Alley	25-078	25-075	25078075	10	VCP	110.78	121	Major		Moderate Infiltration	Replace pipe and slurry backfill.	42,350	14,823	57,173
93	3/9/07	26	576			Y	Grindlay St	21-046	21-045	21046045	8	VCP	105.9	107	Major		Moderate/minor Infiltration	Replace pipe and slurry backfill.	29,980	10,486	40,446

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							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
94	2/1/07	1	126				Denni St	02-001	01-051	02001051	8	VCP	14.57	15	Major		Moderate Multiple Fractures	Spot Repair Multiple Fractures	4,200	1,470	5,670
95	2/14/07	10	308			Y	Hickory Cir	15-079	15-091	15079091	8	VCP	290	257	Major		35 feet of concrete pipe (SR1). Part of crown appears chipped off. Multiple Cracks	Replace	71,960	25,186	97,146
96	2/22/07	15	261			Y	Karen Av	16-085	15-022	16085022	8	VCP	354.5	350	Major		Minor Broken Pipe	Spot repair minor broken pipe	98,000	34,300	132,300
97	2/15/07	11	313			Y	Vista Sierra	15-056	15-055	15056055	8	VCP	234.4	234	Major		Small Hole @ 1 O'clock, soil is visible. Small Fracture.	Spot repair hole and fractures.	65,520	22,932	88,452
98	2/15/07	11	238			Y	Sumner Pl	08-039	08-040	08039040	8	VCP	337.1	340	Major		Multiple Cracks	Spot Repair multiple cracks	95,200	33,320	128,520
99	12/30/02	16	1			Y	Ball Rd	19-017	19-016	19017016	15	VCP	341	350	Major		Longitudinal cracks with signs of infiltration. Calcium deposits and high water present. Camera blocked 3 ft from MH due to reduced pipe size to 10".	Replace pipe, slurry backfill.	183,750	64,313	248,063
100	2/16/07	12	243				Sumner Pl	08-045	08-043	08045043	8	VCP	272.6	275	Major		Joint Offset Medium and Fractures.	Spot repair JOM and fractures	77,000	26,950	103,950
101	2/20/07	13	342				Bishop St	16-003	16-002	16003002	8	VCP	110.7	100	Major		Hole with Patch. Light Fractures	Spot Repair hole and fractures	28,000	9,800	37,800
102	3/27/07	36	786			Y	Beaver Cir	25-142	25-141	25142141	8		312.5	313	Major		Light Fractures	Replace pipe	87,640	30,674	118,314
103	3/27/07	36	787			Y	Cary Cir	25-140	25-139	25140139	8	VCP	277.3	277	Major		Light/Moderate Cracks and Fractures	Replace pipe	77,560	27,146	104,706
104	3/20/07	33	740			Y	Pauline Dr	23-069	23-070	23069070	8		348.8	350	Major		Minor Broken Pipe with thick root intruding.	Spot Repair minor broken pipe. Root treat and cut.	98,000	34,300	132,300
105	3/8/07	25	628			Y	Bloomfield St	13-008	13-007	13006007	8	VCP	293.82	292	Major		2'x2' pateched hole	Spot Repair hole.	81,760	28,616	110,376
106	3/19/07	32	727			Y	Rosemary Dr	23-096	23-084	23096084	8		218	220	Major		Light Fractures	Spot Repair fractures	61,600	21,560	83,160
107	4/17/07	46	931			Y	Cerritos Ave	36-049	36-038	36049038	8	VCP	323.4	278	Major		Multiple Cracks	Spot Repair multiple cracks	77,840	27,244	105,084
108	1/7/03	17	6			Y	Jeanine Ln	26-108	26-097	26108097	8	VCP	225	238	Major		Major offset approximately 1"at 224 ft. Pipe drops and camera is blocked from continuing run.	Spot Repair JOL	66,640	23,324	89,964
109	1/23/03	27	11	18	22	Y	Hope St	35-055	35-056	35055056	10	VCP	415	412	Major		Major sag with water level up to 90% and camera submerged. Lateral protruding into line caused camera to be blocked.	Replace pipe	144,200	50,470	194,670
110	1/14/03	24	13	16	14	Y	Orangewood Ave - Maple Grove Park	47-024	41-033	47024033	12	VCP	78	158	Major	13	Object lodged in pipe and major offset blocked camera from continuing run. Several moderate and minor offsets.	Clean pipe. Spot Repair JOM	66,360	23,226	89,586
111	12/13/02	9	1	6	2	Y	Lincoln Ave	08-006	08-003	08006003	15	VCP	357	356	Major		Moderate and minor offsets present.	Spot Repair JOM	186,900	65,415	252,315
112	12/20/02	14	6	8	7	Y	Ball Rd	22-002	22-001	22002001	10	VCP	230	350	Major		Major calcium deposit obstructing approximately 25% of pipe diameter blocked camera from continuing run.	Replace pipe. Slurry Backfill	122,500	42,875	165,375
113	12/19/02	12	30			Y	Walker St	21-106	21-096	21106096	10	VCP	30	101	Major		Calcium deposits obstructing up to 25% of pipe diameter is present.	Replace pipe. Slurry Backfill	35,350	12,373	47,723
114	3/7/07	24	618	1875			Melbourne Dr	21-038	21-040	21038040	8	VCP	334.5	375	Major		Reversal Set-up Section # 1875. GIS Length is 375'. Inspection could not be finished.Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	105,000	36,750	141,750
115	4/2/07	39	845	846			Citation Ave	27-083	27-082	27083082	8	VCP	194	275	Major		Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	77,000	26,950	103,950
116	2/27/07	18	464	465			Alley	19-057	19-056	19057056	8	VCP	47	377	Major		Major calcium blocked up to 25% of pipe diameter, blocked camera	Replace pipe. Slurry Backfill	105,560	36,946	142,506

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Condition Improvement Projects

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							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
117	2/27/07	18	468	469			Alley	19-055	19-054	19055054	8	VCP	15.4	243	Major		GIS Length is 243'. Inpection could not be finished.Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	68,040	23,814	91,854
118	3/7/07	24	547	1874			Yorkshire Dr	21-007	21-008	21007008	8	VCP	208.9	210	Major		Completed. Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	58,800	20,580	79,380
119	4/27/07	54	1200	1212			Alley	25-040	25-030	25040030	8	VCP	270.9	212	Major		Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	59,360	20,776	80,136
120	4/2/07	39	847	1848			Citation Ave	27-082	26-093	27082093	8	VCP	276.6	273	Major		MH 26-093 was MH27-093 on database. GIS checked by AKM. This is 26-093.Reverse Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	76,440	26,754	103,194
121	6/19/07	89	1905				Via Media	19-159	19-146	19159146	8	VCP	111.6	148	Major		Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	41,440	14,504	55,944
122	6/19/07	89	1909				Via Media	19-145	19-139	19145139	8	VCP	56.1	223	Major		Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	62,440	21,854	84,294
123	6/29/07	94	1972				Alley	19-072	19-071	19072071	8	VCP	71.5	238	Major		Major Calcium blocked up to 25% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	66,640	23,324	89,964
124	12/19/02		10	10	27	Y	Orange Ave	15-005	15-004	15005004	8	VCP	348	350	Major		Unable to continue run due to major calcium deposit obstructing 20% of pipe diameter.	Replace pipe. Slurry Backfill	98,000	34,300	132,300
125	3/13/07	28	658	1877		Y	Cumberland Dr	21-030	21-031	21030031	8	VCP	243.1	375	Major		Major Calcium blocked up to 20% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	105,000	36,750	141,750
126	3/7/07	24	546	1873			Yorkshire Dr	21-009	21-008	21009008	8	VCP	109.6	147	Major		Reversal Set-up Section # 1873.GIS length 147'. Major Calcium blocked up to 20% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	41,160	14,406	55,566
127	4/27/07	54	1202				Midway Dr	46-025	46-026	46025026	8	VCP	314.91	355	Major		No Reverse Set Up. GIS Length is 355. Major Calcium blocked up to 20% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	99,400	34,790	134,190
128	3/9/07	26	569	1883			Hanover Dr	21-060	21-061	21060061	8	VCP	144.1	144	Major		Major Calcium blocked up to 20% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	40,320	14,112	54,432
129	12/19/07		2025			Y	Marion Ave	27-050	27-049	27050049	8	VCP	249.26	252	Major		11.7' Heavy Attached Encrustation.Possible infiltrations at Attached Encrustations	Replace pipe. Slurry Backfill	70,560	24,696	95,256
130	6/20/07	90	1929				Alley	19-164	19-064	19164064	8	VCP	29.8	247	Major		Major Calcium blocked up to 20% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	69,160	24,206	93,366
131	7/2/07	95	1998				Via Majorca	19-125	19-126	19125126	8	VCP	144.4	266	Major		Major Calcium blocked up to 20% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	74,480	26,068	100,548
132	1/9/03	23	10	15	14	Y	Samoa St	46-002	40-001	46002001	8	VCP	63	222	Major		High water present causing camera to submerge and CCTV to end. Major calcium deposit also obstructed camera.	Replace pipe. Slurry Backfill	62,160	21,756	83,916
133	12/10/02	7	20			Y	Grindlay St	15-033	09-039	15033039	10	VCP	312	310	Major	8	Major calcium deposits	Replace pipe. Slurry Backfill	108,500	37,975	146,475
134	1/15/03	25	23			Y	Providencia St	41-031	41-030	41031030	8	VCP	331	331	Major	6	High water from 188 - 297 ft. up to 90% depth. Calcium and major offsets of approximately 1/2"-1" present.	Replace pipe. Slurry Backfill	92,680	32,438	125,118

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Condition Improvement Projects

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							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
135	1/16/03	22	19			Y	Cathy Ave	26-097	26-096	26097096	8	VCP	237	240	Major		Multiple cracks in pipe at 134 ft. Longitudinal cracks from 223-226 ft. several calcium deposits. Major sag with water level at 80% and camera submerged at 0-15 ft.	Replace pipe. Slurry Backfill	67,200	23,520	90,720
136	12/13/02	9	3			Y	Lincoln Ave	08-003	08-002	08003002	15	VCP	337	336	Major		Major calcium deposits and offset joint at 235 ft (1/2" vertical and 1" gap). Grease present in line.	Replace pipe. Slurry Backfill	176,400	61,740	238,140
137	12/11/02	8	18			Y	Crescent Ave	02-026	02-025	02026025	12	VCP	347	350	Major		Major sag with camera submerged and flow >65%. Calcium deposits present.	Replace pipe. Slurry Backfill	147,000	51,450	198,450
138	2/6/03		1			Y	Orange Ave	15-001	14-016	15001016	10	VCP	346	350	Major		Two minor cracks present. Calcium and infiltration present. Major sag and high water >70% caused camera to submerge and CCTV to end.	Replace pipe. Slurry Backfill	122,500	42,875	165,375
139	3/15/07	30	679	1886			Graham St	22-030	22-031	22030031	8	VCP	222.4	340	Major		Inspection didn't complete. Heavy DAE	Replace pipe. Slurry Backfill	95,200	33,320	128,520
140	7/2/07	95	1994	1996			Via Largo	19-107	19-105	19107105	8	VCP	195.3	256	Major		Heavy DAZ .	Replace pipe. Slurry Backfill	71,680	25,088	96,768
141	2/22/07	15	365	366			Nancy St	16-058	16-054	16058054	8	VCP	142.7	253	Major		110 feet was not inspected.Heavy DAZ	Replace pipe. Slurry Backfill	70,840	24,794	95,634
142	3/29/07	37	721	722			Christopher St	26-077	26-061	26077061	8	VCP	12.2	378	Major		Heavy DAE	Replace pipe. Slurry Backfill	105,840	37,044	142,884
143	7/2/07	95	1997	2002			Via Majorca	19-126	19-127	19126127	8	VCP	9.9	294	Major		Heavy DAZ	Replace pipe. Slurry Backfill	82,320	28,812	111,132
144	3/29/07	37	717	719			Abraham Ave	26-080	26-079	26080079	8	VCP	221.8	221	Major		Heavy DAZ	Replace pipe. Slurry Backfill	61,880	21,658	83,538
145	2/26/07	17	387	388			Via Verde	19-138	19-131	19138131	8	VCP	299.62	290	Major		Heavy DAZ	Replace pipe. Slurry Backfill	81,200	28,420	109,620
146	3/29/07	37	714	715			Christopher St	26-075	26-076	26075076	8	VCP	165.2	164	Major		GIS Length is 164'. Heavy DAZ	Replace pipe. Slurry Backfill	45,920	16,072	61,992
147	1/6/03		4	13	7	Y	Marion Ave	25-155	25-154	25155154	8	VCP	281	301	Major		Major calcium obstructing up to 15% of pipe diameter blocked camera.	Replace pipe. Slurry Backfill	84,280	29,498	113,778
148	12/19/02	12	25	7	26	Y	Walker St	21-100	21-098	21100098	10	VCP	169	283	Major		Several major calcium deposits obstructing up to 15% of pipe diameter. Unable to continue due to camera blocked.	Replace pipe. Slurry Backfill	99,050	34,668	133,718
149	12/10/02	7	17			Y	Bishop St	15-011	15-034	15011034	10	VCP	345	345	Major	8	Major calcium deposits at joints obstructing up to 15% of pipe diameter.	Replace pipe. Slurry Backfill	120,750	42,263	163,013
150	1/6/03	20	3	13	5	Y	Marion Ave	25-156	25-155	25156155	8	VCP	128	301	Major		Major calcium obstructing up to 15% of pipe diameter blocked camera.	Replace pipe. Slurry Backfill	84,280	29,498	113,778
151	12/19/02	12	21	7	23	Y	Walker St	21-103	21-102	21103102	10	VCP	345	350	Major		Major Calcium obstructing up to 15% of pipe diameter blocked camera.	Replace pipe. Slurry Backfill	122,500	42,875	165,375
152	1/2/03	16	18			Y	Marion Ave	26-090	26-089	26090089	8	VCP	229	231	Major		Major sag caused camera to submerge. Major calcium present.	Replace pipe. Slurry Backfill	64,680	22,638	87,318
153	1/3/03	20	11	11	12	Y	Myra Ave	27-027	27-026	27027026	10	VCP	171	267	Major	11	Camera was blocked due to major calcium deposit.	Replace pipe. Slurry Backfill	93,450	32,708	126,158
154	1/9/03	23	8	15	9	Y	Samoa St	46-003	46-002	46003002	8	VCP	248	247	Major		Major calcium deposits obstructing up to 15% caused camera to be blocked. Major sag with 60% depth and camera submerged.	Replace pipe. Slurry Backfill	69,160	24,206	93,366
155	1/15/03	25	24			Y	Orangewood Ave	41-036	41-032	41036032	8	VCP	113	145	Major	5	Major calcium deposit obstructing approximately 15% of pipe diameter caused camera to be blocked.	Replace pipe. Slurry Backfill	40,600	14,210	54,810

