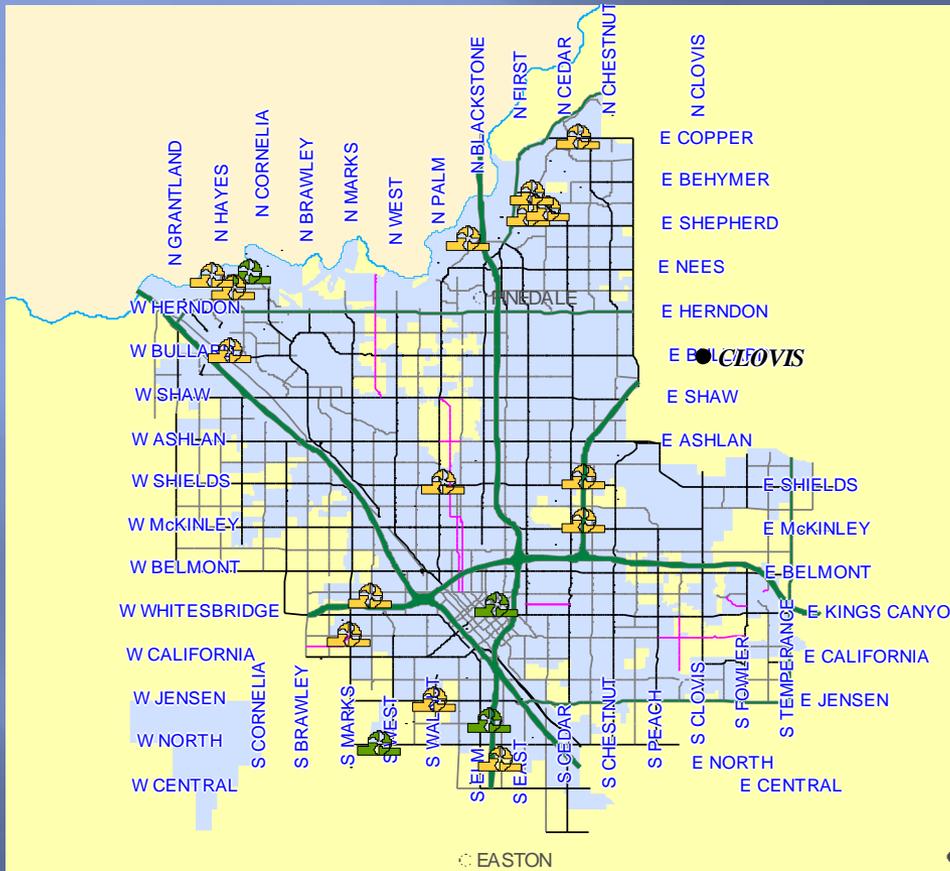


CITY OF FRESNO
WASTEWATER MANAGEMENT DIVISION

Collection System Maintenance

Wastewater Management Division (WMD) Collection System Maintenance (CSM)



- The City of Fresno owns the collection system infrastructure within the City's sphere of influence, an area of approximately 225 square miles.
- Wastewater Management Division, through the Collections System Maintenance workgroup, maintains this infrastructure through a comprehensive preventive and corrective maintenance program.

Infrastructure

- ▣ The Collection System infrastructure is comprised of:
 - ❖ 1,511 Miles of gravity sewer
 - ❖ 12.1 Miles of force mains
 - ❖ 23,421 Manholes
 - ❖ 55 Junction Structures
 - ❖ 15 Sewer Lift Stations

CSM Fleet and Equipment

Collection System Maintenance (CSM) is responsible for the preventive maintenance of the City's sanitary sewer system. This workgroup consists of 32 budgeted CSM Operators positions trained to operate the various vehicles and equipment necessary to perform day-to-day preventive maintenance and to respond to emergency calls 24/7 to address collection system maintenance issues.



Combination Unit (4)



Hydro-Flusher (4)



Mechanical Rodder (2)

CSM Fleet and Equipment



CCTV Van (3)



Lift Station / Stand By (1)



Construction (1)



First Responder (2)



Dump Truck (1)



Drag Truck (2)

Applying Technology



- ▣ Assessment of the collection system using closed circuit television (CCTV) has changed the way sewer lines are cleaned.
- ▣ In addition, information gained through daily video inspection and visual inspection from the routine cleaning process give essential information to develop future cleaning schedules and capital improvement projects.

