Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-01
Title: PREVENTATIVE MAINTENANCE PROGRAM		Revision: 0
Issued by:	Prepared by:	Page: 1 of 8
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan, *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Health and Safety Warnings

1. All O&M activities must be conducted in a safe and efficient manner that protects City Staff, the City's contractors, and the public.
2. Employees are required to follow the City's or contractor's safety practices and procedures, whichever is more stringent. These procedures must establish guidelines in compliance with the:
    a. Occupational Health and Safety Administration (OSHA);
    b. California Division of Occupational Safety and Health (Cal/OSHA);
    c. City of Hollister's Illness and Injury Prevention Program (IIPP); and
    d. City of Hollister requirements and standards.
3. Multiple hazards exist in the performance of preventative O&M activities. The following are some of the more common hazards to be aware of:
    a. Traffic in the vicinity of O&M activities
    b. Distracted drivers
    c. Members of the public interested in O&M activities
    d. Slips, trips, and falls
    e. Falling objects
    f. Infections and disease
    g. Poisonous/toxic gases
    h. Strains and back injuries
    i. Bites (insects, bugs, rodents, etc.)
    j. Drowning
    k. Fire
    l. Electric Shock
    m. Noise

n. Weather conditions

2. Cautions

1. Equipment must be used as directed by City SOPs and manufacturers' instructions.
2. All O&M activities must be thoroughly documented to provide evidence that the activities were completed.

3. Interferences

1. This section is not applicable to this SOP.

4. Personnel Qualifications and Responsibilities

1. City Associate Engineer (Utilities)
    a. Responsible for monitoring the implementation of this SOP.
    b. Responsible for ensuring that all City Staff and contractors responsible for O&M activities are trained on this SOP annually.
2. Senior Maintenance Worker
    a. Responsible for the implementation of this SOP.
    b. Responsible for training City Staff responsible for implementing O&M activities on this SOP.
    c. Responsible for revising this procedure if deficiencies are found or program changes occur.
    d. Required to train on this SOP annually.
3. Field Staff
    a. Required to train on this SOP annually.
4. Contractors Responsible for Completing O&M Activities
    a. Required to train on this SOP annually.

5. Equipment and Supplies

1. Personal Protective Equipment (PPE):
    a. All PPE listed in SOPs #1-8 necessary for Annual O&M Training
2. Equipment:
    a. All equipment listed in SOPs #1-8 necessary for Annual O&M Training
3. Daily Log Book
4. APWA Work Area Traffic Control Handbook (*WATCH*)
5. City's SOPs
6. Cell Phone
7. Pen

6. Procedure

The guiding documents in the City's Preventative Maintenance Program consist of the activities outlined in the following nine (9) SOPs:

1. SS-SOP-01: Preventative Maintenance Program
2. SS-SOP-02: Lift Station Operation and Maintenance
3. SS-SOP-03: Annual Sewer Collection System Cleaning and High

Maintenance Area Cleaning and Reporting
4. SS-SOP-04: Annual Map & GIS Updates
5. SS-SOP-05: Underground Service Alert Marking
6. SS-SOP-06: Sewer Connection Requests
7. SS-SOP-07: Routine Traffic and Crowd Control
8. SS-SOP-08: Collection System Training Requirements

Each of these procedures gives specific direction for actions required in O&M activities. City Staff is required to train on, review, and revise these procedures annually in order to ensure Staff has a thorough understanding of these SOPs and that they are useful and effective when they are needed to complete preventative O&M on the City's collection system.

O&M activities are grouped into three categories:

1. Routine Preventative Maintenance
2. Unscheduled Preventative Maintenance
3. Emergency Maintenance

Each of these categories is discussed below. Specific SOPs are referenced in *italics* as a reference for each activity.

Routine Preventative Maintenance

The City's routine preventative maintenance consists of recurring maintenance that City Staff regularly plans for and schedules.

The City uses internal staff to complete collection system CCTV inspections, cleaning, and manhole inspections. The City has a goal to clean the entire gravity collection system annually. High maintenance areas (HMAs) are inspected weekly and cleaned by City staff when significant buildup or blockages are found. Manhole inspections are conducted in conjunction with Scheduled and HMA line cleaning activities.

Associated SOP: *SS-SOP-03: Annual Collection System Cleaning and High Maintenance Area Cleaning and Reporting*

The City owns four lift stations: Airport Lift Station, GLP Lift Station, 2nd and East Lift Station and Southside Lift Station. City Maintenance Staff perform routine and daily lift station O&M activities. Shape Inc. and local electrical contractors are contracted to complete annual and emergency lift station maintenance.

Associated SOP: *SS-SOP-02: Lift Station Operation and Maintenance*

USA marking requests are received by the Community Services Department, and Maintenance Staff adds the USA marking request to their daily work duties and schedules.

Associated SOP: *SS-SOP-05: Underground Service Alert Marking*

Some O&M activities are completed on a sidewalk or in a public road, which requires the site to be cordoned off from the public. City Staff is responsible for traffic and crowd control but can request assistance from the Police Department if there is a large event and additional staffing support is needed.

Associated SOPs: *SS-SOP-07: Routine Traffic and Crowd Control*

Public and private improvements to portions of the sewer system are rehabilitated or replaced. City staff is responsible for documenting these changes and channeling them to the City's GIS department for regular update of sewer maps and GIS.

Associated SOP: *SS-SOP-04: GIS and Sewer Atlas Updates*

All City Staff and contractors are required to annually train on the SOPs associated with the tasks they complete for the City. The Utilities Associate Engineer, Senior Maintenance Worker and supporting Maintenance Staff are responsible for reviewing the SOPs annually and evaluating whether the SOPs are effective or if any revisions or updates are needed to improve the ease and adequacy of their implementation.

Associated SOP: *SS-SOP-08: Collection System Training Requirements*

Sewer connection requests are generated through a City will-serve for new construction, remodel, or when a sewer lateral is replaced. City Engineering staff receives and processes the sewer connection requests, the Public Works Director/City Engineer approves the sewer connection requests, and the contract, who requested the sewer connection, constructs the sewer connection. The sewer connection must be inspected by the City's Building Official.

Associated SOPs: *SS-SOP-06: Sewer Connection Requests*

If City assets are replaced or upgraded, the City's Maps and GIS need to be updated to reflect the changes to the City's collection system. MNS Engineering, Inc. is contracted to manage and maintain the City's GIS database. City Public Works Staff provide updates to the City's Sewer Atlas as discrepancies are found or assets are upgraded/replaced.

Associated SOPs: *SS-SOP-04: GIS and Sewer Atlas Updates*

Unscheduled Preventative Maintenance

The City's unscheduled preventative maintenance consists of maintenance activities, which are not anticipated by City Staff and are not identified in the fiscal year budget. Unscheduled preventative maintenance can consist of activities, such as part replacements or repairs, lift station O&M, or emergency collection system cleaning.

Associated SOPs: *SS-SOP-02: Lift Station Operation and Maintenance*
SS-SOP-03: Collection System Cleaning

Emergency Maintenance

5. Emergency maintenance is performed unexpectedly and immediately. When an emergency situation occurs, the Utilities Supervisor, Maintenance Supervisor or first responder informs the City Associate Engineer (Utilities) of the situation and proceeds with corrective actions to address the emergency. Corrective actions could include activities, such as line or critical part replacements. If the emergency is a SSO, reference the City's Overflow Emergency Response Plan (OERP) and emergency operating procedures (EOPs), which are included in the City's SSMP, Element 6: Overflow Emergency Response Plan.