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
156	12/23/02	13	20	8	21	Y	Ball Rd	21-093	21-092	21093092	15	VCP	331	334	Major		Calcium deposits obstructing up to 15% of pipe diameter. Camera blocked due to calcium.	Replace pipe. Slurry Backfill	175,350	61,373	236,723
157	4/2/07	39	970	971			Olga St	27-039	27-040	27039040	8	VCP	289.2	323	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	90,440	31,654	122,094
158	2/28/07	19	489	1887			Paseo De Oro	19-096	19-095	19096095	8	VCP	121	229	Major		Reversal Set-up Section # 1887.GIS length 229'. Inspection could not be finished. Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	64,120	22,442	86,562
159	3/7/07	24	540	541			Salisbury Ln	21-003	21-005	21003005	8	VCP	251.7	252	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	70,560	24,696	95,256
160	3/7/07	24	542	545			Salisbury Ln	21-005	21-009	21005009	8	VCP	231.3	256	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	71,680	25,088	96,768
161	6/25/07	93	1954				Via Sonoma	19-165	19-079	19165079	8	VCP	269.17	270	Major		Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	75,600	26,460	102,060
162	6/19/07	89	1906				Via Media	19-146	19-145	19146145	8	VCP	196.8	242	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	67,760	23,716	91,476
163	6/25/07	93	1948				Alley	19-054	19-164	19054164	8	VCP	119.8	247	Major		Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	69,160	24,206	93,366
164	6/25/07	93	1956				Via Encinas	19-078	19-076	19078076	8	VCP	129.74	130	Major		Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	36,400	12,740	49,140
165	6/25/07	93	1958				Via Encinas	19-074	19-075	19074075	8	VCP	96.4	240	Major		Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	67,200	23,520	90,720
166	6/18/07	88	1894			Y	Avenida Montery	19-130	19-131	19130131	8	VCP	168.8	215	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	60,200	21,070	81,270
167	6/8/07	82	1809				Valley View st	28-043	28-044	28043044	8	VCP	158.9	233	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	65,240	22,834	88,074
168	6/20/07	90	1926				Alley	19-063	19-064	19063064	8	VCP	30.1	123	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	34,440	12,054	46,494
169	4/24/07	51	1158	1159			Barbados Ave	41-003	41-004	41003004	8	VCP	366.9	368	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	103,040	36,064	139,104
170	6/19/07	89	1897	1898			Avenida Sevilla	19-141	19-140	19141140	8	VCP	296.9	298	Major		Major Calcium blocked up to 15% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	83,440	29,204	112,644
171	1/7/03		14	13	16	Y	Marion Ave	25-121	25-116	25121116	8	VCP	123	252	Major		Crack in pipe at crown at 0 ft. Major calcium deposit and sag present. Camera blocked due to major calcium deposit obstructing approximately 5% of pipe diameter.	Replace pipe. Slurry Backfill	70,560	24,696	95,256
172	1/6/03	19	8	13	9	Y	Marion Ave	25-154	25-128	25154128	8	VCP	302	301	Major		Several major calcium deposits present in line. Heavy gas, hard to inspect.	Replace pipe. Slurry Backfill	84,280	29,498	113,778
173	4/3/07	40	986	987			Cynthia Cir	27-058	27-057	27058057	8	VCP	190.6	184	Major		Inspection Completed. Heavy Min. Deposits	Replace pipe. Slurry Backfill	51,520	18,032	69,552
174	4/11/07	42	1005	1006			Angela Ave	28-070	28-065	28070065	8	VCP	249.2	250	Major		Inspection completed. Heavy Min Deposits	Replace pipe. Slurry Backfill	70,000	24,500	94,500
175	4/24/07	51	1160	1822			Barbados Ave	41-004	41-005	41004005	8	VCP	343	345	Major		Inspection Completed. Heavy DAE	Replace pipe. Slurry Backfill	96,600	33,810	130,410
176	4/27/07	54	1211	1268			Apia Dr	46-026	46-022	46026022	8	VCP	234	235	Major		.Inspection completed. Heavy DAE	Replace pipe. Slurry Backfill	65,800	23,030	88,830
177	3/29/07	37 and 39	724	975			Marcella Ave	27-035	27-036	27035036	8	VCP	335.9	335	Major		Inspection completed.Heavy Mineral Deposits.	Replace pipe. Slurry Backfill	93,800	32,830	126,630
178	6/21/07	91	1934	1935			Cambridge St	13-027	13-028	13027028	8	VCP	387.9	388	Major		Inspection completed. Heavy DAZ	Replace pipe. Slurry Backfill	108,640	38,024	146,664

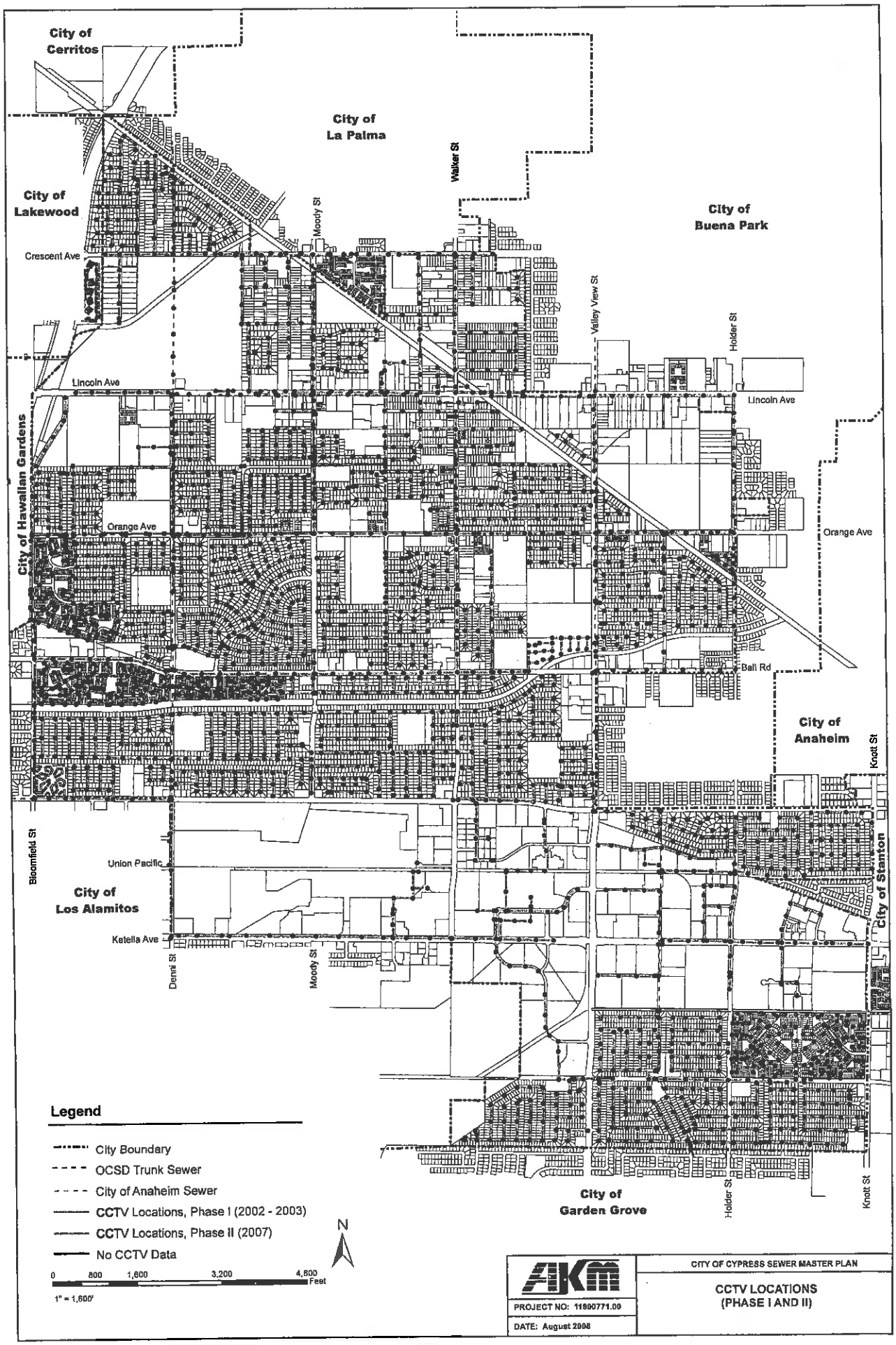
Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
179	3/9/07	26	571	1884			Hanover Dr	21-060	21-059	21060059	8	VCP	141.7	146	Major		GIS Length is 146'. Inspection completed. Heavy DAE	Replace pipe. Slurry Backfill	40,880	14,308	55,188
180	12/20/07		2028	2091	2029	Y	Rome St	21-072	21-073	21072073	8	VCP	4.9	65	Major		Heavy deposit.GIS Length is 65'. There is no inspection 0-60.1'. Must revideo	Replace pipe. Slurry Backfill	18,200	6,370	24,570
181	12/31/02	16	5			Y	Lee Dr	23-037	23-036	23037036	8	VCP	348	350	Major		Several sags present. Major and minor calcium deposits throughout the line.	Replace pipe. Slurry Backfill	98,000	34,300	132,300
182	12/9/02	6	4	4	5	Y	Grindlay St	15-066	15-068	15066068	8	VCP	165	279	Major		Major calcium deposits at joints. Obstructing up to 10% of pipe diameter. Major sags with water level >80% and causes camera to submerge.	Replace pipe. Slurry Backfill	78,120	27,342	105,462
183	1/8/03	21	24	13	25	Y	Apia Dr	46-015	46-014	46015014	8	VCP	253	250	Major		Camera blocked due to major calcium deposit in line obstructing approximately 10% of pipe diameter. One moderate offset with gap present at 111 ft.	Spot Repair Major Calcium Deposit. Slurry Backfill	70,000	24,500	94,500
184	1/7/03	19	10	13	11	Y	Marlon Ave	25-128	25-127	25128127	8	VCP	252	252	Major		Calcium deposits present for length of pipe. Camera blocked due to deposit obstructing approximately 10% pipe diameter.	Replace pipe. Slurry Backfill	70,560	24,696	95,256
185	1/13/03		2	14	5	Y	Myra Ave	27-100	26-083	27100063	12	VCP	309	309	Major	11	Several major calcium deposits up to 10% of pipe diameter obstructed. Major sags with water level up to 80% present. Run ends due to submerged camera.	Replace pipe. Slurry Backfill	129,780	45,423	175,203
186	1/14/03	22	12	14	13	Y	Myra Ave	25-130	25-125	25130125	12	VCP	253	252	Major		Several major calcium deposits obstructing up to 10% of pipe diameter. Caused camera to be blocked	Replace pipe. Slurry Backfill	105,840	37,044	142,884
187	1/13/03		10	14	11	Y	Myra Ave	25-131	25-130	25131130	12	VCP	253	252	Major		Several major calcium deposits obstucting up to 10% of pipe diameter. Caused camera to be blocked.	Replace pipe. Slurry Backfill	105,840	37,044	142,884
188	1/7/03	21	17	13	18	Y	Marlon Ave	25-116	25-115	25116115	8	VCP	158	252	Major		Major calcium deposits obstructing approximately 10% pipe diameter ended CCTV run due to camera being blocked.	Replace pipe. Slurry Backfill	70,560	24,696	95,256
189	12/11/02	8	15	5	16	Y	Crescent Ave	02-028A	02-027	02028A027	12	VCP	199	279	Major		Major calcium deposit that obstructed 10% of pipe diameter and blocked camera. Major sag and high water >65% present at start of run.	Replace pipe. Slurry Backfill	117,180	41,013	158,193
190	3/7/07	24	549	1876			Brunswick Dr	21-035	21-034	21035034	8	VCP	323.7	375	Major		Inspection could not be finished. Major Calcium blocked up to 10% of pipe diameter, blocked camera.	Replace pipe. Slurry Backfill	105,000	36,750	141,750
191	12/20/02		8	18	25	Y	Ball Rd	22-001	21-094	22001094	8	VCP	330	320	Major		Calcium deposit obstructing approximately 5% pipe diameter blocked camera from continuing run.	Replace pipe. Slurry Backfill	89,600	31,360	120,960
192	1/13/03	21	9			Y	Myra Ave	25-137	25-131	25137131	12	VCP	250	254	Major		One major calcium deposit obstructing approximately 10% of pipe diameter	Spot Repair Major Calcium Deposit. Slurry Backfill	106,680	37,338	144,018
193	6/18/07	88	1889				Paseo De Oro	19-094	19-095	19094095	8	VCP	136	137	Major			Replace pipe. Slurry Backfill	38,360	13,426	51,786
194	6/20/07	90	1914				Via Entrada	19-048	19-047	19048047	8	VCP	313.9	314	Major		Inspection completed	Replace pipe. Slurry Backfill	87,920	30,772	118,692
195	6/18/07	88	1891				Avenida Montery	19-127	19-128	19127128	8	VCP	277.1	275	Major			Replace pipe. Slurry Backfill	77,000	26,950	103,950
196	5/7/07	60	1365				Easement	26-034	26-033	26034033	8	VCP	109.88	109	Major		Continuous Heavy Roots	Root treat and cut	Maintenance		

Table 1-13
Condition Improvement Projects

Condition Ranking	CCTV Date	Tape/DVD No.	Inspection No	Reversal Tape/DVD No.	Reversal Inspection No.	Recording Watched	Location	Manhole		Pipe					Priority	Capacity Project No.	Comments	Recommendations based on Pipe Defects	Construction Cost ($)	Engineering and Administration Cost ($)	Total Cost ($)
							St Name	U/S MH	D/S MH	Sewer No.	Size (in)	Material	CCTV Length (ft)	GIS Length (ft)							
197	5/8/07	61	1374				Larwin Ave	26-043	26-041	26043041	8	VCP	284.04	285	Major		Continuous Heavy Rooots	Root treat and cut	Maintenance		
198	12/16/02		17	10	26	Y	Moody St	14-034	08-021	14034021	8	VCP	78	90	Major		Camera underwater at 73 ft and could not continue CCTV.	Replace	25,200	8,820	34,020
														Total Severe	12,349				Total Severe	3,641,190	1,274,417	4,915,607
														Total Major	40,662				Total Major	12,271,560	4,295,046	16,566,606
														Grand Total	53,011				Grand Total	15,912,750	5,569,463	21,482,213