Using Portable Cameras



- ❑ CSM uses CCTV to assess the condition of sewer lines providing important information on structure damage, grease blockage or other physical obstructions.



- ❑ Staff uses the Pathfinder portable camera to help guide the rodder truck to clean roots and debris that otherwise had to be cleaned blindly. It is also useful in follow up assessment of main line stoppages without calling out the video trucks.



- ❑ The Pathfinder can video main lines that the regular video truck cannot go through due to off-sets, broken or partially collapsed lines.

Accomplishments

- ▣ Mapping and Managing Databases
- ▣ Global Positioning System (GPS/AVL)
- ▣ Increase Training and Certification
- ▣ Outstanding Safety Record
- ▣ Sewer System Management Plan
- ▣ Performance Measures
- ▣ Helping Neighboring Communities in Need
- ▣ Public Outreach

Mapping and Managing Databases

- I-View is a web enabled mapping and data viewer developed in-house.
- I-View links various databases into a mapping system providing information accessible in one application.
- Using ruggedized laptops in the field, CSM Operators can access collection system information using the I-View program and can remotely use applications such as opening and closing service requests, checking maintenance logs, or finding the latest video inspection of a job site.

The top screenshot shows a city map with various colored overlays and a legend. The middle screenshot shows a detailed view of a specific location with a legend and a list of work orders. The bottom screenshot shows a detailed view of a specific work order with a table of pipe characteristics and a table of main conditions.

Activity	BRZJR	JET RODDER	Activity used for preventative and reactive maintenance of sewer main lines		
Assigned To	JIM HAMBURGER	Initiated On	15-Jun-2007	Due On	N/A
Completed By	JIM HAMBURGER	Scheduled On	18-Jun-2007	Completed On	17-Jul-2007

Pipe Type	VCP	Length	285.90'	Date Installed	01-Apr-1966	Service Status	ACTV
Diameter	15"	Up Depth	10.4'	As Built	10C1793	Ownership	CITY
Dn Depth			10.23'				

Main Condition	Debris Type	Water Usage / Time Spent
2-MODERATE	GRASD-GREASE AND SAND	284.99 GALS / .56 Hrs.

Training

- ❑ CSM Operators have required and recommended training to ensure operational consistency and employee development.
- ❑ NASSCO PACP and MACP, Traffic Control, Equipment and all Safety related training are required for all CSM Operators.



- ❑ Involvement in CWEA has resulted in an increase of Collection System related training locally and staff is encouraged to participate.
- ❑ CSM recently implemented a job rotation schedule for new employees to ensure training on all equipment and instruments are properly covered.



Sewer System Management Plan

- ▣ The Sewer System Management Plan (SSMP) was developed in-house with existing programs and measures already in place.
- ▣ The City's SSMP is an evolving document that adjust according to the assessment of the collection system and the needs of the community.