Associated SOPs: *SS-SOP-02: Lift Station Operation and Maintenance*
SS-SOP-03: Collection System Cleaning
SS-SOP-05: Underground Service Alert Marking
SS-SOP-07: Routine Traffic and Crowd Control

The City maintains an inventory of critical and replacement parts, but if the City does not have needed parts or equipment in the event of emergency, local retailers and contractors are available to supply additional, needed equipment, services and parts on short notice. These vendors and contractors are located within a reasonable distance from the City and can be contacted using the following information:

1. **Shape Inc.**
   Services - Lift Station Pumps and Controls
   119 Val Dervin Street Suite 2
   Stockton CA 95206
   (209) 234-5909

2. **Enterprise Electric**
   Services - Industrial Electrical
   542 San Benito Street, Hollister, CA 95023
   (831) 637-6695

3. **JM Electric**
   Services - Industrial Electrical
   400 Griffin Street, Salinas, CA 93901
   (831) 422-7819

4. **Ferguson (Familian Plumbing Supply)**
   Services - Pipe, Valve and Fittings supplier
   100 Briggs Road, Hollister, CA 95023
   (831) 636-1422

5. **Brigantino Irrigation**
   Services - Pipe and miscellaneous supplies
   910 Prospect Avenue, Hollister, CA 95023
   (831) 636-1188

Additional equipment and emergency support are also provided by the following emergency contacts, which have agreed to assist the City in the event of an emergency if they are available when called:

1. **Greenline**
   Services - Commercial Hydro Jetting, Tanker Trucks, Maintenance 1128-A Madison Lane, Salinas CA
   Business Hours: (831) 240-0685,
   After Hours: (831) 240-0685

2. **Al's Septic Tank Service**
   Services - Tanker Trucks
   13036 Arthur Street, Salinas CA
   Business Hours: (831) 637-3700,
   After Hours: (831) 637-3700

3. **Sunnyslope County Water District**
   Services - Emergency Equipment and Personnel
   3570 Airline Drive, Hollister CA
   Phone: (831) 637-4670

7. Data and Records Management

1. All required records shall be maintained for a minimum of five (5) years and shall be made available for review by the SWRCB and RWQCB during an onsite inspection or through an information request.
2. The Preventative Maintenance Program and the City's SSMP Element 4: Operation and Maintenance Program, must be kept current in relation to each other.

   a. If revisions are made to either document, the other document must be checked to ensure that it does not need to be revised or updated due to the completed revisions.
3. Records documenting compliance with all provisions of the WDR and MRP including any required records generated by contractors performing work on the sanitary sewer system or assisting in SSO response.
4. SSO records, which must be maintained for each SSO event, include, but are not limited to:
   a. Complaint records documenting how the City responded to all notifications of possible or actual SSOs, both during and after business hours, including complaints that do not result in SSOs. Each complaint record shall, at a minimum, include the following information:
      i. Date, time, and method of notification.
      ii. Date and time the complainant or informant first noticed the SSO.
      iii. Narrative description of the complaint, including any information the caller can provide regarding whether or not the complainant or informant reporting the potential SSO knows if the SSO has reached surface waters, drainage channels, or storm drains.
      iv. Follow-up return contact information for complainant or informant for each complaint received, if not reported anonymously.
      v. Final resolution of the complaint.
   b. Records documenting steps and/or remedial actions undertaken by the City, using available information, to comply with WDR Section D.7, which states:

      "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."

   c. Records documenting how all estimate(s) of volume(s) discharged and, if applicable, volume(s) recovered were calculated.
   d. Records of Certified SSO Reports as submitted in CIWQS.
5. Electronic monitoring records relied upon for documenting SSO events and/or estimating the SSO volume discharged, including, but not limited to records from:
   a. Supervisory Control and Data Acquisition (SCADA) systems.
   b. Alarm systems.
   c. Flow monitoring device(s) or other instrument(s) used to estimate wastewater levels, flow rates, and/or volumes.

8. Quality Control and Quality Assurance

1. The City Associate Engineer (Utilities) reviews all collection system maintenance records.
2. The Senior Maintenance Worker and City Associate Engineer (Utilities) updates this SOP if any deficiencies are found and the Public Works Director/City Engineer approves all updates and revisions.

9. References

1. City's SSMP
2. City's SOPs
3. City's EOPs
4. WDR: Order No. 2006-0003-DWQ

10. Attachments

1. This section is not applicable to this SOP.

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-00
Title: SCOPE AND DEFINITIONS		Revision: 0
Issued by:	Prepared by:	Page: 1 of 7
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Purpose

The purpose of this procedure is to provide standardized information, including the location, scope and availability, and definitions, applicable to all of the City of Hollister's Standard Operating Procedures (SOPs).

2. Location

Standard Operating Procedures for the City's waste water collection system consist of operations and activities conducted throughout the City's entire service area, which is illustrated in Figure 1-1.

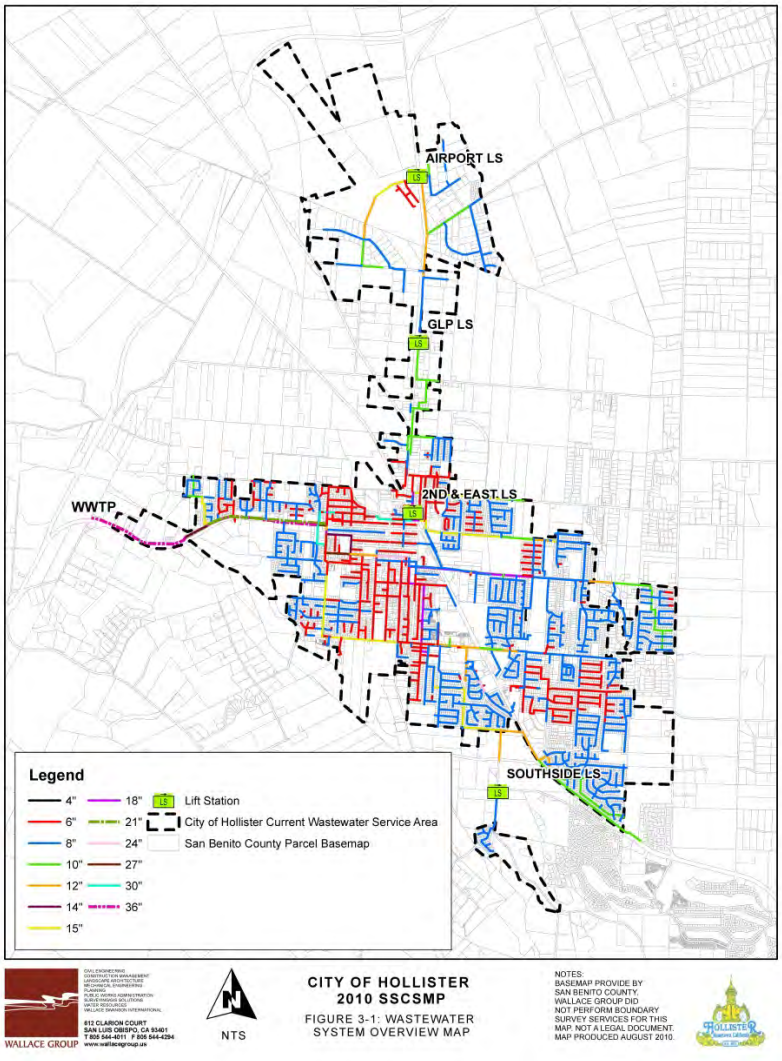


Figure 1-1: City of Hollister Collection System Service Area

3. Scope and Availability

The State Water Resources Control Board (SWRCB) Monitoring and Reporting Program (MRP) No. 2006-0003-DWQ as revised by Order No. WQ 2013-0058-EXEC for Order No. 2006-0003-DWQ, “Statewide General Waste Discharge Requirements for Sanitary Sewer Systems,” establishes requirements for all federal and state agencies, municipalities, counties, districts, and other public entities, which 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 to develop and implement an OERP and the associated procedures that identify measures to protect public health and the environment.