Attachment 3.4

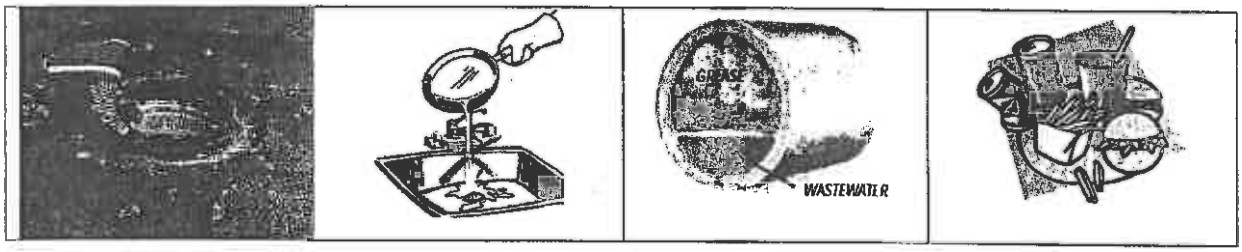

City of Cerritos
City of La Palma
City of Lakewood
City of Buena Park
City of Hawaiian Gardens
City of Anaheim
City of Los Alamitos
City of Stanton
City of Garden Grove
Walker St
Moody St
Valley View St
Holder St
Knott St
Crescent Ave
Lincoln Ave
Orange Ave
Ball Rd
Bloomfield St
Union Pacific
Katella Ave
Denni St
Legend
City Boundary
OCSD Trunk Sewer
City of Anaheim Sewer
CCTV Locations, Phase I (2002 - 2003)
CCTV Locations, Phase II (2007)
No CCTV Data
N
0 800 1,600 3,200 4,800 Feet
1" = 1,600'
CITY OF CYPRESS SEWER MASTER PLAN
CCTV LOCATIONS (PHASE I AND II)
PROJECT NO: 11800771.00
DATE: August 2008

FOG PROGRAM ATTACHMENTS

1. Attachment 4.1: City of Cypress Fats, Oils and Grease Control Program Manual
2. Attachment 4.2: City of Cypress Grease Interceptor Tank With Sample Box Standard Specification No. 299
3. Attachment 4.3: Fats, Oils, and Grease Control Program, Food Service Establishment Regulations Frequently Asked Questions

Attachment 4.1

FATS, OILS, AND GREASE CONTROL PROGRAM MANUAL



DEPARTMENT OF PUBLIC WORKS
(714) 229-6740

Gonzalo Vazquez
Water Quality Manager

Douglas A. Dancs, P.E.
Director of Public Works/City Engineer

Section Listing

List of Acronyms

BMP	Best Management Practices
CSA	Compliance Schedule Agreement
EPA	Environment Protection Agency
FOG	Fats, Oils, and Grease
FSE	Food Service Establishment
GI	Grease Interceptor
O&G	Oils and Grease (a.k.a. fats, oils, and grease)
SSO	Sanitary Sewer Overspill (a.k.a. sewer overflows, sewer spills)
SWRCB	California State Water Resource Control Board
RWQCB	Regional Water Quality Control Board
UPC	Uniform Plumbing Code

Forward

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 FSE's.

The current edition of the Uniform Plumbing Code requires FSE's that have the potential to produce a significant amount of FOG to have grease control devices. Many FSE's, such as restaurants within the City do not have grease control devices. These commercial FSE's 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.

The purpose of the FOG Discharge Manual 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 FSE's discharging into the City's sewer system to protect the public health and safety. The sections of this manual shall apply to the direct or indirect discharge of all wastewater or waste containing FOG into City's sanitary sewer collection system.

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, it is also essential to establish a FOG program for the disposal of FOG and other insoluble waste discharges from FSE's into the City's sewer system. Compliance requirements shall also be made to allow the City to meet applicable policies at the Federal and State level.

Certain FSE's within the boundaries of the City do not discharge wastewater into the City's sewer system. These facilities discharge into sewer systems operated by Regulatory Agencies and sanitation districts other than the City. Such FSE's 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 FSE's, this Chapter is not intended to apply to FSE's or other dischargers, which do not discharge into the City's sanitary sewer system.

This manual shall also establish 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

Introduction

What is FOG? Where does it come from?

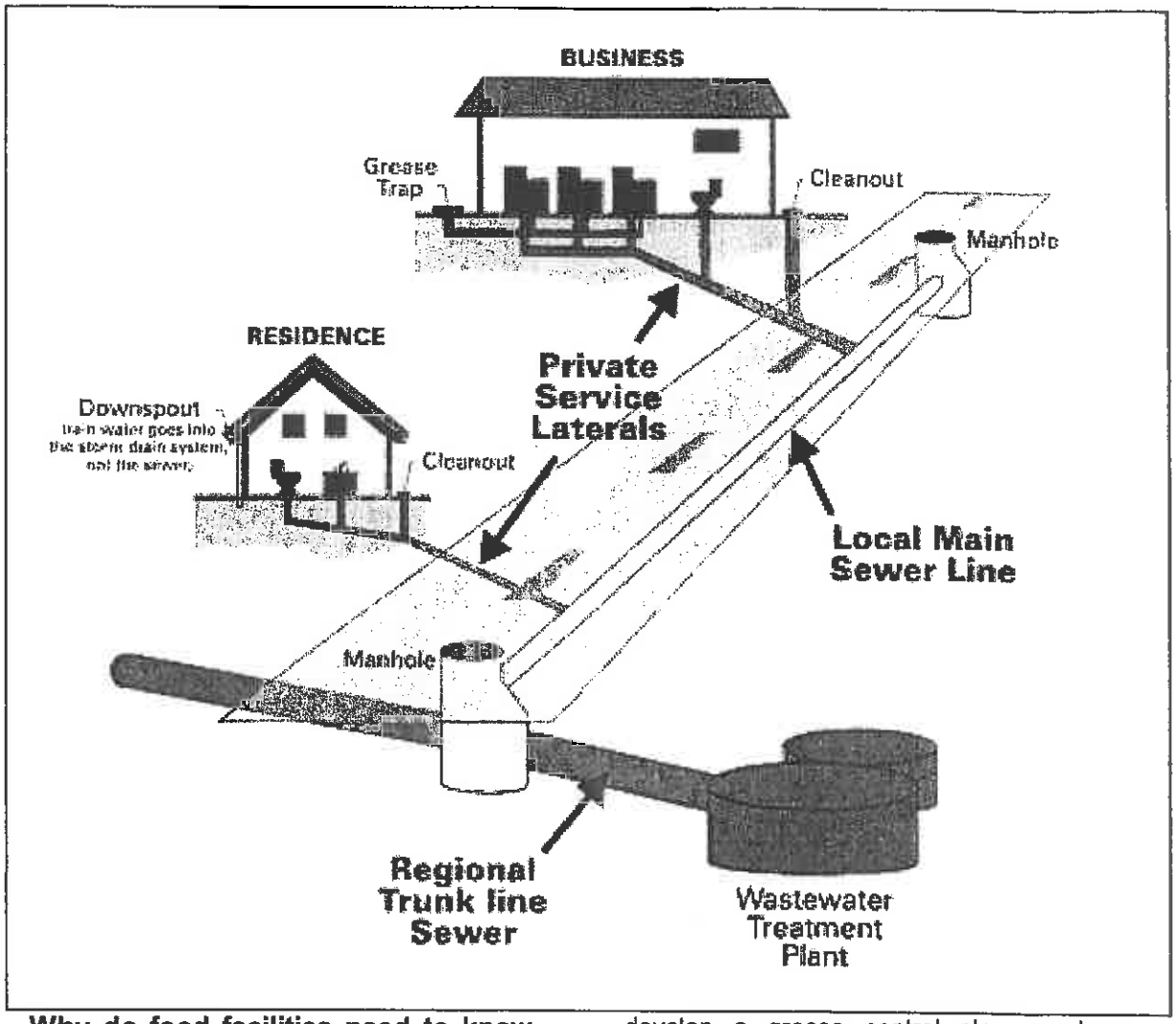
"FOG" refers to fats, oils and grease, which are commonly found in such things as meats, sauces, gravy, dressings, deep-fried foods, baked goods, cheeses, butter and others.

Residential users and many different businesses generate FOG wastes by processing or serving food, including; eating and drinking establishments, caterers, hospitals, nursing homes, day care centers, schools and grocery stores.

What's the problem with FOG?

Grease is often washed into the plumbing system, usually through the kitchen sink. Grease sticks to the insides of sewer pipes (both on your property and in the streets) and over time, the grease can build up and block the entire pipe.

When sewer pipelines become blocked with grease, sewage flows out of maintenance (manholes) holes and into the storm drains. The water in storm drains flows into the river channels and eventually makes its way into the ocean. Sewer overflows pose a threat to public health, adversely affect aquatic life, and are expensive to clean up.



Why do food facilities need to know about FOG?

The 2000-2001 Orange County Grand Jury conducted an investigation among the 35-sewer collection and treatment agencies in Orange County. It found that an accumulation of fats, oils, and grease discharged from restaurants is the leading cause of sanitary sewer overflows.

In February 2002, the Santa Ana Regional Water Quality Control Board adopted Order R8-2002-0014, which prohibits sewer overflows and requires Orange County cities to monitor and control these overflows. Cities are also required to develop and implement a FOG Control Program. The program will require restaurants and food preparation facilities to follow but not be limited to implementing kitchen BMP's, consider installing a grease interceptor, develop a grease control plan, produce waste-hauling records, and/or share the costs incurred by the City to clean-out blockages in the sewer line.

How is FOG monitored? How is it enforced?

The City of Cypress maintains a record of maps of the entire sewer collection systems in the city and uses video surveillance cameras to identify blockages caused by FOG wastes. The City of Cypress can use this information to identify the sources that are contributing to the sewer blockages, and can initiate enforcement actions against businesses to insure compliance with the State and City laws. As mentioned previously, physical damage can occur when sewer overflows of raw sewage backs up into a residence or business, as a result of sewer pipes blocked by FOG wastes.

When the City of Cypress initiates enforcement actions for sewer system blockages, those responsible can be liable for:

- Physical/monetary damages caused to others
- Costs incurred by City of Cypress to respond to the blockage
- Fines and penalties

How to report Sewage Spills

Any persons or businesses affected by a sewer collection system blockage or overflow can contact City of Cypress at (714) 229-6760 or (714) 229-6740 to report. Contact the Police Department after hours to report spills and do not leave a message.

Section I: Legal Requirements

Codes, Fines, and Contact Information

Allowing sewage to discharge to a gutter or storm drain may subject FSE's to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts. Here are the pertinent codes, fines, and agency contact information that apply.

City of Cypress Department of Public Works (714) 229-6740

Contact the Police Department after hours to report spills.DO NOT LEAVE A MESSAGE

City of Cypress Municipal Code, Chapter 13.82 "No 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."

Orange County Stormwater Program 24-Hour Water Pollution Reporting Hotline (714) 567-6363

County and city water quality ordinances prohibit discharges containing pollutants.

Orange County Health Care Agency
Environmental Health (714) 667-3600
California Health and Safety Code, Sections 5410-5416

No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution, or a nuisance.

Any person who causes or permits a sewage discharge to any state waters:

- must immediately notify the local health agency of the discharge.
- shall reimburse the local health agency for services that protect the public's health and safety (water-contact receiving waters).
- who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

Regional Water Quality Control Board
Santa Ana Region (909) 782-4130

- Requires the prevention, mitigation, response to and reporting of sewage spills.

California Office of Emergency Services
(800) 852-7550
California Water Code, Article 4, Chapter 4, Sections 13268-13271
California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters shall immediately notify the Office of Emergency Services.
- Any person who fails to provide the notice required by this section is guilty of a misdemeanor and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

Agency Roles

- **City of Cypress Sewer/Public Works Departments**—Responsible for protecting city property and streets, the local storm drain system, sewage collection system and other public areas.
- **Public Sewer/Sanitation District**—Responsible for collecting, treating, and disposing of wastewater.
- **County of Orange Health Care Agency**—Responsible for protecting public health by closing ocean/bay waters and may close food-service businesses if a spill poses a threat to public health.
- **Regional Water Quality Control Boards**—Responsible for protecting State waters.
- **Orange County Stormwater Program**—Responsible for preventing harmful pollutants from being discharged or washed by stormwater runoff into the municipal stormdrain system, creeks, bays and the ocean.

Section II: Basic Requirements of the FOG Program

Kitchen Best Management Practices

This manual provides guidance and recommendations for all FSE's provided wastewater services by the City of Cypress to conform to BMPs to control FOG wastes. BMPs are practices, procedures, and maintenance activities performed by FSE's to reduce the FOG in the Wastewater discharge. BMPs are described in greater detail in the section of this manual titled "Kitchen Best Management Practices." FSE's causing or contributing to wastewater system blockages will be required to conform to BMPs.

The legal authority for requiring conformance to BMPs is contained in City Code § 13-85

Record keeping and Reporting Requirement

This manual provides a sample record-keeping report that FSE's shall use to document cleaning and inspection of grease control devices. Examples of this report are contained in the Appendix of this manual. FSE's will be required to file such reports. If there are multiple establishments discharging to an obstructed pipeline it will be assumed that those establishments not following BMPs, contributed to the sanitary sewer overflow.

The legal authority for requiring FSE's to complete and submit a report is contained in City Code § 13-101.

Compliance Schedule Agreement (CSA)

FSE's may be required to enter into a compliance service agreement . Criteria to require FSE's to enter into a CSA may include, but are not necessarily limited to, conditions in the wastewater collection line serving the FSE's; the degree of conformance to BMPs by the FSE; and the compliance history of the FSE at that location or other locations (has the establishment caused or contributed to wastewater system blockages). A CSA would include, but not be limited to include: BMPs used by the establishment (e.g., procedures to prevent discharges of waste fat, oils and grease, waste FOG handling, storage, and disposal procedures); a description of the FSE operation; a description of the location and size of any Grease Interceptors and Grease Traps present; a description of how the Grease Interceptor or Grease Trap will be maintained (cleaned), including frequency of cleaning; and a description of how the FSE will comply with reporting requirements.