2009

CITY OF FRESNO



Providing Life's Essential Services



2009

Performance Measures

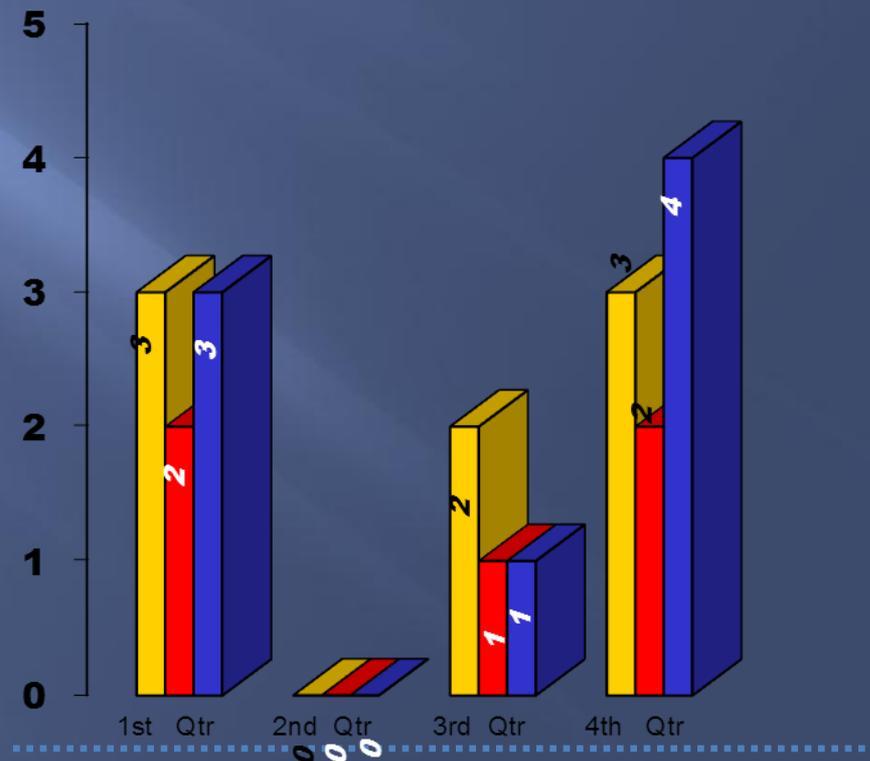
- ▣ Sanitary Sewer Overflow Type 1
- ▣ Sanitary Sewer Overflow Type 2
- ▣ Customer Reported- Mainline Blockages
- ▣ Average Field Response Time
- ▣ Average Cost of Sewer Mainline Cleaned / Foot
- ▣ Average Cost of Sewer Mainline Cleaned / Mile
- ▣ Sewer Mainline Video Inspected
- ▣ Average Cost of Video Inspection
- ▣ Field Response- Lift Station Alarms

Sanitary Sewer Overflows Category 1 2012 4th Quarter

The number of Sanitary Sewer Overflow (SSO) events are a measure of collection system performance.

SSO Category 1 is a discharge of sewage exceeding 1,000 gallons per event; a discharge that makes its way to waters of the U.S.; or a discharge that enters a storm drain.