4. Definitions

Term	Definition
American Public Works Association (APWA)	APWA serves professionals in all aspects of public works, including public and private sector personnel involved in public works projects and services. APWA is a not-for-profit, 501(c)(3) organization that provides varied education and networking opportunities that help public works personnel grown in their professionalism and directly impact the quality of life in all the communities they serve. APWA developed the color code used in underground facility marking.
Business Hours	The City Administrative Office's business hours are 7:30 AM – 4:30 PM, Monday through Friday, excluding 12:00 PM – 1:00 PM daily and legal holidays.
California Division of Occupational Health and Safety (Cal/OSHA)	Cal/OSHA protects workers and the public from safety hazards through its health and safety programs.
California Code of Regulations (CCR)	The CCR is the official compilation and publication of the regulations adopted, amended, or repealed by state agencies pursuant to the Administrative Procedure Act.
California Governor's Office of Emergency Services (Cal OES)	Cal OES was established on July 1, 2013 and merged the former California Emergency Management Agency (Cal EMA) and the Public Safety Communications Office (PSCO). Cal EMA was established on January 1, 2009 and merged the duties, powers, and responsibilities of the former California Governor's Office of Emergency Services (OES) with those of the California Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall state agency response to major disasters in support of local government. The Agency is responsible for assuring the state's readiness to respond to and recover from hazards – natural, manmade, war-caused emergencies and disasters – and for assisting local governments in their emergency preparedness, response, recover, and hazard mitigation efforts. Sanitary sewer overflows are one of these hazards.
California Integrated Water Quality System	The online reporting system developed, hosted, and maintained by the SWRCB for compliance with the WDRs.

(CIWQS)	
Category 1 SSO	Discharges of untreated or partially treated wastewater of any volume resulting from a City's sanitary sewer system failure or flow condition that: 1. Reach surface water and/or reach a drainage channel tributary to a surface water; or 2. Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise capture and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated stormwater or groundwater infiltration basin (e.g., infiltration pit, percolation pond, etc.).
Category 2 SSO	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from a City's sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
Category 3 SSO	All other discharges of untreated or partially treated wastewater resulting from a City's sanitary sewer system failure or flow condition, which are not Category 1 SSOs.
City of Hollister (City)	The City operates and maintains a sanitary sewer collection system, which conveys sewage to the City's wastewater treatment plant.
Closed-circuit television (CCTV)	CCTV is a television system in which the video signals are transmitted from one or more cameral by cable to a restricted set of monitors. It is used for inspecting sewer lines.
Code of Federal Regulations (CFR)	The CFR is the codification of the general and permanent rules published in the Federal Register by the departments and agencies of the Federal Government.
Collection System	Generic term for any system of pipes, sewer lines, and lift stations used to convey wastewater to a treatment facility.
Data Submitter	A Data Submitter is any individual authorized by the LRO to enter data into CIWQS, the online SSO database, on behalf of the City. In order for a person to be officially designated as a Data Submitter, they must register as a Data Submitter through CIWQS by clicking on the "User Registration" button at the following link:

	http://ciwqs.waterboards.ca.gov/. The person registering as a Data Submitter must complete the information requested in the CIWQS User Registration process, and can submit the form electronically. The CIWQS Help Center will send an email notification with the LRO's user name and password after the registration is approved. The Data Submitter is the only person, who can use their CIWQS username and password. Allowing parties other than the Data Submitter to access CIWQS and submit information on his or her behalf is illegal and is considered fraud. Persons involved in such fraudulent activities can be subject to criminal prosecution.
Drainage Channel	A man-made canal used to transport storm water as part of a municipal separate storm sewer system, or an intermittent or perennial stream bed.
Emergency Operating Procedure (EOP)	An EOP is a form of a standard operating procedure (SOP) for an activity associated with an emergency situation. SOP is defined below.
High Maintenance Area (HMA)	Problem areas in the collection system that require more regular cleaning than the rest of the collection system due to problems, such as excessive grease buildup or roots intrusion.
Injury and Illness Prevention Program (IIPP)	The IIPP is a basic written workplace safety program, which is required by Title 8 of the California Code of Regulations (CCR). The IPP includes eight elements: (1) Responsibility, (2) Compliance, (3) Hazard Assessment, (5) Accident/Exposure Investigation, (6) Hazard Correction, (7) Training and Instruction, and (8) Recordkeeping.
Lateral	The segment of pipe which connects a home or building to a sewer main, which is usually located beneath a street or easement.
Legally Responsible Official (LRO)	A LRO is the person designated for the City as either a principal executive officer or ranking elected official or a duly authorized representative of that person. An individual is a duly authorized representative if: 1. The authorization is made in writing by a LRO; and 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity. The LRO is the only person, who can sign or certify all applications, reports, and other information required by the WDRs, SWRCB, or

	RWQCB. Allowing parties other than the LRO or a duly authorized representative to access CIWQS and submit information on his or her behalf is illegal and is considered fraud. Persons involved in such fraudulent activities can be subject to criminal prosecution. In order for a person to be officially designated as a LRO, they must register as a LRO through CIWQS by clicking on the "User Registration" button at the following link: http://ciwqs.waterboards.ca.gov/. The person registering as a LRO must complete the information requested in the CIWQS User Registration process, and print, sign, and mail the completed form to CIWQS Registration, P.O. Box 671, Sacramento, CA 95812. The CIWQS Help Center will send an email notification with the LRO's user name and password after the registration is approved.
Monitoring and Reporting Program (MRP)	Establishes monitoring, record keeping, reporting and public notification requirements as part of a waste discharge requirements (WDR). In this SOP, MRP refers to Order No. WQ 2013-0058-EXEC, which is the Amended MRP for WDR Order No. 2006-0003-DWQ. Order No. 2006-DWQ is defined below under WDR.
Motor Control Center (MCC)	An apparatus, which controls multiple electric motors. MCCs are physical groupings of combination starters, which are a single enclosure containing the motor starter, fuses or circuit breaker, and a device for disconnecting power, in one assembly. Other devices associated with the motor, such as indicator lights, may also be included.
Municipal Separate Storm Sewer System (MS4)	As defined by 40 CFR 122.26(b)(8), a MS4 is "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the Clean Water Act that discharges into waters of the United States. (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and