The legal authority for requiring FSE's to enter into a CSA is contained in City Code § 13-107.

Grease Interceptors

There are Uniform Plumbing Code requirements and Standards and Specifications for FSE's to install Grease Interceptors and Grease Traps to reduce FOG in the Wastewater discharges. These requirements are discussed in the section of this manual titled "Grease Interceptor."

The criteria for requiring the installation of a grease interceptor at an existing FSE include frequency of noncompliance, the severity of the noncompliance (damages/complaints), and good faith efforts of the user to follow BMPs to control FOG. **Refer to the section under "Variances and Waivers" and "Permit Requirements" for more details.**

The legal authority to require the installation of a grease interceptor by FSE's is contained in City Code § 13-86.

FOG Wastewater Discharge Permit

Any FSE proposing to discharge wastewater containing FOG into the City's sewer system is required to obtain a FOG Wastewater Discharge Permit from the City when applying for or renewing its annual business license. Compliance will be required before the permit is issued. The City can refuse to issue a certificate of occupancy for any new construction or occupancy unless a FSE has complied with the ordinance **(§ 13-91).**

Section III: KITCHEN BEST MANAGEMENT PRACTICES

Description and Applicability

BMPs are procedures and practices that reduce the discharge of FOG to the building drain system and to the wastewater system. BMPs can be implemented effectively in FSE's. Existing establishments shall use BMPs to control FOG in the discharge and to prevent obstructions to the flow in sewer pipes.

Food Service Establishments (FSE)

The following BMPs are provided to assist FSE's with development of procedures and/or practices to reduce the amount of FOG in their wastewater discharge. Implementation of BMPs has the added benefit of reducing FOG and solids accumulation in Grease Traps and Grease Interceptors, thereby reducing the maintenance needs and costs of these control devices. These efforts can also minimize the likelihood that an establishment will cause a Wastewater System blockage that results in a backup into their facility or their neighbors' homes or businesses, a release to the environment, and/or an enforcement action. Implementation of BMPs can also help reduce a FSE's maintenance needs and costs for building Service Line cleaning.

Because of the variety of establishments that generate FOG, every BMP described in this manual may not apply to every establishment. It is recommended that FSE operators identify the FOG sources at their establishment and adopt BMPs to fit the establishment's needs. Operators are encouraged to contact the City's FOG Control Program (714) 229-6752, if assistance with BMPs selection is desired.

Employee Training and Awareness

The success of a FSE's BMPs program is largely dependent upon employees. To promote effective employee implementation:

- Train employees on the BMPs that have been adopted for their establishment. All FSE's should instruct employees not to pour FOG down the drain and not to use the sinks to dispose of food scraps.
- Use the Public Education Materials and opportunities described in this manual (See Table of Contents).
- Post "No Grease" signs above sinks and on the front of dishwashers. Signs should be written in the language(s) that is commonly spoken by employees.

Garbage Disposals and Drain Screening

Excluding food particles from the Wastewater System can eliminate a large amount of FOG from a FSE's discharge. To practice this:

- Disconnect or minimize the use of garbage disposals and use "dry" clean-up methods (described below). Operators can reduce FOG discharge by up to 50 percent by disconnecting their garbage disposals and scraping food into the trash.

- Retain or install a fine meshed screen (1/8-inch and 3/16-inch screen openings are recommended) in the drain of each kitchen, mop, and hand sink. Clean drain screens frequently by placing the collected material in the garbage.

All FSE's are required to remove all food grinders upon: (i) major operational changes take place; or (ii) within 180 days of the effective date of the ordinance City Code § 13-84.

Dry Clean up

Remove food waste with "dry" methods such as scraping, wiping, or sweeping before using "wet" methods that use water. Wet methods typically wash the water and waste materials into the drains where it eventually collects on the interior walls of drainage pipes. To practice dry clean-up:

- Use rubber scrapers to remove food particles, fats, oils, and grease from cookware, utensils, chafing dishes, and serving ware. Then place the removed food particles and FOG in the garbage.

- Use paper towels to wipe down all work areas.

- Use food grade paper to soak up oils and grease under fryer baskets.

Spill Prevention and Clean-up

Preventing spills reduces the amount of waste on food preparation and serving areas that will require clean up. In addition, 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 when transporting spillable materials, particularly liquid wastes containing fats, oils, and grease.

- Provide employees with proper tools (e.g., ladles, ample containers, etc.) to transport materials without spilling.

Practice effective spill containment and clean up. Spills of dry ingredients should be swept- up or vacuumed to prevent washing them into sinks or floor drains. For FOG spills:

- Block off all sinks and floor drains near the spill.

- Cover the spill with absorbent material (e.g., sand, saw dust, salt, paper towels, etc.).

- Remove spilled material and place it in the garbage.

- Use wet clean-up methods only to remove trace residues.

FSE's that use large amounts of cooking fats (e.g., deep fat fryers) should develop and post their spill response procedure and maintain spill containment and absorbent supplies.

Dishwashing and Equipment Cleaning

Proper dishwashing and cleaning methods can reduce the entry of solids and FOG into the Wastewater System. These methods include:

- Use disposable paper products, rather than dishware, to minimize or eliminate dishwashing.

- Pre-washing dishes and cookware with hot water and no soap, prior to use of the dishwasher or three-compartment sink, can reduce the discharge of FOG discharge by 25 percent. Pre-wash sinks used for this purpose must be connected to a Grease Trap.

- Prior to washing deep fat fryers, use a rubber spatula to squeegee down the sides, while grease and oils are still warm, and then wipe the fryer with paper towels. Dispose of the paper towels in the garbage.

- Before washing grill and roaster/broiler drip pans, empty their contents into a waste grease container and then wipe them with paper towels. Dispose of the paper towels in the garbage.

- Pour all liquid grease and oils from pots and pans into a waste grease container that is stored at the pot-washing sink,

and then scrape out the solidified grease, if present.

- Capture accumulated oils, during the cleaning of stoves and ventilation/exhaust hoods, and dispose of it in the garbage, after absorbing all free liquid.

Recycling

Think of oils and grease as a valuable commodity. When using deep fat fryers or any process that requires or produces large amounts of plant or animal byproducts, collect the oils and fats. Recycle the oils and fats through one of the area's recycling companies. This is the preferred method of disposal for FSE's that produce any volume of food waste. To practice recycling:

- Never dispose of fryer-vat, waste oils and fats down the drain, as this material is usually clean enough to be recycled.
- Collect and store fryer-vat waste in a rendering tank. Most recycling companies will provide outside receptacles for storage until pickup. Some companies will offer services free-of-charge, and others will give a rebate on the materials collected.

Beneficial Use of Food Wastes

Food wastes can be put too beneficial use, rather than simply discarding them. To do this:

- Contact your local health department to approve the use of food waste.

Grease Traps

For indoor Grease Traps to be effective, the units must be properly sized, constructed, and installed in a location to provide easy access for cleaning and an adequate retention time for settling and accumulation of the FOG. If the units are too close to the FOG discharge and/or do not have enough volume to allow accumulation of the FOG, the emulsified oils will pass through the unit without being captured. In addition:

- It is recommended that FSE's inspect indoor Grease Traps every month. These devices are less effective if the grease occupies greater than 25 percent of the holding capacity. If the grease occupies greater than 25 percent of the trap's holding capacity, the FSE should perform a full cleaning of the Grease Trap (removing all liquids and solids and scraping the walls). A monthly, full cleaning of Grease Traps is recommended. If less than 75 percent of the trap capacity remains, the trap should be cleaned more often than once per month.
- Confirm that Grease Traps contain their internal baffles and inlet piping flow restrictors/air relief during every inspection and cleaning. These components aid in grease removal by reducing turbulence and increasing holding time within the trap.
- It is required that FSE's maintain a record that documents the cleaning activities for indoor Grease Traps. Records should include the name of employee who performed the cleaning, date/time of cleaning, amount of grease removed, and the disposal location for the grease. An example of a form that could be used to maintain such records is contained in the Appendix of this manual, titled "Maintenance Report for Grease Trap".

Building Drains and Services Maintenance

City Code requires proper maintenance of building drains and sanitary service lines. FOG and debris accumulation in these plumbing structures can cause or contribute to sanitary sewer backups and overflows. To reduce these accumulations:

- It is recommended that FSE's have their building drains and service lines professionally cleaned at least once per year.

Section IV: Grease Interceptors

Description and Applicability

The installation and maintenance of a grease interceptor is an important measure in ensuring that a FSE does not contribute to problems with the wastewater collection system. Grease interceptors differ from grease traps, which are small indoor

devices. A grease interceptor is an outside, underground multi-compartment tank that reduces the amount of pollution (FOG) in Wastewater, before discharge into the wastewater collection system. Grease interceptors are two-compartment units that apply a physical separation process to detain wastewater and allow FOG and water to separate due to differences in specific gravity. The separated FOG rises to the top, water flows to the wastewater system from below, and solid materials settle on the bottom. The floating grease layer is prevented from flowing to the wastewater system by a "Tee" or baffle that is installed on the effluent chamber of the interceptor. The detention capacity of the unit decreases as grease and solids accumulate; therefore, regular pumping, cleaning, and maintenance of grease interceptors are essential to ensure proper operation. For grease interceptors to be effective, the units must be properly sized, constructed, and installed in a location that provides easy access for inspection and cleaning. Grease interceptors are pretreatment facilities that are subject to plan submission and operations requirements of the City Code § 13-86.

Installation Requirements

General

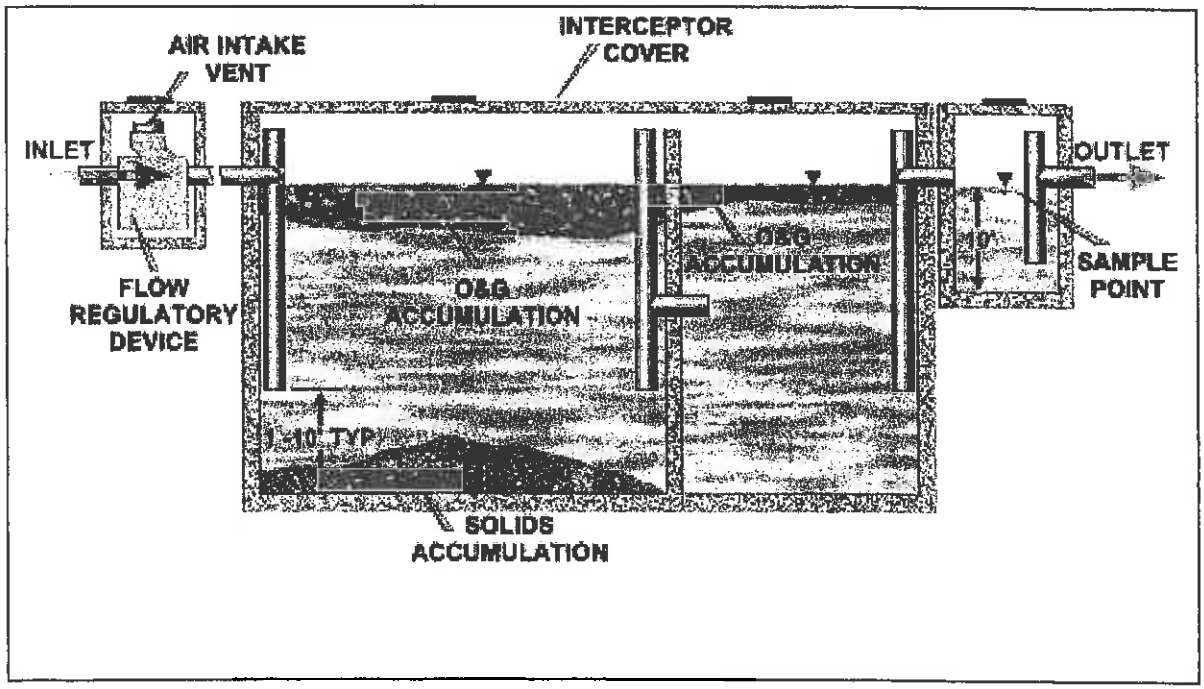
Individual grease interceptors are required for FSE's, whether or not such facilities are located in a separate building or structure or occupy space in a building or structure that is occupied by other businesses. If the volume or nature of food service provided by the establishment dictates significant food preparation, operation of a garbage grinder, and automatic dishwasher, a discharge of FOG waste is highly likely and a grease interceptor is required. There are some exceptions to the requirement for a grease interceptor, pursuant to the conditions set in the section "Variances and Waivers" below.

Each new grease interceptor or grease trap that is installed to replace or upgrade existing grease traps or grease interceptors will be required to meet all criteria stated in the current uniform plumbing code.

Developers of shopping centers currently are encouraged by the City of Cypress to install two dedicated sanitary service lines, stub outs to direct the kitchen wastes of future food service facilities into an outside grease interceptor, then return the effluent from the grease interceptor back into the building sanitary sewer.

For properties with multiple FSE's on a single parcel, each FSE shall be individually and separately responsible for installation and maintenance of the grease interceptor. A single grease interceptor can be used to service multiple FSE's only upon approval by the Director (City Code § 13-88).

Variances and Waivers



Grease interceptors shall be required for all new and existing FSE's during the plan review/building permit process. A variance or a waiver may be granted when certain terms and conditions are met (§13-87C). Please also refer to the section heading "Permits" for details.

Conditions for a Variance (§ 13-87A):

(1) An alternative technology that is equally effective in controlling FOG discharge and that it is impossible to install a grease interceptor

(2) FSE demonstrates to Director's satisfaction that FOG discharge is negligible and will have insignificant impact to sewer system; or

Conditions for a Waiver (§ 13-87B):

In the case when conditions for a variance cannot be met, a waiver from grease interceptor requirements may be granted with the charge of a grease disposal mitigation fee. This fee would cover the costs for the City of Cypress to perform regular sewer pipe cleanings in areas with potential to cause sewer blockages and overflows.

However, a waiver from installing a grease interceptor **would not be granted** if either:

(1) An FSE applies for a discretionary permit; or

(2) A major remodeling of an FSE involving $50,000 or more is done and involves any one or more combination of the following:

(i) Under slab plumbing in the food processing area

(ii) A 30% increase in net public seating area

(iii) A 30% increase in kitchen size area

(iv) Any change in size or type of food preparation equipment.