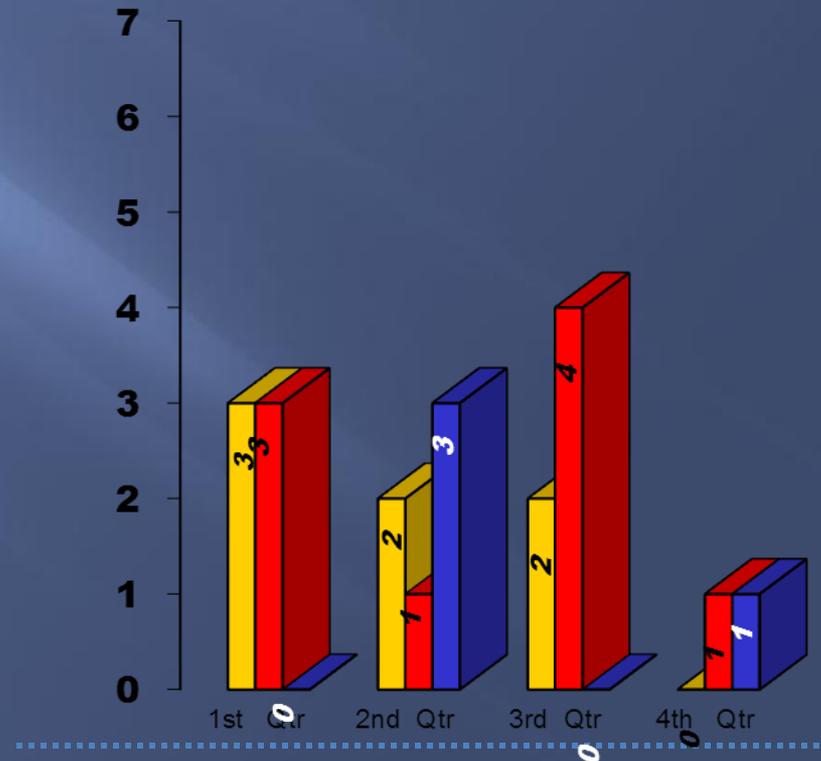
- Target (0 SSOs)
- 2010
- 2011
- 2012



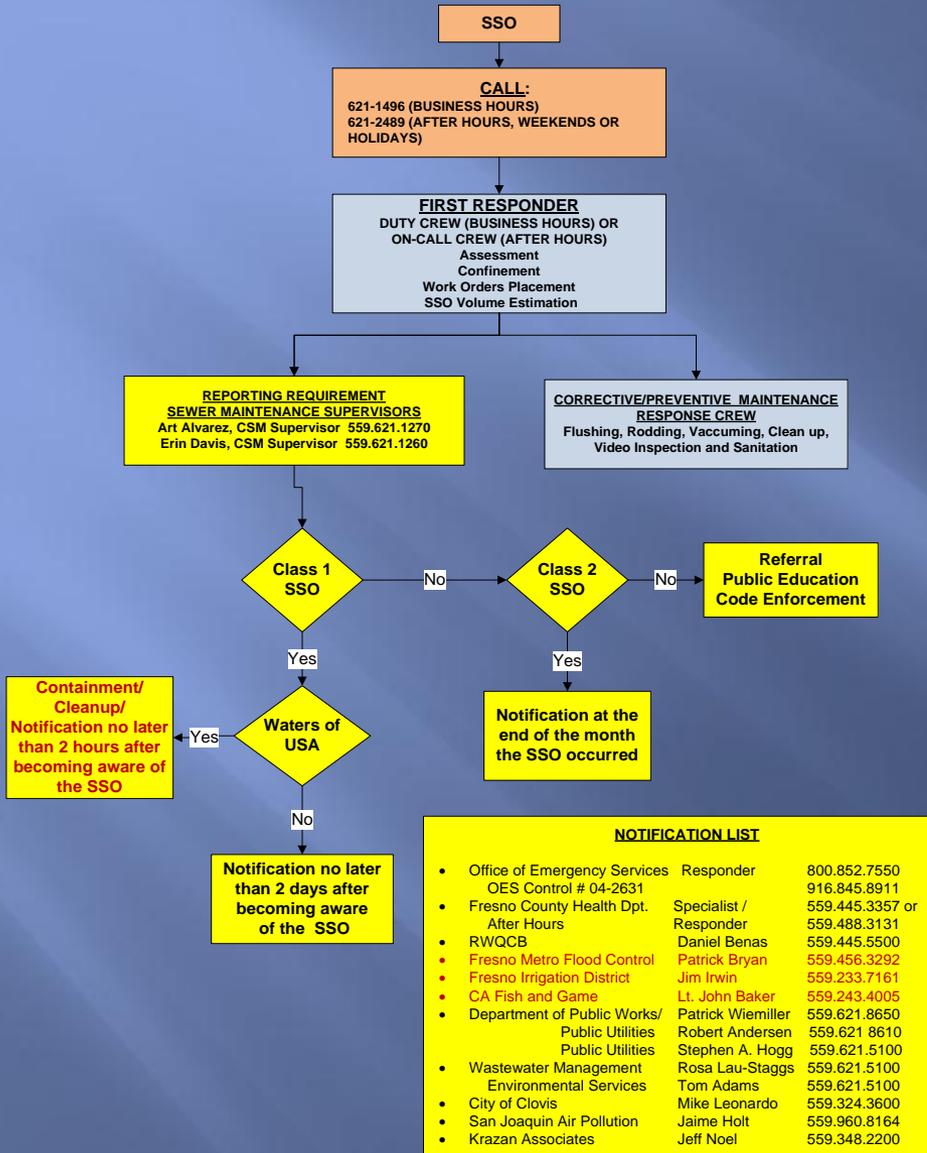
Sanitary Sewer Overflows Category 2 2012 4th Quarter

A Sanitary Sewer Overflow (SSO) Category 2 is a discharge of sewage less than 1,000 gallons in volume that results from a failure in the City's sanitary sewer system

- Target (0 SSOs)
- 2010
- 2011
- 2012



SSO EMERGENCY RESPONSE- NOTIFICATION PROCEDURE



□ Response time to attend an emergency or referral call is expected to be within 35 minutes.

□ Operators follow cleanup procedures after an SSO to ensure the safety and health of the community.

□ After an SSO, the main line is assessed to determine the cause for line stoppages.

Assisting Neighbors in Need



The City helped the neighboring City of Reedley clear a blockage that was slowing down sewer flow and could have the potential to cause an overflow during a very important event.