	(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."
Occupational Safety and Health Administration (OSHA)	OSHA, which is part of the United States Department of Labor and was created to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education, and assistance.
Personal Protective Equipment (PPE)	PPE is designed to protect workers from serious workplace injuries or illnesses resulting from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. PPE includes a variety of equipment, devices, and garments including, but not limited to, face shields, safety glasses, hard hats, safety shoes, goggles, coveralls, gloves, vests, earplugs, and respirators. PPE standards are in Title 29 of the Code of Federal Regulations (CFR), Part 1910 Subpart I, and Title 8 of the California Code of Regulations (CCR) Chapter 4.
Private Lateral Sewage Discharge (PLSD)	Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the City's sanitary sewer or from other private sewer assets.
Regional Water Quality Control Board (RWQCB)	There are nine (9) RWQCBs in California, which are semi-autonomous and are comprised of nine (9) part-time Board Members appointed by the Governor and confirmed by the Senate. Each RWQCB makes water quality decisions for its region, including setting standards, issuing WDRs, determining compliance with those requirements, and taking appropriate enforcement action. The City of Hollister is located in RWQCB Region 3: Central Coast, and therefore is regulated and monitored by the Central Coast RWQCB.
Sanitary Sewer Overflow (SSO)	Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include: 1. Overflows or releases of untreated or partially treated wastewater that reach waters of the United States; 2. Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and 3. Wastewater backups into buildings on private property that are

	caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system. Temporary storage and conveyances 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.
Sanitary Sewer System (SSS)	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 conveyances 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.
Sewer System Management Plan (SSMP)	A system-specific plan required by the WDR, which includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis, and a spill response plan that establishes procedures for immediate response to a SSO in a manner designed to minimize water quality impacts and potential nuisance conditions.
Spill	Generic term referring to any sewage discharge (i.e., SSO or PLSD) resulting from a failure in a sanitary sewer system, privately owned lateral, or collection system.
Standard Operating Procedure (SOP)	A SOP is a set of written instructions that document a routine or repetitive activity followed by an organization.
State Water Resources Control Board (SWRCB)	The SWRCB's mission is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The SWRCB sets statewide policy, coordinates and supports RWQCB efforts, and reviews petitions that contest RWQCB actions. SWRCB is also solely responsible for allocating surface water rights. The SWRCB consists of five full-time salaried Board Members, each filling a different specialty position. Each Board Member is appointed to a four-year term by the Governor and confirmed by the Senate.
Untreated or	Any volume of waste discharge from the sanitary sewer system

Partially Treated Wastewater	upstream of a wastewater treatment plant headworks.
Waste Discharge Requirements (WDR)	WDRs regulate point discharges that are exempt pursuant to California Code of Regulations Title 27, Subsection 20090, such as sewage, and are not subject to the Federal Water Pollution Control Act. Discharges of domestic sewage or treated effluent are regulated by WDRs issued pursuant to California Code of Regulations Title 23, Division 3, Chapter 9. In this SOP, WDR refers to the SWRCB's Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003-DWQ, and Monitoring and Reporting Program (MRP) No. 2006-0003-DWQ as revised by Order No. WQ 2013-0058-EXEC, which requires all federal and state agencies, municipalities, counties, districts, and other public entities, which 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 to develop and implement Sewer System Management Plans and report all SSOs to SWRCB through CIWQS.
Wet Well	A chamber used for collecting sewage and to which the suction pipe of a pump is attached.
APWA Work Area Traffic Control Handbook (*WATCH*)	*WATCH* is a handbook that contains information for traffic control in construction work areas on local and county roads. The City of Hollister uses the 2016 *WATCH*.

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-03
Title: ANNUAL COLLECTION SYSTEM CLEANING, HIGH MAINTENANCE AREAS AND REPORTING		Revision: 0
Issued by:	Prepared by:	Page: 1 of 6
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Health and Safety Warnings

1. All collection system cleaning activities must be conducted in a safe and efficient manner that protects City Staff, the City's contractors, and the public.
2. Employees are required to follow the City's or contractor's safety practices and procedures, whichever is more stringent. These procedures must establish guidelines in compliance with the:
    a. Occupational Health and Safety Administration (OSHA);
    b. California Division of Occupational Safety and Health (Cal/OSHA);
    c. City of Hollister's Illness and Injury Prevention Program (IIPP); and
    d. City of Hollister requirements and standards.
3. Multiple hazards exist in the performance of collection system cleaning activities. The following are some of the more common hazards to be aware of:
    a. Traffic in the vicinity of collection system activities
    b. Distracted drivers
    c. Members of the public interested in collection system cleaning activities
    d. Slips, trips, and falls
    e. Falling objects
    f. Infections and disease
    g. Poisonous/toxic gases
    h. Strains and back injuries
    i. Bites (insects, bugs, rodents, etc.)
    j. Drowning
    k. Fire
    l. Electric Shock

m. Noise
n. Weather conditions

4. Wear appropriate personal protective equipment. Do not wear loose clothing, watches, jewelry.
5. Use boom to lift *only* manhole covers, vacuum hose and pipe. Do not leave manhole cover suspended from boom after removing. Lift manhole cover only high enough to remove from the opening.
6. Do not move chain drives by hand.

2. Cautions

1. Prior to leaving shop, inspect equipment using a systematic approach.
2. Verify that tooling is in good operating condition.
3. Verify Mapping of area to be cleaned.
4. Note any special instructions for use of low pressure, roots present, surcharging or blowback to reduce risk of damaging property or equipment.
5. Constantly verify water level in tanks, never run pump dry as damage to pump will occur.
6. Limit the contents of the debris tank in order to stay within the Gross Vehicle Weight Rating as listed on vehicle. Limit the amount of water stored on the vehicle when transporting a full tank of debris. Drain the debris tank of excess water before traveling to the dump or other work site.
7. Notify City staff prior to cleaning so that they can answer questions from public related to sewer cleaning activities.

3. Interferences

1. Staff should maintain a professional attitude while conducting these procedures. Make every effort not to react to or be distracted by negative public comments regarding cleaning activities or associated traffic control measures

4. Personnel Qualifications and Responsibilities

1. Associate Engineer (Utilities)
    a. Responsible for monitoring the implementation of this SOP.
    b. Responsible for ensuring that all City Staff and contractors responsible for collection system cleaning are trained on this SOP annually.
    c. Responsible for reviewing and approving updates and revisions to this SOP.
2. Senior Maintenance Worker
    a. Responsible for the implementation of this SOP.
    b. Responsible for training City Staff responsible for implementing collection system cleaning on this SOP.
    c. Responsible for revising this procedure if deficiencies are found or program changes occur.
    d. Required to train on this SOP annually.
3. Maintenance Workers
    a. Required to train on this SOP annually.
4. Contractors Responsible for Collection System Cleaning Activities

   a. Required to train on this SOP annually.
5. These are minimum standards for conducting line cleaning activities. Additional training on sewer cleaning is advised and required when there are changes in cleaning activities, equipment, or procedures.