Installation Specifications

Grease interceptors shall be installed in conformance with the current version of UPC Appendix H for the installation of grease interceptors. This document includes detailed specifications for the following:

- Required and prohibited interceptor connections,
- Design requirements,
- Siting requirements,
- Maintenance requirements,
- Sizing criteria, and
- Variances.

In addition, this manual recommends that all grease interceptors be installed in such a manner that they can be accessed and properly maintained 24 hours per day. Manhole covers are required to be accessible at all times. Therefore, interceptor manhole covers should not be covered with asphalt, concrete, landscaping, or other materials. If a grease interceptor is located in a landscaped area, all access manhole frames and covers shall have a twelve (12) inch wide concrete collar.

Additional Considerations

It is important for a FSE to weigh costs and benefits and consider operational characteristics when evaluating grease interceptor design and capacity needs. While the initial capital investment may be less with a smaller-capacity grease interceptor, an establishment risks paying more in pumping and maintenance fees and possibly fines should the interceptor prove to be inefficient in meeting FOG requirements. The following is a list of changes that could initiate an increase in FOG discharges and expose owners of FSE's to possible violations and sewage spill overflows:

- Menu expansion
- Seating capacity expansion
- Menu changes
- Changes in facility management and the use of BMPs

Therefore, FSE operators are encouraged to consider the following when selecting and installing a grease interceptor:

- Plan for the worst-case scenario, or at the very least, invest in a grease interceptor that is slightly larger than the

minimum size calculated based on the current version of the UPC.

- Consider physical aspects of the building (size, parking spaces, number of seats, number of meals).
- Consider establishment characteristics (e.g., menu, serving schedule, single service/full service, etc.).
- In places where flows in the wastewater system are low, users need to exercise greater care in grease control. Areas of low flow are a normal aspect of wastewater systems and are not considered design deficiencies or engineering or infrastructure problems.
- Assess future needs for expansion and growth.
- Evaluate effectiveness of establishment grease management practices.
- Plumb the grease interceptor to receive kitchen wastes only. To minimize hydraulic load, it is recommended that a separate drain be plumbed for hand sinks, condensate lines, or other non-grease-laden water.
- All grease interceptors must be fully accessible to allow for regular maintenance, inspection, cleaning, and potential sampling. FSE's can be severely inconvenienced when grease interceptors are placed in drive-through lanes or other access or parking areas.

Operation and Maintenance and Requirements

Operation

A grease interceptor is a tank comprised of two compartments separated by a baffle. Each compartment is accessible through a separate manhole. A "Tee" is positioned on the inlet to the first compartment to route the flow downward to the bottom of the compartment thereby reducing turbulence within the unit. There is also a "Tee" on the outlet from the second compartment that ensures outflow originates from the bottom of the compartment and that the floating grease layer is retained. A missing, altered, or damaged outlet "Tee" is an impairment of the ability of the grease interceptor to pretreat the wastewater and could result in violations of City Code § 13-86.

Maintenance

Proper operation and maintenance of grease interceptors includes routine inspection, cleaning, pumping, and repair as described in this section. These units are less effective if FOG and solids occupy greater than 25 percent of the interceptor's capacity. It is recommended that FSE's inspect grease interceptors at least every three months.

During each inspection, it is recommended that users document measurement of the grease layer, in inches, in both compartments by pushing a garden hoe through the grease layer or taking a core sample with a "sludge judge." During each inspection of a Grease Interceptor, it is recommended that FSE's open both manholes and confirm that the "Tees" on both the inlet and outlet pipes are intact. Inspections should be documented in accordance with the Recordkeeping activities, described below.

Inspection

The Director may inspect and sample wastewater discharges of any FSE to ascertain whether conditions of the FOG discharge permit are being met. Reasonable access to all parts of the FSE shall be made available when inspection and/or sampling of the wastewater is required (§ 13-102A and 13-103). The FSE shall make available, for the purposes of inspection, the following:

- Access to grease control devices
- Manifests, receipts, and invoices of grease device maintenance
- Documents identifying the waste hauler carrier
- Documents identifying the disposal site locations

Cleaning

If the FOG and solids occupy greater than **25 percent of an interceptor's capacity**, the FSE is required to perform a full cleaning

of the grease interceptor. **Cleaning must be performed by a licensed waste hauler with an approved license from an authorizing agency**. Both vaults of a grease interceptor shall be left completely empty upon completion of pumping operation. The grease mat, liquids, sludge, and scrapings from the interior walls must be removed. Under no circumstances, may the waste hauler reintroduce the removed water or materials be reintroduced into the City of Cypress sewer system, other than at qualified disposal stations. Flushing an interceptor with hot water, or the use of chemicals or other agents to dissolve or emulsify grease and allow it to flow into the wastewater treatment system, is a violation of City Code 13-106.

Since the FSE is the generator of the grease waste, is liable for the condition of their pretreatment devices, and is paying for the cleaning service, the FSE owner or designee may want to witness all cleaning/maintenance activities to verify that the Grease Interceptor is being fully cleaned and properly maintained. The following are the pumping practices required of licensed waste haulers:

Step 1:

Skim the entire grease cap and debris from the top of the Grease Interceptor. The interceptor may need to be agitated slightly to loosen the grease cap.

Step 2:

Place the vacuum tube all the way into the Grease Interceptor to withdraw remaining solids from the bottom.

Step 3:

Vacuum water out of the Grease Interceptor.

Step 4:

Clean the sides and bottom of the Grease Interceptor. This may be done by "back flowing" the water from the pump truck or by using a hot water source to hose down the interceptor. Make sure the Grease Interceptor is completely clean.

Step 5:

Vacuum the remaining water out of the Grease Interceptor.

Step 6:

Check that the sanitary "Tees" on the inlet and outlet sides of the Grease Interceptor are not clogged, loose, or missing.

Step 7:

Verify that the baffle is secure and in place.

Step 8:

Inspect the Grease Interceptor for any cracks or other defects.

Step 9:

Check that lids are securely and properly seated after completion of pumping.

Step 10:

Provide a copy of the liquid waste hauler load ticket (manifest) to the FSE (waste generator). An example of this form is provided in the Appendices section of this manual.

Recordkeeping

It is required that FSE's maintain a written record of every time a grease interceptor is inspected and cleaned and it is a violation of city code when the FSE fails to maintain and keep up-to-date accurate records of all cleaning, maintenance, and removal of FOG wastes (§ 13-101B).

Inspection records should document date of inspection, name of company and person performing inspection, estimated volume of FOG present, and the signature of the manager or designee of the FSE. An example of this record is provided in the Appendices section of this manual.

Cleaning records should document the date of maintenance, name of company and person performing maintenance, estimated volume of FOG removed, disposal location, and establishment manager's, or designee's, signature for verification. A manifest from the permitted liquid waste hauler is an acceptable record, if it contains all of the above information.

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 the City of Cypress

personnel for review and inspection (§ 13-101B).

Section V: Public Education

The City of Cypress has partnered with the County of Orange and the Orange County Sanitation District to provide educational materials to FSE's. Brochures and posters have been prepared in English and Spanish that describe Best Management Practices to handle FOG wastes. These brochures and posters can be provided to every FSE in the City's service area to educate people on FOG BMPs and to provide on site visits to newly licensed establishments.

Websites are also available for more information regarding FOG:

www.ci.cypress.ca.us

The Cypress Department of Public Work's Sewer / Wastewater Division is responsible for maintaining the City's sewer collection system. The City's collection system flows into an OCSD main until it reaches the Orange County Sanitation District system where it is processed for treatment.

www.ocsd.com/services/city/wdr

The Orange County Sanitation District (OCSD) leads a steering committee that includes all cities and agencies within its service area to develop policies and procedures to comply with the Regional Board order.

www.swrcb.ca.gov/rwqcb8/html/oc_sso.html

This is the direct link to the Regional Board Order that discusses waste discharge requirements and deadlines that sewer agencies and municipalities are required to meet.

www.epa.gov/owm

The United States Environmental Protection Agency's Office of Wastewater Management (OWM) oversees a range of programs contributing to the well being of the nation's waters and watersheds. Through its programs and initiatives, OWM promotes compliance with the requirements of the Federal Water Pollution Control Act.

www.ocwatershed.com

The Watershed & Coastal Resources Division is one of six units in the Public Facilities & Resources Department. This division is responsible to develop regional management strategies to preserve, protect, and enhance coastal resources and surface waters throughout Orange County.

Section VI: Permits and Enforcement

Description and Applicability

This section provides a description of the permit requirements and enforcement procedures that apply to FSE's that fail to comply with the requirements in the City Ordinance and any other applicable laws of other agencies.

The EPA, in its general pretreatment regulations (40 CFR Part 403) and the City, in its FOG Ordinance, prohibit any user, including FSE's, from discharging solid or viscous pollutants, such as FOG wastes, in amounts which will cause obstructions (blockages) to the flow in the wastewater system and interfere with the operation of the wastewater system. The City of Cypress is required by the EPA, the State, and City code, to initiate enforcement actions against users of the wastewater system, who violate this prohibition.

The City of Cypress will initiate enforcement actions for noncompliance, but it is possible for the EPA or the State to initiate their own enforcement actions if, in their opinion, the City has not taken adequate enforcement.

Permit Requirements

All FSE's are required to obtain a FOG Wastewater Discharge Permit to discharge wastewater into the sewer system and pay a fee as set by the permit fee schedule.

Grease interceptors shall be required for all new and existing FSE's during the plan review/building permit process. A variance or a waiver may be granted when certain terms and conditions are met (§ 13-87). Please refer to Section IV for more details.

• **Exemption from FOG Discharge Permit:** A limited food preparation establishment is not considered a Food Service Establishment and is exempt from obtaining a FOG Discharge Permit. Exempted

establishments shall be engaged only in reheating, hot holding or assembly of ready to eat food products and as a result, there is no wastewater discharge containing significant amount of FOG. A limited food preparation establishment does not include any operation that changes the form, flavor, or consistency of food.

• **Grease disposal mitigation fee:** FSE's that operate without a grease control interceptor may be required to pay an annual Grease Disposal Mitigation Fee to equitably cover the costs of increased maintenance and administration of the sewer system as a result of the FSE's' inability to adequately remove FOG from its wastewater discharge. This section shall not be interpreted to allow a new FSE, or existing FSE's undergoing remodeling or change in operations, to operate without an approved grease interceptor unless the Director has determined that it is impossible to install a grease interceptor.

Blockages and Sewer Spills

Blockages: Enforcement activities often commence with investigations of blockages and overflows of the wastewater system. Such investigations may include closed circuit television inspection of sewer lateral lines and privately owned service lines. These inspections are used to determine contributing factors causing the blockage or overflow, such as defective infrastructure, accumulated roots and/or debris, and to seek visual evidence of FOG waste accumulation between the site of the stoppage or overflow and upstream FSE's. If significant FOG accumulation is observed in the service Line of an upstream FSE, that establishment is identified as causing or contributing to the downstream stoppage or overflow. Inspection findings for the grease traps and grease interceptors of upstream FSE's are also used to determine:

- **Sewer spills and cleanup costs:** Notwithstanding any waiver of grease interceptor, FSE's determined by the Director to have contributed to a sewer blockage, SSOs or any sewer system interferences resulting from the discharge of wastewater, may be ordered by the Director to immediately install and maintain a grease interceptor and any other requirements.

Violations and Enforcement Responses

The City of Cypress has a range of enforcement responses that can be applied for compliance to the FOG Ordinance. The enforcement remedies are cumulative; in other words, they may be used individually, sequentially, concurrently, or in any order. Monetary fines are federally required enforcement responses and are usually one of the last enforcement actions the City will use when encountering noncompliance.

It is the expectation of the City that efforts to keep FOG from entering into the wastewater system can be achieved with public education and common interest in preventing health hazards and damage to homes and businesses.

Violations of the City's FOG Ordinance can include:

- Failure to install an approved grease control device
- Makes any false statement, representation, record, report, plan or other document that is filed with the City
- Tampers with or knowingly renders inoperable any grease control device
- Fails to clean, properly operate, maintain or remove FOG from a grease control device within the required time for such cleaning, maintenance or grease removal
- Fails to keep up-to-date and accurate records of all cleaning, maintenance, and FOG 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 FSE, or any Authorized Inspector
- 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

FSE, or any Authorized Inspector, reasonable access to the FSE 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

- Disposes of, or knowingly allows or directs FOG to be disposed of, in an unlawful manner
- Fails to remove all food grinders located in the Food Facility by the date specified by the Ordinance
- Introduces additives into a wastewater system for the purposes of emulsifying FOG without the written, specific authorization from City and the sanitary sewer agency that has jurisdiction of the sanitary sewer system that services the FSE
- Fails to pay the Grease Disposal Mitigation Fee
- Fails to comply with the provisions of the FOG Manual
- Otherwise fails to comply with the provisions of the FOG Ordinance or any permit issued by the City

Procedures the City may take to enforce the FOG Ordinance can include:

- Notices of violation
- Requirements to enter into a compliance schedule agreement (CSA)
- Suspension or revocation of waste discharge permit
- Costs and charges to reimburse the City to clean and/or repair the sewer system or sewer facilities
- Suspension or termination of sewer and water service
- Civil penalties and/or criminal penalties

Notices of Violation

Notices of violation may include verbal notice, information production/compliance review meeting, inspections, field notices of observed violations, and notices of violations. Regarding notices of violation, an informal conference with the City may be requested and an appeal is available after an informal conference. The notification of violation is more fully explained below.

During an inspection of a FSE, if a violation is noted, a written notice of violation may be served. This document identifies the specific requirements that were violated, the fact alleged to constitute the violations, and it may include any corrective action(s) proposed to be required. Within ten (10) days of the receipt date of this notice, a written explanation of or response to the violation and a plan for the satisfactory correction and prevention thereof must be submitted. An example of this document is provided in the Appendices.

The corrective actions contained in a Notice of Violation could include the following:

- Implementing specific BMPs to control FOG wastes, including submittal of a CSA;
- Increasing the inspection and/or cleaning frequency of a Grease Trap or Grease Interceptor;
- Provide adequate maintenance and/or access to the Grease Trap or Grease Interceptor; and
- Other items deemed appropriate by the Director or his designee.