The City sent a CCTV van to assess the situation and a hydro-flusher to help break the blockage. CSM Operators were successful and remained until uninterrupted flow was achieved.



City of Reedley
Public Works Department
1733 Ninth Street
Reedley, CA 93654
(559) 637-4200
FAX 637-2139

March 11, 2010

To: Rosa Staggs
City of Fresno
Sewer Maintenance Manager
2101 "G" Street, Bldg. C
Fresno, Ca. 93706-1682

Dear Rosa,

Re: Assistance with blocked sewer line

On behalf of the City of Reedley Public Works department and Administration we would like to extend our sincere thanks for your department's assistance during our recent sewer collection system problem. Art Alvarez and his crew did an outstanding job. As you may be aware, we were desperate to clear this line as soon as possible because it was adjacent to our cemetery and, unfortunately, we were having a high profile funeral for our fallen police officer Javier Bajar. Because of your assistance we were able to get the line cleared and remove all surface piping prior to the funeral. Again we wish to thank you and your department and in return offer our assistance to you if the need should ever arise.


Rocky Rogers, City Manager

C Russ Robertson, Public Works Manager
Martha Cardoso, Waste Water Systems Supervisor

Public Information



- Public information is necessary to educate the public of the impact of materials put down the drain.
- Best Management Practices posters are provided to food services establishments at the time of their permit inspection.
- PSAs during specific holidays remind the community to keep fats, oils and greases away from the drains.

Customer Service Feedback

Dear Customer:

My name is _____ and recently we received a call from you that prompted us to respond to your location. Below you will find specific details about the call, we will review the reason the call was made and describe the actions taken to get the problem resolved.

Date: _____
 Name: _____
 Address: _____
 Time Notified: _____ AM / PM
 Time Arrived: _____ AM / PM
 Reported Problem: Vent Overflowing
 Manhole Overflowing
 Mainline Blockage
 Manhole Cover Off
 Odor
 Other: _____

Action Taken: _____

The reported problem has been corrected.
 Temporary repairs have been made. A Sewer Maintenance crew will return during regular working hours to complete the service.
 Sewer Maintenance personnel have examined the problem and determined that the repair(s) is the responsibility of the property owner.

To Our Valued Customer:

The City of Fresno, Sewer Maintenance Division is dedicated to serving the needs of our customers. One way to get the vital feedback we need is through this customer survey. Your response will assist us in better meeting the needs of our City of Fresno customers.

Please take a minute to answer the following questions and mail the completed card back to us.

If you have any questions regarding our service, please do not hesitate to call the Sewer Maintenance Division at (559) 621-1496.

Thank You,
 Sewer Maintenance Division

Mission Statement

"To operate and maintain the wastewater collection system in a safe, efficient, and cost-effective manner; with a dedication and concern for the health & safety, and welfare of the customer and public; recognizing that employees are our most valuable asset."

Department of Public Utilities

Operation Cleanup (OCU)	621-1447
Sewer Maintenance Division	621-1496
Solid Waste (garbage)	621-1452
Utility Billing & Collection (UB&C)	621-6888
Water Division	621-5380
Wastewater Management	621-5100
After hours emergencies	621-1100
7 days/week - 24 hrs a day	

Customer Satisfaction Survey

- How often do you respond to your requests and concerns?
- Do the people who respond to your requests and concerns care about the problem?
- Do the people who respond to your requests and concerns care about the person who calls?
- Do the people who respond to your requests and concerns care about the person who pays for the service?
- How would you rate the overall quality of service provided to you?

Customer Name: _____ Phone Number: _____
 Please Print, Use Sticking this Side to Mail!

Customer satisfaction surveys are provided to residents in the areas serviced after a referral or emergency call.

All surveys are reviewed to ensure proper customer service.

City of Fresno
 Department of Public Utilities
 Wastewater Management Division
 Collection Systems

City of Fresno
 Wastewater Management Division
 Collection Systems

Customer Awareness

The disposal of certain items can cause sewer main stoppages. Please do not put the following items into the sewer: kitty litter, egg shells, coffee grounds, lard or cooking oil.