5. Equipment and Supplies

1. Personal Protective Equipment (PPE):
   a. Gloves
   b. Rubber Boots
   c. Safety Glasses
   d. Hearing Protection
   e. Flashlights
   f. Safety Vest
2. Equipment:
   a. Hydrovac Truck
   b. Tiger Tail
   c. Cleaning Nozzles
   d. Debris Catcher
   e. 5 Gallon Bucket
   f. Hydrant Key
   g. Manhole Pick
   h. Sledge Hammer
   i. Orange Cones and Delineators
   j. Handheld Traffic Signs
   k. Traffic Beacons
   l. Caution Tape
   m. Signage, such as “Work Ahead” and “Road Closed
3. Daily Log Book and Line Cleaning-Manhole Inspection Log
4. Pen
5. Camera
6. SS-SOP-07: Routine Traffic and Crowd Control

6. Procedure

City maintenance staff are responsible for; collection system cleaning, CCTV inspections, and manhole inspections. The entire gravity collection system is cleaned annually. High maintenance areas (HMAs) are inspected weekly and cleaned by City staff when significant buildup or blockages are found. Manhole inspections are conducted in conjunction with line cleaning activities and are divided into two types of inspections, annual inspections and 5-year inspections. All collection system cleaning activities and annual manhole inspections are documented in the City’s Line Cleaning-Manhole Inspection Log. Five-year manhole inspections are documented using the City’s Manhole Observation and Inspection Report, which is filed at the Public Works Department.

<u>Cleaning</u>:

All equipment should be inspected at the start of the work day to ensure that it is in safe working order. In addition to routine inspections, special attention should be given to the high-pressure hose. Areas where the outer surface of the hose has been cut or abraded should be replaced using couplings that are compatible with the specific hose in use. The hose should be pressure tested to its full rated operating pressure following any repair. A device to protect the pressure hose should be used at all times.

Prior to leaving shop check tools, supplies and equipment. Do a walk around of the Vac Con & check the tires lights & condition of this unit. Check that PPE is either on your person or in the truck. Verify on map area to be cleaned and note any special instructions; use of low pressure, roots present, residential blowback potential, etc.… Check water level in the Vac Con and fuel level.

Utilizing the City Sewer Atlas staff will proceed to each location and clean each section of line. Lines should be cleaned beginning with the outlying sections of the system, working back toward the each Lift Station or the Influent Wet Well at the WWTP. Generally the lines are cleaned, by a two man crew, a basin at a time, starting at the top or highest point and working down toward the bottom of the basin.

Line cleaning should be conducted as follows; beginning at the downstream manhole send the jetter nozzle forward to nearest upstream manhole. Begin jetting from the upstream manhole back to the downstream manhole catching any debris that returns as a result of cleaning activities and deposit debris into a 5 gallon bucket.

Perform multiple passes using the method described above until debris is no longer present while pulling back the line and the operator feels confident through visual observations the line is clean.

If problems occur during cleaning that indicate structural or other problems that may require CCTV inspection, note these conditions on the City's Line Cleaning-Manhole Inspection Log.

Once line is clean, wash interior of manhole bench and barrel and replace manhole insert (if applicable) and cover.

*******For specific instructions on safe operation of the Vac-Con see the procedure titled; *Safety Guides for a Vac-Con* shown in Attachment #2 provided with this O&M Procedure.

Write down all line cleaning and manhole observation information onto City's Line Cleaning-Manhole Inspection Log, include observation notes. Make sure all fields and notes on form are completed.

If structural or other defects are observed with the manhole where cleaning activities are occurring, note the need for further inspection utilizing the Line Cleaning-Manhole Inspection Log. If manhole inspections are being conducted concurrent with HMA cleaning activities, fill out the Line Cleaning-Manhole Inspection Log noting the conditions observed at the manhole.

Reporting:

Annual Reporting should include all Annual, HMA, and SSO related line cleaning, summarizing these activities for the fiscal year. This report should be completed and included as documentation in the City SSMP by June15th each year.

7. Data and Records Management

1. All required records shall be maintained for a minimum of five (5) years and shall be made available for review by the SWRCB and RWQCB during an onsite inspection or through an information request.
2. Records documenting compliance with all provisions of the WDR and MRP including any required records generated by contractors performing work on the sanitary sewer system or assisting in SSO response.
3. Annual and HMA sewer line cleaning data and records are planned to be maintained in the City's work history system once this system is developed. Each section of line will be identified using GIS Atlas ID #s on the Collection System Maintenance Record. Observed line cleaning information is currently tracked and maintained on the Line Cleaning-Manhole Inspection Log by City operations and maintenance staff. This information will be linked to the work history record once developed.

8. Quality Control and Quality Assurance

1. Work order and work history data is reviewed by the City Associate Engineer (Utilities) or their designee on a quarterly basis at a minimum. Any discrepancies or issues that are identified are corrected by the Senior Maintenance Worker or their designee.

9. References

1. SS-SOP-07: Routine Traffic and Crowd Control

10. Attachments

1. SS-SOP-9 Routine Traffic and Crowd Control,
2. City of Hollister Safety Guides for a Vac-Con
3. High Maintenance Area List,
4. City Sewer Atlas,
5. Line Cleaning-Manhole Inspection Log.

Standard Operating Procedure City of Hollister		Document No.: SS-SOP-03 Attachment No.: 2
Title: SEWER LINE CLEANING ATTACHMENT 2: Safety Guides for a Vac-Con		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 1 Effective Date: 2/28/2017

Standard Operating Procedure

Procedure –Safety Guides for a Vac-Con

1.1 General Safe Operations

STEP 1:	Wear appropriate personal protective equipment. Do not wear loose clothing, watches, jewelry.
STEP 2:	Use boom to lift *only* manhole covers, vacuum hose and pipe.
STEP 3:	Do not leave manhole cover suspended from boom after removing it. Lift man hole cover only high enough to remove it from the opening.
STEP 4:	Do not move chain drives by hand.
STEP 5:	Gross Vehicle Weight Rating 1. Limit the contents of the debris tank in order to stay within the G.V.W.R. as listed on vehicle. 2. Limit the amount of water stored on the vehicle when transporting a full tank of debris. 3. Drain the debris tank of excess water before traveling to the dump or other work site.

2.1 Procedure – Manual Vernier Throttle Operation (*Push/Pull Cable Type*)

STEP 1:	Slowly increase or decrease engine speed by turning the vernier knob. Do not depress the red release button and pull on the throttle to increase engine speed.
STEP 2:	For FAST SHUTDOWN of the engine, depress the red button and simultaneously push in on the vernier knob to immediately bring the engine back to idle speed.

3.1 Procedure – Vehicle Throttle Operation, Electronic

STEP 6:	(*Similar to Vehicle Cruise Control*) For FAST SHUTDOWN of the engine to idle speed push down the ON/OFF toggle switch to the OFF position.

4.1 Procedure – Engine Throttle Operation, Electric (*linear Acuator mounted on engine*)

STEP 1:	Use INCREASE/DECREASE toggle switch. Engine will increase to full speed in approximately 8 seconds.
STEP 2:	Linear actuators type throttles **do not** have a FAST SHUTDOWN feature. The engine must be shut off.

5.1 Procedure – Water System Operation

STEP 1:	Starting a Nozzle into a Pipe 1. Properly tighten all hoses and fittings. 2. Insert the complete nozzle, skid and tiger tail assembly into the pipe opening.

	3. Make sure all personnel are clear before pressurizing. The water jets can cause serious injury. 4. Slowly increase water pressure and let the nozzle start it's movement into the pipe until the leader hose has completely entered the pipe. 5. Turn off water pressure to the sewer cleaning hose and mark the location of nozzle by zeroing the optional footage counter and/or watch for the black leader hose to appear.
STEP 2:	Keep body parts away from in front of handgun, nozzle or open sewer cleaning hose.
STEP 3:	Use a leader hose, skid and nozzle assembly during operation of a sewer cleaning hose.
STEP 4:	Do not increase water pump engine speed above idle to provide max. handgun pressure of 800 psi.
STEP 5:	Do not tie or lock down any operating control to the unit.