Compliance Schedule Agreement

Upon determination by the Director that a FSE or owner of a property is in noncompliance with its FOG Wastewater Discharge Permit or any other provision, or needs to construct and/or acquire and install a grease control device or grease interceptor, the Director may require the permittee, owner or operator to enter into a CSA (§ 13-107). A CSA must include the following information:

- A description of the FSE operation,
- A description of the location and size of any Grease Interceptors and Grease Traps present,
- A description of the FOG BMPs used by the FSE,

- A description of the procedures to prevent discharges of waste fat, oils and grease,
- A description of waste FOG handling, storage, and disposal procedures,
- A description of how the Grease Interceptor or Grease Trap will be maintained (cleaned) including frequency of cleaning,
- A description of how the FSE will comply with quarterly reporting requirements, and
- A certification statement that is signed by the owner or manager of the FSE.

The City will provide the FSE with written notice of its acceptance of the FOG control plan. The Director may require modifications to a FOG control plan, if the plan submitted by a FSE is determined to be inadequate. Failure to implement any element of an accepted plan is a violation and subject to enforcement.

Administrative Hearing Procedures

Any FSE, permit applicant, or Permittee adversely affected by a decision made by the Director may appeal the decision and file a written request for hearing before the City Manager, if such filing is done within 10 days of the decision and accompanied by an appeal fee.

Appendices

This section includes examples of the following documents which may be amended from time to time by the Director.

219-1 Fats, Oils, Grease Wastewater Discharge Permit Application

219-2 Standard Permit Conditions of Approval

219-3 FSE Training Log

219-4 Exhaust Hood Maintenance Log

219-5 Grease Barrel Collection Log

219-6 Interceptor/Trap Maintenance Log

219-7 Inspection Form – Interceptors

219-8 Inspection Form – Best Management Practices

BMP 219A Recommended Pump Out Procedures

BMP Manual (Source Kent County Public Works, Delaware)

City Code, Chapter 13, Article VIII Fats, Oil and Grease Management and Discharge Control

FATS, OILS, GREASE WASTEWATER DISCHARGE PERMIT APPLICATION

(Form 219-1)

"Think before you put it down the Sink"

Please check all that apply:

☐ **New Owner** ☐ **New Address** ☐ **New Business Name**

☐ **No Changes** ☐ **Not classified as an FSE"**

Legal Authority: City Code Section 13-92	**Month**			**Day**			**Year**	
Application Date			-			-		

Business Name:	Contact Person Name and Title :
Business Address:	
Mailing Address if Different:	
Telephone Number:	Assessors Parcel Number: (If known)
Fax Number:	24 Hour Emergency Phone Number:
Principal/Owners/Major Shareholders Name and Address	If leased, Property Manager Name and Address
	Property Manager Phone Number
	Property Manager Emergency Phone Number

Are you a limited food service establishment? *(A limited food preparation establishment is not considered a FSE 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.)*	Yes / No
Do you have a food grinder or garbage disposal?	Yes / No
Do you have drain screens?	Yes / No
Do you have an exhaust hood?	Yes / No
Do you have an indoor grease trap?	Yes / No
Do you have an outdoor grease interceptor?	Yes / No
Approximate Number of Employees?	Employees

Please provide a description of your food service establishment including hours of operation, cuisine, service activities, or clients that may help the Department evaluate your application.

Attach additional sheets if necessary.

CERTIFICATION: I certify under penalty of law that the above information is true and accurate and complete to the best of my knowledge. I also understand this is not a permit but rather an application for a permit.

1. Limits on discharge of FOG and other priority pollutants.
   1.1. Introduction of any additives into any establishment's wastewater system for the purpose of emulsifying FOG is prohibited.
   1.2. Disposal of waste cooking oil into drainage pipes is prohibited. 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.
   1.3. Discharge of wastewater from dishwashers to any grease trap or grease interceptor is prohibited.
   1.4. Discharge of wastewater with temperatures in excess of 140°F to any grease control device, including grease traps and grease interceptors, is prohibited.
   1.5. The use of biological additives for grease remediation or as a supplement to interceptor maintenance is prohibited, unless written approval for the Director is obtained.
   1.6. 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, is prohibited.
   1.7. Discharge into the sewer system of any waste which has FOG as well as solid materials removed from the grease control device is prohibited. Grease removed from grease interceptors shall be wastehauled periodically as part of the operation and maintenance requirements for grease interceptors. Licensed wasthaulers or an approved recycling facility must be used to dispose of FOG, including waste cooking oil.
   1.8. Installation of food grinders are prohibited unless specifically allowed in writing by the Director.
2. Requirements for proper operation and maintenance of grease interceptors and other grease control devices.
   2.1. Grease Interceptors shall be maintained in efficient operating condition by periodic removal of the full content of the interceptor which includes wastewater, accumulated FOG, floating materials, sludge and solids.
   2.2. All existing and newly installed grease interceptors shall be maintained in a manner consistent with a maintenance frequency approved by the Director pursuant to this section.
   2.3. No FOG that has accumulated in a grease interceptor shall be allowed to pass into any sewer lateral, sewer system, storm drain, or public right of way during maintenance activities.
3. Grease interceptor maintenance frequency and schedule.
   3.1. All establishments with grease interceptors may be required to submit data and information necessary to establish the maintenance frequency of the grease interceptors and shall be determined in one of the following methods:

3.1.1. Grease interceptors shall be fully pumped out and cleaned at a frequency such that the combined FOG and solids accumulation does not exceed 25% of the total liquid depth of the grease interceptor. This is to ensure that the minimum hydraulic retention time and required available volume is maintained to effectively intercept and retain FOG discharged to the sewer system.

3.1.2. All establishments with a grease interceptor shall maintain their grease interceptor not less than every 6 months. Grease interceptors shall be fully pumped out and cleaned quarterly when the frequency described in paragraph (1) of this section has not been established. The maintenance frequency shall be adjusted when sufficient data have been obtained to establish an average frequency based on the requirements described in paragraph (1). The City may change the maintenance frequency at any time to reflect changes in actual operating conditions. Based on the actual generation of FOG from an establishment, including food service establishments that generate FOG, the maintenance frequency may increase or decrease.

3.1.3. If the grease interceptor, at any time, contains FOG and solids accumulation that does not meet the requirements described in (1), any establishment, including food service establishments generating FOG, shall be required to have the grease interceptor serviced immediately such that all fats, oils, grease, sludge, and other materials are completely removed from the grease interceptor. If deemed necessary, the Director may also increase the maintenance frequency of the grease interceptor from the current frequency.

4. Requirements for implementation of Best Management Practices and installation of adequate grease interceptor and/or grease control device.

4.1. All establishments shall implement Best Management Practices in accordance with the requirements and guidelines established by the City in an effort to minimize the discharge of FOG to the sewer system.

4.1.1. All establishments shall be required, at a minimum, to comply with the following Best Management Practices:

4.1.2. Installation of drain screens. Drain screens shall be installed on all drainage pipes in food preparation and kitchen areas.

4.1.3. Segregation and collection of waste cooking oil.

4.1.4. Disposal of food waste. All food waste shall be disposed of directly into the trash or garbage, and not in sinks or toilets.

4.1.5. Employee training. Employees of the food service establishment shall be trained within 180 days of the effective date of this Chapter, and twice each calendar year thereafter, on the following subjects:

4.1.5.1. How to "dry wipe" pots, pans, dishware and work areas before washing to remove grease.

4.1.5.2. How to properly dispose of food waste and solids prior to disposal in trash bins or containers to prevent leaking and odors.

4.1.5.3. The location and use of absorption products to clean under fryer baskets and other locations where grease may be spilled or dripped.

4.1.5.4. How to properly dispose of grease or oils from cooking equipment into a grease receptacle such as a barrel or drum without spilling.

4.1.6. Maintenance of kitchen exhaust filters. Filters shall be cleaned as frequently as necessary to be maintained in good operating condition. The wastewater generated from cleaning the exhaust filter shall be disposed properly.

4.1.7. Kitchen signage. Best management and waste minimization practices shall be posted conspicuously in the food preparation and dishwashing areas at all times.

5. Requirements for maintaining and reporting status of Best Management Practices.

5.1. Training shall be documented and employee signatures retained indicating each employee's attendance and understanding of the practices reviewed. Training records shall be available for review at any reasonable time by the Director and/or his designee.

6. Requirements for maintaining and submitting logs and records, including waste hauling records and waste manifests.

6.1. The Establishment shall be required to keep all 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 two years. The Establishment shall, upon request, make the manifests, receipts and invoices available to the Director or his designee. These records may include:

6.1.1. A logbook of grease control device cleaning and maintenance practices.

6.1.2. A record of Best Management Practices being implemented including employee training.

6.1.3. Copies of records and manifests of wastehauling interceptor contents and/or waste cooking oil disposal.

6.1.4. Records of sampling data and sludge height monitoring for FOG and solids accumulation in the grease interceptors.

6.1.5. Any other information deemed appropriate by the Director to ensure compliance with this Chapter.

7. Requirements to self-monitor.

7.1. The City may require establishments to construct and maintain in proper operating condition at the establishment's sole expense, flow monitoring, constituent monitoring and/or sampling facilities.

7.2. The location of the monitoring or metering facilities shall be subject to approval by the Director.

7.3. Establishments may also be required by the Director to submit waste analysis plans, contingency plans, and meet other necessary requirements to ensure proper operation and maintenance of the grease control device or grease interceptor and compliance with this Chapter.

7.4. Establishments shall not 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 Chapter.

8. Requirements for the FSE to construct, operate and maintain, at its own expense, FOG control device and sampling facilities.

9. Consent by the operator of the FSE for the City and other Regulatory Agencies to inspect the FSE to confirm compliance with this Chapter, the Sewer WDRs and other applicable laws, rules and regulations, including any NPDES permit applicable to the City.

10. Additional requirements as otherwise determined to be reasonably appropriate by the Director to protect the City's system or as specified by other Regulatory Agencies.

11. Other terms and conditions, which may be reasonably applicable to ensure compliance with this Chapter as determined by the Director.

    11.1. _____

    _____

    _____

    _____

    _____

    _____

    11.2. _____

    _____

    _____

    _____

    _____

    _____

    _____

    11.3. See Attached Sheet _____

FOOD SERVICE ESTABLISHMENT TRAINING LOG

(Form 219-3)

KEEP ON FILE ON **PREMISES FOR NO LESS THAN 2 YEARS.**

"Think before you put it down the Sink"

INSTRUCTIONS: To be filled out by the Food Service Establishment and filed in the FSE On-Site Compliance Binder. Use this form to record training sessions and attendance. All employees must attend a grease control training session twice each year. Training must include distribution of "Best Management Practices" brochure and viewing of the Grease Control Program video.

Business Name:

Address:

Employees:Your signature on this form acknowledges that you have received the "Best Management Practices" brochure and that you have viewed the Grease Control Program video.

Date	Employee Name	Signature	Video	Brochure	MGR Initial

City Code Section 13-101-6B. Documents must be kept on file for no less than two years. It shall be unlawful to make any false statement, representation, record, report, plan or other document that is filed with the City.

EXHAUST HOOD MAINTENANCE LOG

(Form 219-4)

KEEP ON FILE ON PREMISES FOR NO LESS THAN 2 YEARS.

"Think before you put it down the Sink"

INSTRUCTIONS: To be filled out by the Food Service Establishment and filed in the FSE On-Site Compliance Binder. Use this form to record cleaning and maintenance of exhaust hoods and ducts, by contracted cleaning services or by regularly scheduled in-house maintenance.

Business Name:

Address:

MANAGER: Your signature on this form acknowledges that the service establishment has performed proper maintenance on its exhaust hoods.

Date	Serviced by	Manager	Comments

City Code Section 13-101-6B. Documents must be kept on file for no less than two years. It shall be unlawful to make any false statement, representation, record, report, plan or other document that is filed with the City.

GREASE BARREL COLLECTION LOG

(Form 219-5)

KEEP ON FILE ON PREMISES FOR NO LESS THAN 2 YEARS.

"Think before you put it down the Sink"

INSTRUCTIONS: To be filled out by the Food Service Establishment and filed in the FSE On-Site Compliance Binder. Use this form to record grease collection pick-up times and volumes. The company collecting the waste grease should sign this form if possible. If this form is not available when pick-ups are made, the collecting company should leave a signed receipt with the collection information. Record that information on this log.

Business Name:

Address:

MANAGER: Your initial on this form acknowledges that the service establishment has disposed of its grease in a lawful manner and accounts accurately for the volume of grease disposed.

Date	Serviced by	Volume	MGR	Comments

City Code Section 13-101-6B. Documents must be kept on file for no less than two years. It shall be unlawful to make any false statement, representation, record, report, plan or other document that is filed with the City.

GREASE INTERCEPTOR/TRAP LOG

(Form 219-6)

KEEP ON FILE ON PREMISES FOR NO LESS THAN 2 YEARS.

"Think before you put it down the Sink"

INSTRUCTIONS: To be filled out by the Food Service Establishment and filed in the FSE On-Site Compliance Binder. Use this form to record grease collection pick-up times and volumes. Use this form to record pumping, inspection and maintenance of your grease interceptor.

Business Name:	Street Address:
Location of Grease Interceptor/Trap:	

MANAGER: Your initial on this form acknowledges that the service establishment has disposed of its grease in a lawful manner, accounts accurately for the volume of grease disposed and that the interceptor has been maintained properly.

If the grease and solids occupy greater than 25 percent of an interceptor's capacity, the FSE is required to perform a full cleaning of the grease interceptor. Cleaning must be performed by a licensed waste hauler with an approved license from an authorizing agency. Both vaults of a grease interceptor shall be left completely empty upon completion of pumping operation. The grease mat, liquids, sludge, and scrapings from the interior walls must be removed. Under no circumstances, may the waste hauler reintroduce the removed water or materials be reintroduced into the City's sewer system, other than at qualified disposal stations. Flushing an interceptor with hot water, or the use of chemicals or other agents to dissolve or emulsify grease and allow it to flow into the wastewater treatment system, is a violation of City Code. Since the FSE is the generator of the grease waste, is liable for the condition of their pretreatment devices, and is paying for the cleaning service, the FSE owner or designee may want to witness all cleaning/maintenance activities to verify that the Grease Interceptor is being fully cleaned and properly maintained.

Date	Serviced by	Volume	MGR	Comments (How was waste disposed? (For example: Recycled, put in trash and etc.)

City Code Section 13-101-6B. Documents must be kept on file for no less than two years. It shall be unlawful to make any false statement, representation, record, report, plan or other document that is filed with the City.