The following items should never be flushed down the sanitary sewer and must be disposed during a Domestic Hazardous Waste Collection Event: pesticides, nail polish, oven cleaner, spot remover, vehicle fuel, oil or grease, fertilizer, rodent poison, weed killer, paint, varnish, battery fluid, stripper or thinners.

Services Available:

Sewer Maintenance responds to customer complaints due to sanitary sewer backups 24 hours a day and 365 days of the year.

Type of Complaints:

- City sewer maintenance stoppages and/or overflow. The City main is generally located in the center of the street or alley.
- Open, loose or missing manhole covers.
- Sewer trench cave-in.
- City sewer maintenance stoppages and/or overflow. The City main is generally located in the center of the street or alley. (The City's telemetry system generally notifies personnel before any overflow from a lift station.)

If you have any questions, please feel free to call the Wastewater Management Division, Collection Systems @ 621-1496 or visit our website at www.fresnosewer.org

Door hangers with recommendations are left when not able to talk to a customer directly after a cleaning event.

Contraction -Challenges and Opportunities

- ▣ Sewer Maintenance Division officially merged with Wastewater Management Division in July 2010.
- ▣ Challenge: Workgroup temporarily at a location 8 miles from the Division.
- ▣ Opportunities: Merging administrative, technical services, maintenance and enforcement functions that support the goals of the Collection System Maintenance workgroup.

Fats, Oils and Grease Program

- ❑ Data from sewer line maintenance is entered into the “Fog Program 2008-2012” report .
- ❑ Information determines trends to help identify cleaning frequency for critical and non-critical areas.
- ❑ The City’s Pretreatment Program implements its inspection requirements of food service establishments according to areas of higher maintenance needs or “Hot Spots.”
- ❑ The City has legal authority to inspect and enforce Best Management Practice on food service establishments.

Fog Program 2008-2012 Report



COLLECTION SYSTEM MAINTENANCE FOG Program - Sewer Problem Areas

	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70				
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05	5	thru	8														0657	0658	0659	1	0561	0562									05			
06	9	thru	15														0657	0658	0659	0660	0661	0662									06			
07	16	thru	25													0755	0756	0757	1	0759	0760	0761	0762								07			
08	BASED ON 2 1/2 YEARS OF DATA																0855	0856	0857	0858	0859	0860	0861	0862									08	
09	Last update Feb 1, 2011																0954	0955	0956	1	0958	0959	0960	0961	0962									09
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21		2142	2143	2144	2145	1	2147	2148	2149	2150	2	1	2	3	2	2156	2	2158	1	2160	1	2162	2163	1	2165	2166	2167	2168	2169	2170	21			
22		2242	2243	2244	2245	2246	2247	2248	2249	2250	1	1	2	8	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	22			
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31		3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165						31			
32		3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265						32			
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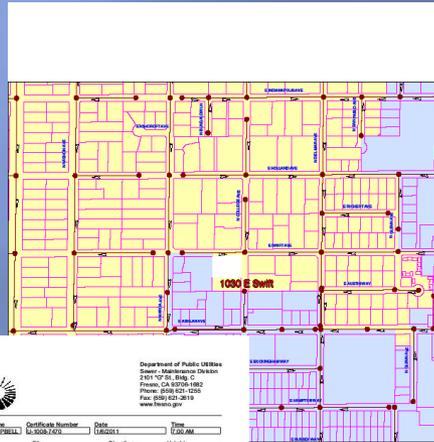
ORGANIZED IN SEWER PLAT AREAS - TOTAL NUMBER OF MAINLINE BLOCKAGES IN PAST THREE FISCAL YEARS

New Construction

- New development is required to follow the City's Standard Specifications and Standard Sewer Drawings.

- The City minimizes occurrences of SSOs due to hydraulic loading by ensuring current and future sewer flows do not exceed design capacity of sewer lines at peak flow.