6.1 Procedure – Boom and Vacuum System

STEP 1:	Do not use excessive boom force to excavate. Allow the vacuum to remove the material.
STEP 2:	Use rubber nozzles – not metal - to vacuum excavate. Use fiberglass nozzle when working around power lines to prevent static spark.
STEP 3:	Be aware of overhead obstructions when operating the boom.
STEP 4:	Stay clear of the suction end of hose, nozzle, tube or boom.
STEP 5:	Only move truck when boom is in the transport position and connected to the boom tie down.
STEP 6:	Do not attempt to attach pipes with the vacuum system operating.

7.1 Procedure – Debris Tank Safety

STEP 1:	Clear all overhead obstructions before raising the debris tank.
STEP 2:	Before standing directly behind debris tank door to open safety "T" handles, ensure hydraulic door latches are engaged and tank is lowered.
STEP 3:	Raise the debris tank **only** when vehicle is on level ground.
STEP 4:	While tank is in dump position, do not move vehicle.
STEP 5:	Step away when dumping material.
STEP 6:	Place door prop before standing between an open debris tank door and debris tank.

8.1 Procedure – Sewer Cleaning

STEP 1:	Risks When Working Around an Open Manhole 1. small rocks, sand or other materials may be propelled from the manhole due to the force of the water. 2. being struck by a nozzle that has reversed direction and come out of the manhole 3. falling into an open manhole.
STEP 2:	Sewer system return flows should be observed by the operator and interpreted to determine the condition of the line being cleaned.

STEP 3:	Conditions that allow workers to determine the position of the nozzle as it is pulled back toward the manhole include: ~ Increased noise ~ Increase in spray coming from the manhole ~ Presence of the leader hose ~ Footage counter approaching zero If any above conditions are observed, reduce water pressure and/or shut down the water system
STEP 4:	Working with non-Flowing (Blocked) Sewer Be aware that the hose and nozzle may be pushed out of the lateral pipe being cleaned under the following conditions: ~ Head pressure from upstream manholes and piping fill with fluid. ~ Where upstream sewer force mains or charge pumps are used. ~ Effluent, water and material that is flowing at a greater force than the sewer cleaning nozzle as the blockage is broken up.
STEP 5:	Do not override the hose reel IN-OUT hand control valve. This valve must be constantly held by the operator.
STEP 6:	When working with a manhole that is full of water, use a hook or other device to push the nozzle into the pipe. At idle speed slowly increase the water pressure until the nozzle has traveled several feet into the pipe.
STEP 7:	Do not operate the hose reel control faster than the nozzle can pull the sewer cleaning hose.
STEP 8:	Leader hose of at least 30 inches in length must be used to absorb the wear and tear of the debris being propelled back from the nozzle.
STEP 9:	Never apply pressure to a sewer hose and nozzle while its hanging in a manhole.

Standard Operating Procedure		Document No.:
City of Hollister		SS-SOP-03 Attachment No.: 5
Title: SEWER LINE CLEANING ATTACHMENT 5: Line Cleaning and Manhole Inspection Log		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 1 Effective Date: 2/28/2017

City of Hollister

Sewer Line Cleaning and Routine Manhole Inspection Log

Date: YYYY/ MM/ DD	Sewer Line Size & Material	Location	Manhole # Start/End	Footage	Observed Sewer Line Conditions	Manhole Observations: Flow/Debris/Surcharge/Damage/Etc…

City of Hollister

Sewer Line Cleaning and Routine Manhole Inspection Log

Date: YYYY/ MM/ DD	Sewer Line Size & Material	Location	Manhole # Start/End	Footage	Observed Sewer Line Conditions	Manhole Observations: Flow/Debris/Surcharge/Damage/Etc…

City of Hollister

Sewer Line Cleaning and Routine Manhole Inspection Log

Date: YYYY/ MM/ DD	Sewer Line Size & Material	Location	Manhole # Start/End	Footage	Observed Sewer Line Conditions	Manhole Observations: Flow/Debris/Surcharge/Damage/Etc…

City of Hollister

Sewer Line Cleaning and Routine Manhole Inspection Log

Date: YYYY/ MM/ DD	Sewer Line Size & Material	Location	Manhole # Start/End	Footage	Observed Sewer Line Conditions	Manhole Observations: Flow/Debris/Surcharge/Damage/Etc…

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-08
Title: COLLECTION SYSTEM TRAINING REQUIREMENTS		Revision: 0
Issued by:	Prepared by:	Page: 1 of 4
Danny Hillstock *Associate Engineer,* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 1/31/2017

1. Health and Safety Warnings

1. All field training exercises must be conducted in a safe manner that protects City Staff, the City's contractors, and the public.
2. Employees are required to follow the City's or contractor's safety practices and procedures, whichever is more stringent. These procedures must establish guidelines in compliance with the:
    a. Occupational Health and Safety Administration (OSHA);
    b. California Division of Occupational Safety and Health (Cal/OSHA);
    c. City of Hollister's Illness and Injury Prevention Program (IIPP); and
    d. City of Hollister requirements and standards.
3. Multiple hazards exist in the performance of field training. The following are some of the more common hazards to be aware of:
    a. Traffic in the vicinity of field training exercises
    b. Distracted drivers
    c. Members of the public interested in field training exercises
    d. Slips, trips, and falls
    e. Falling objects
    f. Infections and disease
    g. Strains and back injuries
    h. Bites (insects, bugs, rodents, etc.)
    i. Noise
    j. Weather conditions

2. Cautions

1. The validity of reported results depends on the quality and extent of the documentation taken and maintained by City Staff.
2. Ensure that all training activities are documented.
3. Review SWRCB and RWQCB records requirements annually in order to ensure the required information, documents, and records are being maintained by the City.
4. Ensure that all equipment is used correctly and as outlined in the City's SOPs and equipment manuals.

3. Interferences

1. Schedule training when City Staff schedules are relatively free in order to ensure that training exercise can be completed with minimal or no interruptions.
2. Require contractors responsible for assisting the City with collection system operation and maintenance (O&M) activities to be trained on the activities they are completing as part of their contracts and agreements with the City.

4. Personnel Qualifications and Responsibilities

1. City Associate Engineer (Utilities) and LRO
    a. Responsible for the overall management of the training program
    b. Responsible for ensuring that the Lead Wastewater is implementing the training program.
    c. Responsible for maintaining all training records and documents.
    d. Responsible for managing and maintaining all required records and documents.
    e. Responsible for ensuring that all required records are available upon request or inspection by SWRCB, RWQCB, or EPA.
    f. Responsible for managing, maintaining, and updating this SOP.
    g. Required to be trained on this SOP annually.

2. City Staff and Contractors Responsible for Collection System O&M Activities
    a. Required to be trained on this SOP annually.

5. Equipment and Supplies

1. The City's SOPs
2. Equipment and Supplies listed in each SOP required to perform training on each task

6. Procedure

Annual training will be conducted during the months of April and May each year. If additional training is required, it will be conducted on an as needed basis. Annual training is a minimum requirement for compliance with the SSSWDRs and City's SSMP.