RESTAURANT INTERCEPTOR INSPECTION REPORT

(Form 219-7)

"Think before you put it down the Sink"

Name of Facility:	*Address:*
Name/Title of Facility Contact Person:	*Phone #:*

FACILITY/INTERCEPTOR INSPECTION:

Parameter	Range/Limit	Results
1. Lower Explosive Limit (LEL)	10% or less	
2. pH Range	5.0 to 11.0	
3. Oil and grease	300 mg/L	
4. Hydrogen Sulfide	10 ppm or less	
5. Mechanical condition	See Results	
6. Other	See Results	

Remarks _____

[ ] Facility is in **COMPLIANCE**. No corrective action is required at this time (note any remarks)

[ ] **NOTICE OF NONCOMPLIANCE.**
Facility is in noncompliance of the items checked below. Corrective action is required immediately.

- [ ] Interceptor inaccessible for inspection.
- [ ] Interceptor capacity has been exceeded.
- [ ] Excessive oil and grease in the sample box.
- [ ] Discharge (effluent) line restricted.
- [ ] Baffle tubes plugged, submerged, damaged or missing.
- [ ] Other _____

Required corrective action includes any or all of the following:

- [ ] Promptly remove any obstruction that does not allow safe and easy access to the interceptor.
- [ ] Repair or replace baffles.
- [ ] Pump out interceptor completely.
- [ ] Other _____

The above checked item(s) must be corrected within seven (7) days of receipt of this Notice of Noncompliance.

Corrective action shall be verified by a return inspection on _____

Acknowledgement of receipt by Facility Contact	Inspector
_____ Date _____	_____ Date _____
Print Name:	Print Name:

City of Cypress – 5275 Orange Avenue, Cypress, CA 90630 (714) 229-6740
White Copy - FSE Yellow Copy - Inspector Pink Copy - City

GREASE CONTROL BEST MANAGEMENT PRACTICES INSPECTION REPORT (Form 219-8)

"Think before you put it down the Sink"

Name of Facility:	*Address:*
Name/Title of Facility Contact Person:	*Phone #:*

Facility / BMP Inspection:

1.	Removal of Food Grinder	Installation/usage prohibited per city ordinance
2.	Grease Collection Maintenance Log	Must be kept current and accessible at all times
3.	Exhaust Hood Maintenance Log	Must be kept current and accessible at all times
4.	Employee Training Log	Must be kept current and accessible at all times
5.	Drain Screens Installed/Maintained	Must be present and in good working condition
6.	Food Waste Practices	Food Waste to be placed in plastic bags or trash, not in sink(s)
7.	Dry Wiping Practices	Pots, Pans, Plates to be Dry Wiped of food debris before washing
8.	Emergency Spill Response Materials	Grease Absorbent Materials present/accessible in event of spill
9.	BMP Poster(s) in approved areas	BMP Poster visible in all food preparation and dishwashing areas

Remarks:

( )	Facility is in **COMPLIANCE.** No corrective action is required at this time (note any remarks)
( )	**NOTICE OF NON-COMPLIANCE** -

Facility is not in compliance for the items checked below. Corrective action is required.

- ☐ Food Grinder installed or in usage
- ☐ Grease Collection Maintenance Log missing/not current
- ☐ Exhaust Hood Maintenance Log missing/not current
- ☐ Employee Training Log missing/not current
- ☐ Drain Screens missing/damaged/clogged
- ☐ Food Waste in sink(s) and not in enclosed plastic bag or garbage
- ☐ Employee(s) observed not following Dry Wiping practices
- ☐ Missing/inadequate or inaccessible Grease Absorbing Material(s)
- ☐ BMP Poster(s) missing/obscured/damaged etc.
- ☐ Other _____
- ☐ Other _____
- ☐

Required corrective action includes any or all of the following:

- ☐ Remove Food Grinder(s)
- ☐ Make available/accessible/update Maintenance or Training Log(s)
- ☐ Install/repair/clean drain screen(s)
- ☐ Instruct/train employee(s) to observe all listed BMP's
- ☐ Make available/accessible Grease Absorbent Material(s) for use in event of spill
- ☐ Post/repair/replace BMP Poster(s) in all food preparation and dishwashing areas
- ☐ Other _____
- ☐ Other _____

The items checked above must be corrected within_____days from date of this notice.

Acknowledgement of receipt by Facility Contact _____ Date _____ Print Name:	Inspector _____ Date _____ Print Name:

City of Cypress – 5275 Orange Avenue, Cypress, CA 90630 (714) 229-6740
White Copy - FSE Yellow Copy - Inspector Pink Copy - City

If the grease and solids occupy greater than 25 percent of an interceptor's capacity, the FSE is required to perform a full cleaning of the grease interceptor. Cleaning must be performed by a licensed waste hauler with an approved license from an authorizing agency. Both vaults of a grease interceptor shall be left completely empty upon completion of pumping operation. The grease mat, liquids, sludge, and scrapings from the interior walls must be removed. Under no circumstances, may the waste hauler reintroduce the removed water or materials be reintroduced into the City's sewer system, other than at qualified disposal stations. Flushing an interceptor with hot water, or the use of chemicals or other agents to dissolve or emulsify grease and allow it to flow into the wastewater treatment system, is a violation of City Code.

Since the FSE is the generator of the grease waste, is liable for the condition of their pretreatment devices, and is paying for the cleaning service, the FSE owner or designee may want to witness all cleaning/maintenance activities to verify that the Grease Interceptor is being fully cleaned and properly maintained.

Step 1:	Skim the entire grease cap and debris from the top of the interceptor. The interceptor may need to be agitated slightly to loosen the grease cap
Step 2:	Place vacuum tube all the way into the interceptor to suck remaining solids from the bottom.
Step 3:	Vacuum water out of the interceptor.
Step 4:	Clean the sides and bottom of the trap. This may be done by "back flowing" the water from the pump truck or by using a hot water source to hose down the trap. Make sure the trap is completely clean.
Step 5:	Vacuum remaining water out of the trap.
Step 6:	Check that the sanitary "T's" on the inlet and outlet sides of the interceptor are not clogged or loose.
Step 7:	Make sure that the baffle is secure and in place.
Step 8:	Inspect the interceptor for any cracks or defects.
Step 9:	Check that lids are securely and properly seated after completion of pumping.

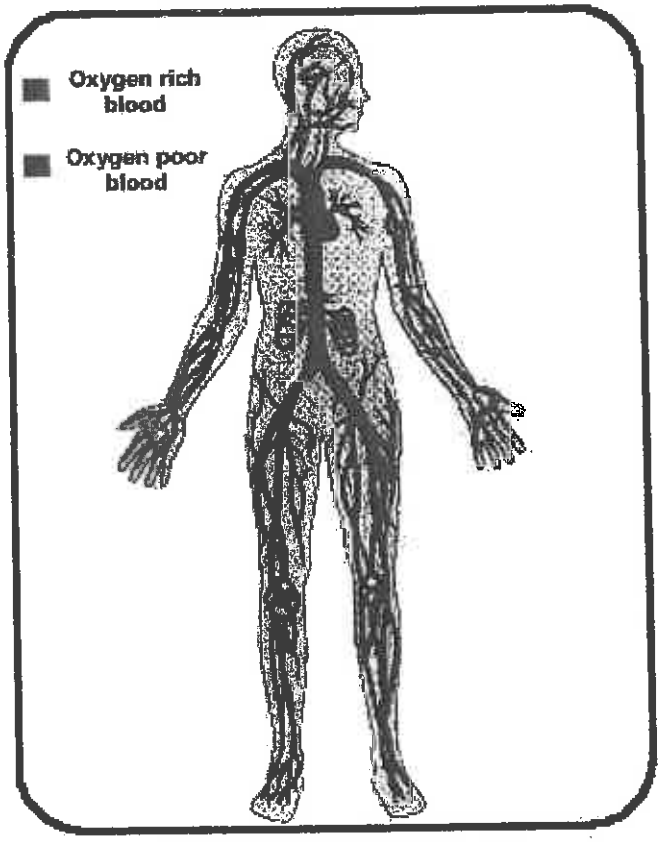
Fats, Oil and Grease (FOG) Best Management Practices (BMP) Manual

What is FOG

FOG is a shorthand way of saying Fats, Oils and Greases. FOG is composed of animal and vegetable fats and oils that are used to cook and prepare food. FOG should be recycled for use in other products or properly disposed of or land applied.

Why is FOG a Problem?

A wastewater system is similar to the human body. Wastewater flows through pipes (arteries), is pumped at pump stations (heart) and is cleaned by the wastewater plant (kidneys).



FOG clogs the pipes in the sewer system just like cholesterol clogs arteries. This makes the pumps work harder and can cause them to fail, just like having a heart attack.

FOG can cause backups in your sewer lines that can send sewage into your home or restaurant and that is an open invitation for disease and illnesses.

Train Your People

Train kitchen staff and other employees about how they can help ensure the Best Management Practices (BMPs) are implemented.

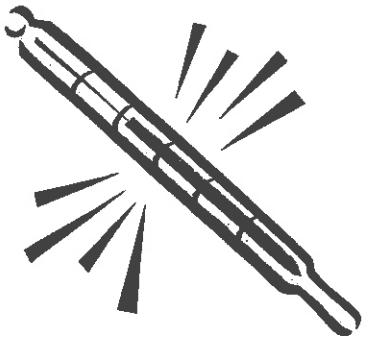
People are more willing to support an effort when they understand the basis for it.

Conspicuously Post No Grease Signs

Post these signs in restrooms, over sinks, near all floor drain, near all dishwashers and anywhere else where water may enter a drain to the sewer.

Signs serve as a constant reminder for staff working with FOG.

Use the Most Appropriate Water Temperature.



Use water temperature of less than 140°F in all sinks, especially the pre-rinse sink before a mechanical dishwasher.

Use a mechanical dishwasher with a minimum temperature of 160°F.

Temperatures in excess of 140°F will dissolve grease, but it can solidify in the sanitary system as the water cools.

Water from mechanical dishwashers should not be discharged through a grease trap or interceptor.

Use the 3-Sink System

Use the first sink to wash plates; the second sink to rinse plates and the third sink to sanitize with a 50-100 ppm bleach solution.

Water temperatures in the sinks should be less than 140°F.

The system will save energy and costs as a result.

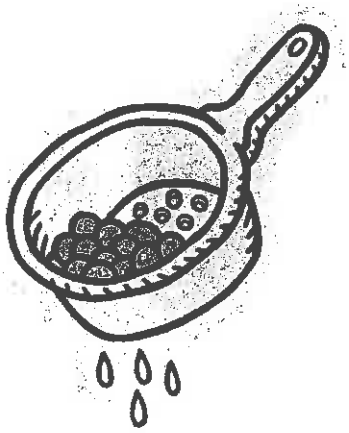
Recycle Waste Cooking Oil

There are many companies who specialize in taking waste cooking oil from fryers and other types of equipment and making animal feed or fuels, such as biodiesel from it.

Recycling reduces the amount of wastes that have to be disposed as a solid waste, and helps to prolong the life of any grease traps and interceptors.

It keeps the FOG out of the sewer system.

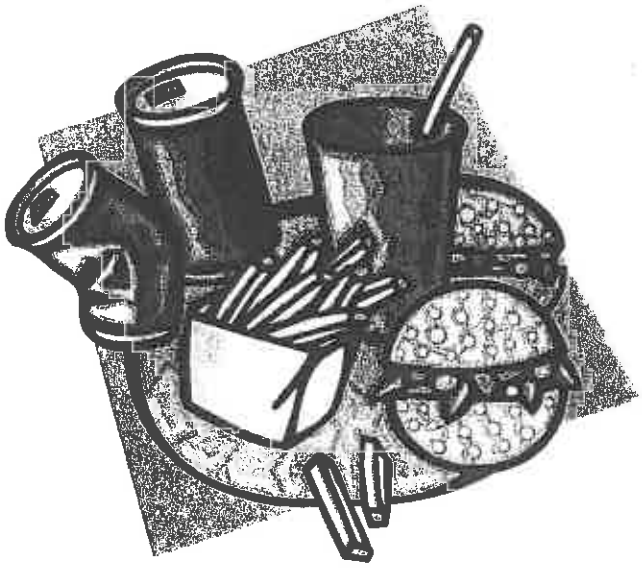
Dry Wipe All Pots, Pans and Plates



Wiping the FOG and food that remain in pots, pans and dishware before washing will keep the FOG out of the grease traps and interceptors.

This will result in less frequent cleaning of the grease interceptors and traps, and result in lower maintenance costs.

Properly Dispose of Food Waste



Food should never be poured down a drain or into a toilet.

Recycling of food wastes is the best option for a food service establishment.

Recycling of food wastes will reduce solid waste disposal costs, and the need to more frequently clean grease traps and interceptors.

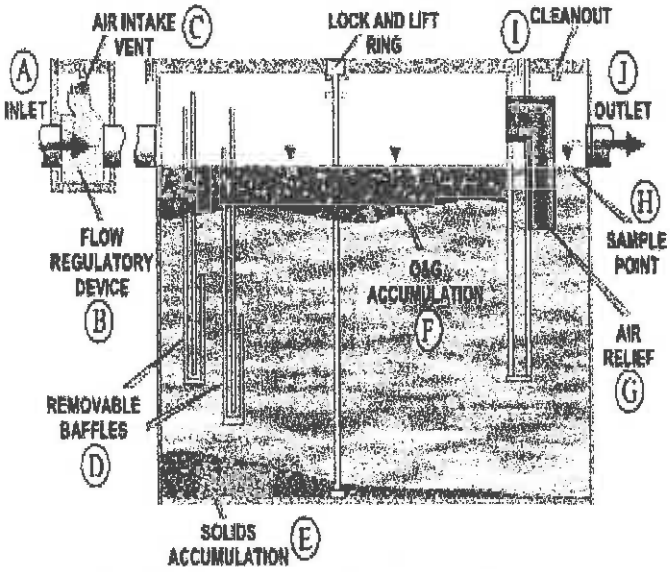
There are non-profits organizations that will take food wastes to feed those who are hungry.

Witness Grease Interceptor Cleaning

Grease trap/interceptor haulers may take shortcuts. They may not completely clean the unit or only partially remove accumulation materials.

Witnessing the cleaning of the grease interceptors or traps will ensure that the food service establishment is getting full value for the cost of the cleaning.