- CSM Supervisors have the final approval for new development connecting to the City's mains, ensuring proper connection to minimize future conveyance and maintenance issues



City of **FRESH**

Department of Public Utilities
Sewer Maintenance Division
2415 W. 9th St.
Fresno, CA 93703-1802
Phone: (559) 621-1252
Fax: (559) 621-2619
www.fresno.gov

Workorder No. _____ Date: _____
Customer: _____ City: _____
Address: _____ Street: _____
City: _____ State: _____ Zip: _____
Additional information: _____



JOM - Joint Offset (displaced): Medium @ 455.4 ft. LATERAL FOR 1030 E SWIFT

MGO - General @ 457.4 ft. LATERAL FOR



TFA - Tap, Factory Made: Active @ 457.4 ft. LATERAL FOR 1030 E SWIFT

JOM - Joint Off @ 457.4 ft. LATEF

Generated on Thursday, 9/22/11 at 10:20

City of **FRESH**

MEMORANDUM

TO: Sewer Maintenance Division DATE: 11/4/11

FROM: Construction Management REQUESTED BY: Anthony J. Fajano

Please run the television camera through pipeline at the following locations:
1030 E. Swift / Colonge New base.

DATE AND TIME NEEDED: A.S.A.P.

1. ~~TRAC-4~~ *near 4th corner to main line*
2. near 4th corner to main line
3. near 4th corner to main line

3.

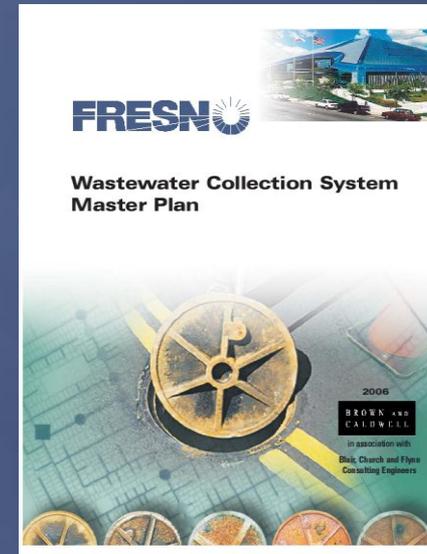
INSPECTION RESULTS: _____ DATE VIEWED: _____

SIGNED: _____

camera frm
2/3/14

Corrective Maintenance Program

- ▣ The City of Fresno Wastewater Collection System Master Plan provides a capital improvement program for new construction and rehabilitation projects.



- ▣ Collection System Maintenance has a construction crew that performs small repairs, including manhole repairs and spot repairs of broken sewer lines



Capital Improvement Program

Project: RL06 Rehabilitation Project: Large Diameter
Priority Year: 2010
Project Purpose: Rehabilitation of Existing Sewer Facilities
Project Location: Marks and Weber Aves (Garland Ave to Princeton Ave)

Council District: 1
Planning Area: Fresno High/Roeding

Approximate Project Quantities:
2,015 LF of 42" CIPP Sewer Rehabilitation
1,650 LF of 45" CIPP Sewer Rehabilitation

Project Conditions:
2-Lane Street
Freeway Crossing (SR99)
Railway Crossing

Sewer Evaluation Rating:
Assessment Year: 1996
Severe: 0 LF
Moderate: 3,665 LF
Acceptable: 0 LF
Hydraulic Deficiencies: None

Recommendation:
Install cured-in-place pipe (CIPP) liner.

Estimated Construction Cost:	\$1,114,000.00
Estimated Management & Engineering Cost:	\$201,000.00
Total Estimated Project Cost:	\$1,315,000.00

Links to Additional Photographs:
[Shields Ave at Weber Ave](#)
[Marks Ave at Weber Ave](#)

Weber Ave at Marks Ave



City of Fresno Wastewater Collection System Master Plan Capital Improvement Program Project Summary Sheet



BLAIR, CHURCH & FLYNN
CONSULTING ENGINEERS
FRESNO, CALIFORNIA

- Capital improvement projects include rehabilitation of sewer lines, manholes and lift stations, emergency repairs and installation of flow monitoring stations.
- FY10 budget allocated \$19.8 million for collection system rehabilitation projects.

Long Range Planning

- ▣ Wastewater Collection System Master Plan – Revision
- ▣ Collection System Maintenance Workgroup Relocation
- ▣ Lift Station SCADA Relocation
- ▣ Remote Access to Collection System Database
- ▣ City of Fresno's Downtown Revitalization
- ▣ Sewer Lateral Connection / Replacement Fund
- ▣ Public Education Efforts
- ▣ Sewer System Management Plan (SSMP)

QUESTIONS?

Contact Wastewater Management Division

(559) 621-1496

or

(559) 621-5100