Training must cover the following activities identified in the City's Collection System O&M SOPs found below. City staff is required to receive training follows each SOP in italics:

a) Preventative Maintenance Program (SS-SOP-1) *O&M Staff*
b) Lift Station Operations and Maintenance (SS-SOP-2) *O&M Staff*
c) Annual Collection System and High Maintenance Area Cleaning and Reporting (SS-SOP-3) *O&M Staff*
d) GIS Mapping and Sewer Atlas Updates (SS-SOP-4) *O&M Staff and Engineering Staff*
e) Underground Service Alert: USA Marking (SS-SOP-5) *O&M Staff*
f) Routine Traffic and Crowd Control (SS-SOP-7) *O&M Staff*
g) Sewer Connection Requests (SS-SOP-6) *O&M, Administrative, Engineering Staffs*
h) Collection System Training Requirements (SS-SOP-8) *O&M, Administrative, Engineering Staffs*

Individual Standard Operating Procedures (SOPs) must be read by staff and discussed to insure these procedures are thoroughly understood. Each procedure should be physically demonstrated to ensure the mechanics of current procedures and practices are still applicable.

7. Data and Records Management

1. All training records must be kept in the City's training binder, which is kept in the City Community Services Department office.
2. All required records shall be maintained for a minimum of five (5) years and shall be made available for review by the SWRCB and RWQCB during an onsite inspection or through an information request.

8. Quality Control and Quality Assurance

1. The City's SSMP is evaluated as outline in SSMP Element 9: Monitoring, Measurement, and Program Evaluations.
2. Procedures are evaluated by City Staff during training sessions and after being implemented.
    a. They are updated if there are any deficiencies.
3. Procedure updates are completed by the Senior Maintenance Worker, City Associate Engineer (Utilities), or LRO and must be approved by the City Associate Engineer (Utilities) or LRO.

9. References

1. O&M Manuals
2. Equipment Manuals
3. SOPs
4. City's SSMP

5. WDR: Order No. 2006-0003-DWQ
6. Adopted Amended MRP for the WDR: Order No. WQ 2013-0058-EXEC

10. Attachments

1. City of Hollister Operation and Maintenance SOPs.

Standard Operating Procedure City of Hollister		Document No: SS-SOP-04
Title: GIS & MAPPING UPDATES		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 6 Effective Date: 2/28/2017

1. Health and Safety Warnings

Safety is directly related to your level of training and professionalism. It is imperative that City operations staff conduct all day-to-day and training activities safely through a combination of awareness and professionalism.

Multiple hazards exist in the performance of Operations and Maintenance activities associated with map data collection. The following are some of the more common hazards to be aware of:

- Traffic in the general vicinity of operational activities.
- Distracted Drivers
- Members of the public interested in operational activities
- Slips, Trips, and Falls
- Falling Objects
- Lacerations and Contusions
- Strains and Back Injuries
- Bites (insects, bugs, rodents, etc…)
- Noise
- Inclement weather conditions

Employees are required to follow the City or Contractors Safety Practices and Procedures (whichever is more stringent). These procedures establish guidelines in compliance with the Injury and Illness Prevention Program (IIPP) mandates of the Federal Code of Regulations, the State of California Occupational Safety and Health Organization (Cal OSHA), and the City of Hollister.

2. Interferences

Staff must ensure that any and all structural changes that occur within the sewer system are accompanied by record drawings and a general description of work performed. When these records are received they must be logged in an annual index for review prior to the annual update to ensure all record drawings are available for integration into GIS.

3. Personnel Qualifications and Responsibilities

City Engineering staff, the Design Engineer of record, or the Contractor providing improvements will provide record drawings to the City Engineering Technician for incorporation into the City GIS mapping system. The person or entity providing record information will depend on the type of project. The City Associate Engineer (Utilities) will be responsible for the collection of this data from the potential sources mentioned above and submit the data to the City Engineering Technician.

1. City Associate Engineer (Utilities)
    a. Responsible for monitoring the implementation of this SOP.
    b. Responsible for ensuring that all City Staff and contractors responsible for maintaining or updating the City's GIS database are trained on this SOP annually.

2. The City Engineering Technician is responsible for uploading information shown on record drawings into the City GIS mapping system, showing all changes made to sewer assets.

4. Equipment and Supplies

1. Record drawings to be incorporated into City GIS.

5. Procedure

Public Improvement Projects:
City GIS Maps must be reviewed for accuracy and updated annually. Any discrepancies or updates should be addressed in June of each fiscal year. More frequent updates may be necessary when significant changes are made to the sewer system so that staff can continue to use GIS maps as a tool for operational activities.

Private Sewer Connections:
The City requires new construction and remodels for residential and commercial projects requiring sewer connection to apply for a project will-serve. As part of the will-serve process, sewer lateral connections are reviewed, conditioned, and approved by the City Engineer. The City Engineer receives record drawings showing the location of the projects sewer lateral connection to the sewer main. If the location differs from the existing record drawings, a redline change is made on a paper copy of the GIS map. This map is distributed to the Engineering Technician annually in June and changes are incorporated during the annual GIS update.

Field Observations:
During field work such as CCTV inspections or maintenance work, City Staff may observe deviations from information contained in the most recent GIS maps or master sewer atlas plans. Wherever possible, the observer should obtain accurate documentation of the corrections and update or redline the master atlas maps as well as notate the correction in the annual index so that both the atlas maps and GIS maps can be updated.

Data Collection:
When sewer asset improvements or replacements take place in the City, an electronic record drawing must be created to identify the location and all changes made to the specific asset. Information may be provided using the following 4 options:

1. A spreadsheet with the same “object id” identifier for each line of the original sewer system created for the Atlas.
2. A digital CAD or Shapefile with the same “object id” identifier for each line
3. A hard copy or digital image with redlines of modified areas, labeled with the “object id” and list of modifications made to that line.
4. Contact person and method of data modifications.

GIS Updates:
The GIS Specialist upon receipt of the above mentioned data will upload data to the City GIS map, assigning object identifiers to all assets that have been rehabilitated or upgraded and incorporate background information regarding physical changes to the asset.

In addition to providing general location mapping, the electronic map is updated as changes are made to the City’s collection system to include precise information relating to the general characteristics of the system components. This information includes

material composition, pipe diameters, segment lengths, slopes, grade elevations, invert elevations, drain field system, and survey data.