Clean Undersink Grease Traps at Least Weekly

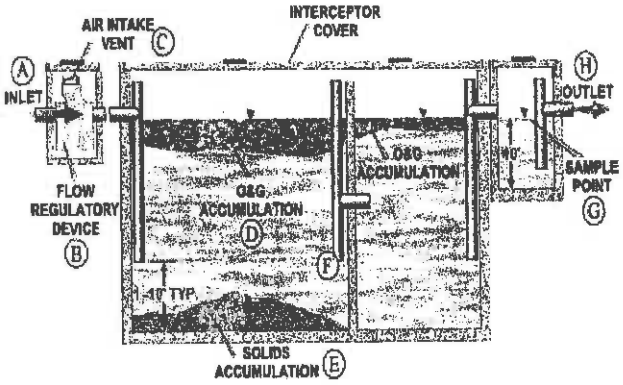


Under sink traps have less volume than grease interceptors.

Weekly cleaning by the establishment's staff will reduce the cost of cleaning any grease interceptors.

Place recovered grease in proper disposal container. It can go in a dumpster, if it is in a closed container. **Do not** pour down any drains or in any toilets.

Clean Grease Interceptors at Least Monthly



Grease interceptors must be cleaned routinely to ensure that grease accumulation does not interfere with proper operation.

The cleaning frequency is a function of the type of establishment, the size of the interceptor, and the volume of flow discharged to the interceptor.

Routine cleaning will prevent plugging of the sewer line between the food service establishment and the sanitary sewer system. A backup will require someone to unplug the line and could pose a serious health risk to workers and patrons.

Keep a Maintenance Log and All Service Records

The log serves as a record of the frequency and volume of cleaning of the grease interceptor(s).

The record helps to ensure that the food service establishment is in compliance with its permit, and affords any inspector the opportunity to verify compliance. Service records verify the accuracy of the log.

The log can optimize the cleaning frequency in order to reduce costs.

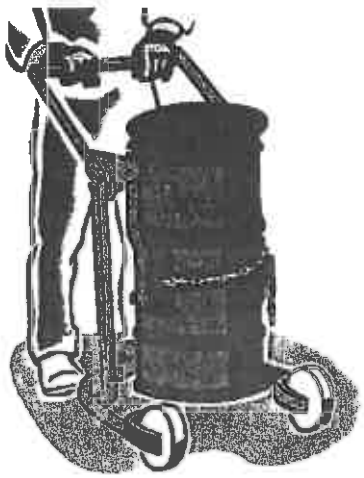
Cover Grease Containers Stored Outdoors

Uncovered FOG containers can collect rainwater. Since FOG floats, the rainwater can overflow the container and flow onto the ground where it can reach the stormwater system.

Any discharge to the stormwater may result in adding biological or chemical demand to local receiving waters.

The discharge might also result in legal penalties being imposed on the food service establishment.

Locate Dumpsters and FOG Containers Away From Storm Drains



A release of FOG can degrade water quality in receiving streams in the area by adding biological and chemical demand to the stream.

Discharging of FOG into storm drains can also result in fines and other legal actions.

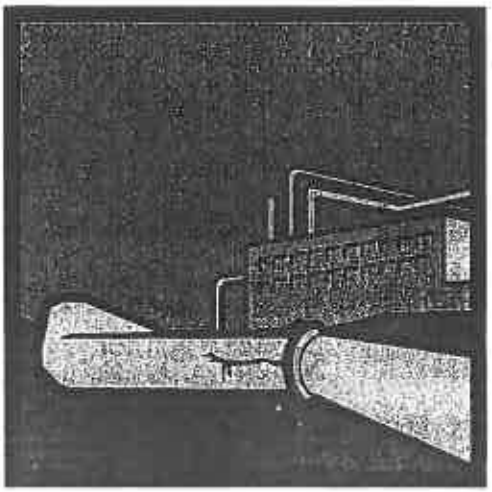
The farther away from a storm drain the FOG is stored, the more time someone has to clean up any spills. **BE AWARE** of FOG dripping out of containers or dumpsters and clean up quickly.

Use Absorbents Around All Storm Drains

Use absorbent pads around all storm drains where dumpsters or containers are nearby.

This can present an effective barrier to prevent FOG from entering the storm drain system.

Use Absorbent Pads For All Spills



Absorbent pads can help to clean up grease and oil that is spilled on the ground near outdoor equipment, containers or dumpsters. They prevent the spills from entering the storm drain system when it rains.

DO NOT use absorbent material such as "kitty litter," or saw dust since they can flow into the storm drains when it rains.

Routinely Clean Exhaust Hoods

If FOG escapes through the kitchen exhaust system, it can accumulate on the roof of the house or restaurant and eventually start a fire or enter the storm drain when it rains.

Do

•Scrape excess grease in a container and dispose of it in the trash or containers specifically designated for grease.
•Place food scraps in waste containers or garbage bags for disposal with solid wastes, or start a compost pile; promote the use of scraping ware prior to washing.
•Place a wastebasket in the bathroom to dispose of wastes.
•Disposable diapers, condoms, and personal hygiene products do not belong in the sewer system.
•Promote the use of the 3 "**R's**" **R**educe. **R**euse and **R**ecycle.

Don't

•Discharge fats, oil, and grease in concentrations that will cause an obstruction to the flow in a sewer, or pass through or interference at a wastewater treatment facility. FOG from cooking should not be placed in the kitchen or bathroom sinks or in the toilet.
•Discharge grease, improperly shredded garbage, animal guts or tissues, paunch manure, bones, hide, hair, fleshings, entrails, or food scraps.
•Discharge wastewater with temperatures in excess of 140° F to any grease traps. This includes water from mechanical dishwashers that have a minimum required temperature of 160° F.
•Discharge waste from a food waste disposal unit to any grease traps.
•Discharge caustics, acids, solvents, soaps, enzymes, or other emulsifying agents into sinks that feed grease traps and/or interceptors.
•Discharge fats, wax, grease or oils containing substances that will become viscous between 32° F (0° C) and 150° F (65° C).
•Utilize biological agents, chemicals, or enzymes for grease remediation without permission from the sanitary agency receiving the waste.
•Clean equipment outdoors in an area where water can flow to the gutter, storm drain, or street.
•Use the toilet as a wastebasket

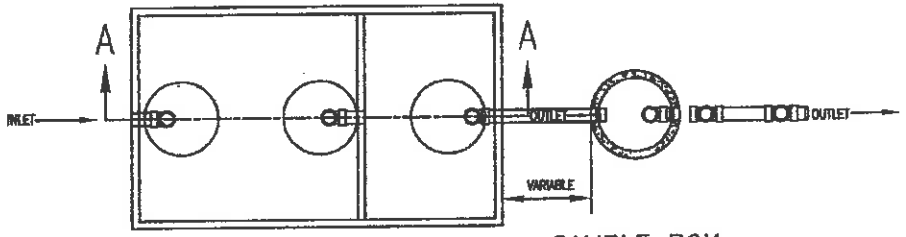
Provided by:

Kent County Levy Court
Dept. of Public Works
Room 313
414 Federal St.
Dover, DE 19901
302-744-2430
302-736-2100 (fax)
www.co.kent.de.us

Attachment 4.2

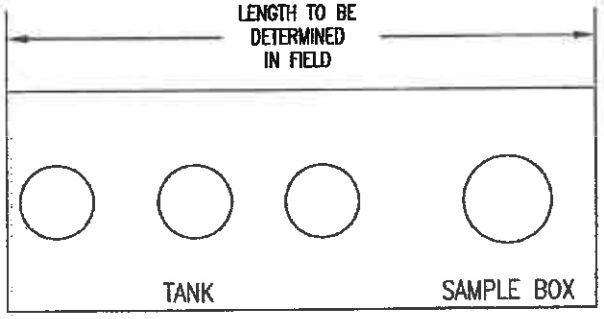
REQUIREMENTS:

1. SIZE AND LOCATION OF INTERCEPTOR TO BE APPROVED PRIOR TO INSTALLATION, MIN. TANK SIZE SHALL BE 750 GAL.
2. INTERCEPTOR TO HAVE:
   a. SAMPLE BOX
   b. SANITARY TEE; INSIDE SAMPLE BOX, DISCHARGE SIDE
   c. VENT
   d. CLEANOUT PRIOR TO LATERAL CONNECTION
   e. MANHOLE AT EACH INTERNAL BAFFLE TUBE – NO MORE THAN 10' BETWEEN MANHOLES
3. INSPECTION OF INTERCEPTOR:
   a. ALL CONNECTIONS TO INTERCEPTOR TO BE INSPECTED BY CITY PRIOR TO BACKFILL.
   b. INTERCEPTOR TO BE FILLED WITH WATER PRIOR TO INSPECTION, PER MANUFACTURERS INSTRUCTION OR REQUEST.
4. ALL MANHOLES AND SAMPLE BOXES TO BE INSTALLED A MINIMUM OF 1/2" ABOVE FINISH. GRADE/PAVEMENT WITH A CONCRETE COLLAR A MINIMUM OF 18" AROUND ALL MANHOLE LIDS AND 12" DEEP.
5. CONCRETE COLLAR, SAMPLE BOX FITTING, AND ALL EXTERIOR PIPING SUPPLIED BY INSTALLER.

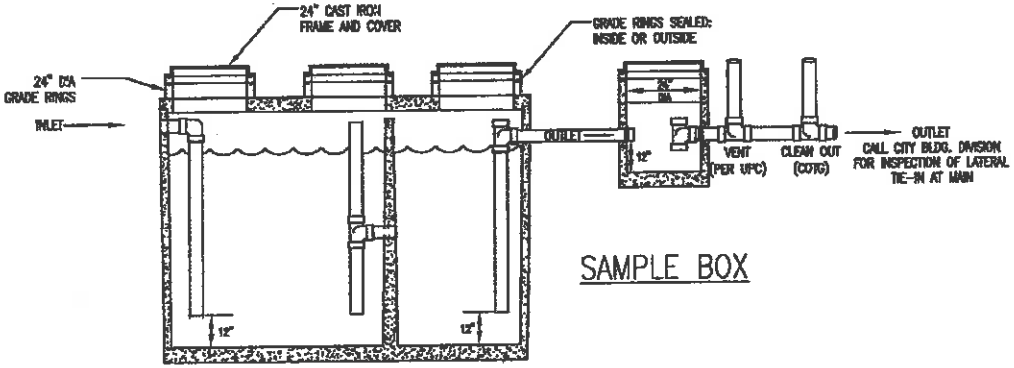


PLAN VIEW

SAMPLE BOX



CONCRETE COLLAR DETAIL
PLAN VIEW



SAMPLE BOX

SIDE VIEW

SIDE VIEW

END VIEW

GREASE INTERCEPTOR TANK WITH SAMPLE BOX

STANDARD PLAN 299

APPROVED Bob Decker 9/26/07
BUILDING OFFICIAL / DATE

APPROVED 9/27/2007
DIRECTOR OF PUBLIC WORKS - RCE 57892 / DATE

DRAWN BY : NW | CHECKED BY : GV

PUBLIC WORKS

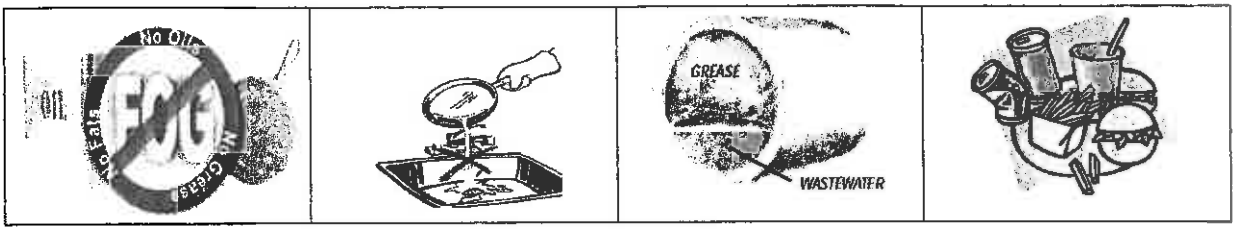
REVISIONS		SUPERCEDES	REFERENCES
NO.	DESCRIPTIONS		
		STD PLAN 299 DATED 03-2006	
		NOT TO SCALE	

Attachment 4.3

FATS, OILS, AND GREASE CONTROL PROGRAM

FOOD SERVICE ESTABLISHMENT REGULATIONS

FREQUENTLY ASKED QUESTIONS



This handout is intended to answer your questions regarding compliance with the **City's Fats, Oils, and Grease (FOG) Control Program.** As a current or prospective operator of a food service establishment in the City of Cypress, you will be required to comply with this program.

The following are answers to some of the questions you may have regarding the City's FOG Control Program requirements:

What is the FOG Program?

The Fats, Oils, and Grease (FOG) Program affects all food service establishments that have been designated as generators of grease during the food preparation process. The program is intended to prevent the discharge of grease into the sanitary sewer system by means of ongoing inspection of your food service establishment to verify that all kitchen equipment is maintained, grease control devices are regularly emptied, and to confirm employee kitchen best management practice (BMP) training. Installation of adequate-sized grease control devices to collect grease generated by the food preparation process is also a major component of the program

How did the FOG program originate?

The FOG program was a result of a State of California Waste Discharge Requirement that affected all food service establishments in northern Orange County cities. This mandate was intended to prevent sanitary sewer overflows resulting from grease entering the sanitary sewer system. A recent study revealed that the majority of sanitary sewer overflows occurring in the County were a result of grease being released into the sanitary sewer system by food service establishments, resulting in sewer blockages. Recently, the mandate was applied statewide to all counties and cities in California.

Will my food service establishment be required to pay any fees?

All food service establishments will be required to pay an annual Waste Discharge Permit or FOG Permit fee. This fee was approved by the Cypress City Council in March 2006, and will provide for the inspections of your facility's grease control devices and food preparation areas. These inspections are conducted by a contract FOG inspector who inspects FSEs on behalf of the City. Facilities without grease control devices will be required to pay an annual Grease Disposal Mitigation fee which is intended to recover the sanitary sewer maintenance costs resulting from inadequate grease control devices at food service establishments.

Can I be exempt from the FOG program requirements?

Exemptions may only be granted if your facility is designated as a "limited food preparation establishment." According to the Cypress Municipal Code, "a limited food establishment is not considered an FSE 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."

You may obtain a copy of the City's Fats, Oils, and Grease Program Manual at the public counter for a $5.00 fee or free by visiting the City of Cypress website at www.ci.cypress.ca.us. For more information please call the Department of Public Works at (714) 229-6740. Thank you for helping the City of Cypress protect its local waterways!