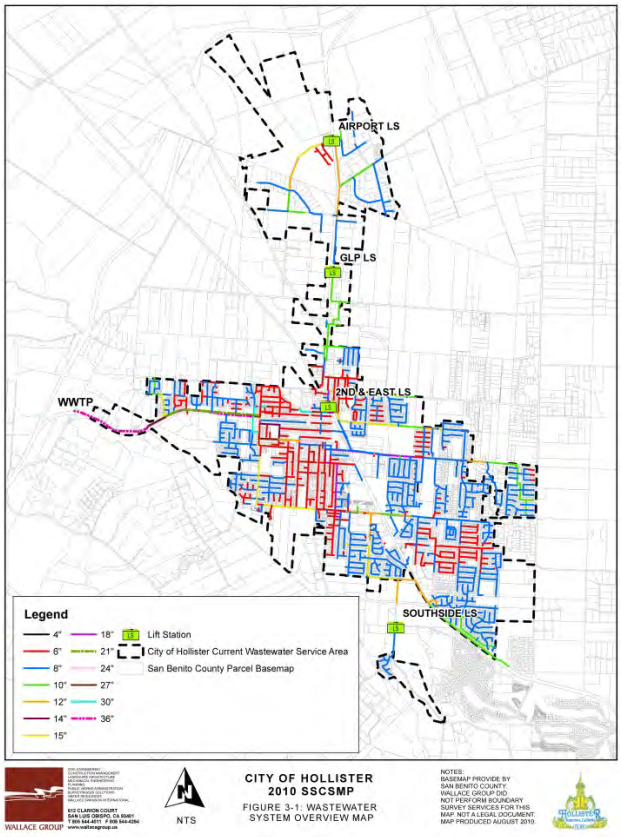


Figure 4-1: Sewer System Overview

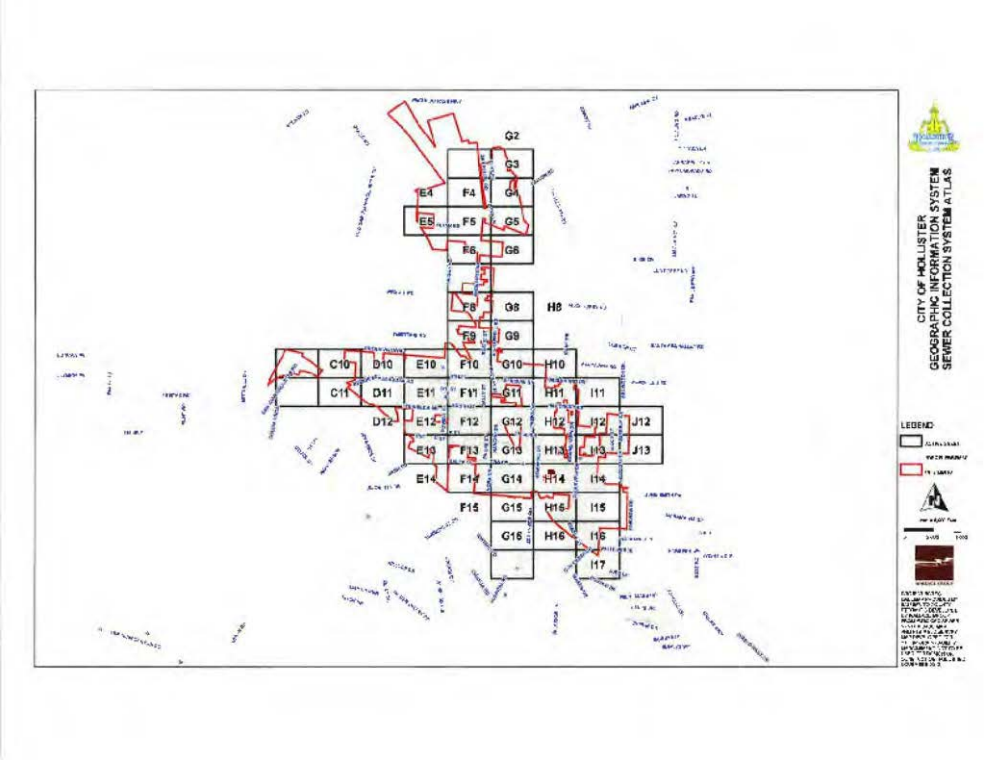


Figure 4-2: GIS Atlas

6. Data and Records Management

The City Associate Engineer (Utilities) will be responsible for the collection of data to be used for GIS Updates and submitting the data to the City Engineering Technician. The Engineering Technician is responsible for managing this data in the GIS database and documenting changes on the Sewer Map Revision Record, attached to this SOP.

7. Quality Control and Quality Assurance

Mapping and GIS data are reviewed annually by the City Engineer and Operations Manager to assess the accuracy of the GIS Atlas and mapping system.

8. References

N/A

9. Attachments

1. City of Hollister Service Area GIS Map: Hardcopy

2. Sewer Map Revision Record

<table>
<tr><td colspan="2">Standard Operating Procedure

City of Hollister</td><td>Document No.:

SS-SOP-04

Attachment No.: 1</td></tr>
<tr><td colspan="2">Title:
GIS MAP AND SEWER ATLAS UPDATES
ATTACHMENT 1:
Map Revision History</td><td>Revision:
0</td></tr>
<tr><td>Issued by:

Danny Hillstock, P.E.
Associate Engineer, Utilities
City of Hollister</td><td>Prepared by:

Bill Callahan
Director of Public Works Administration, Wallace Group</td><td>Page:
1 of 1

Effective Date:
2/28/2017</td></tr>
</table>

CITY OF HOLLISTER – SEWER MAP REVISION RECORD

The City of Hollister's Sewer System Atlas has undergone the following revisions:

Sheet #	Revision Date	Description of Revisions	Revision Completed By	Revision Approved By

CITY OF HOLLISTER – SEWER MAP REVISION RECORD

The City of Hollister's Sewer System Atlas has undergone the following revisions:

Sheet #	Revision Date	Description of Revisions	Revision Completed By	Revision Approved By

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-02
Title: LIFT STATION OPERATION AND MAINTENANCE		Revision: 0
Issued by:	Prepared by:	Page: 1 of 16
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Health and Safety Warnings

1. All lift station O&M activities must be conducted in a safe and efficient manner that protects City Staff, the City's contractors, and the public.
2. Employees are required to follow the City's or contractor's safety practices and procedures, whichever is more stringent. These procedures must establish guidelines in compliance with the:
    a. Occupational Health and Safety Administration (OSHA);
    b. California Division of Occupational Safety and Health (Cal/OSHA);
    c. City of Hollister's Illness and Injury Prevention Program (IIPP); and
    d. City of Hollister requirements and standards.
3. Multiple hazards exist in the performance of lift station O&M activities. The following are some of the more common hazards to be aware of:
    a. Traffic in the vicinity of SSO response activities
    b. Distracted drivers
    c. Members of the public interested in lift station O&M activities
    d. Slips, trips, and falls
    e. Falling objects
    f. Infections and disease
    g. Poisonous/toxic gases
    h. Strains and back injuries
    i. Bites (insects, bugs, rodents, etc.)
    j. Drowning

k. Fire
l. Electric Shock
m. Noise
n. Weather conditions

2. Cautions

N/A

3. Interferences

Operations staff must be trained on this SOP and in the proper operations and maintenance of lift stations prior to operating the Airport, GLP, 2nd and East and Southside Lift Stations. All observed alarms or potential problems must be reported to the S. Electrical troubleshooting and tests should only be performed by individuals who have been trained to perform electrical testing and maintenance.

4. Personnel Qualifications and Responsibilities

1. Associate Engineer (Utilities)
    a. Responsible for monitoring the implementation of this SOP.
    b. Responsible for ensuring that all City Staff and contractors responsible for lift station O&M are trained on this SOP annually.
2. Senior Maintenance Worker
    a. Responsible for the implementation of this SOP.
    b. Responsible for training City Staff responsible for implementing lift station O&M on this SOP.
    c. Responsible for revising this procedure if deficiencies are found or program changes occur.
    d. Required to train on this SOP annually.
3. Maintenance Workers
    a. Required to train on this SOP annually.
4. Electrical Tests
    a. These tests are referenced, but are not covered in this SOP.
    b. These tests must be performed by licensed individuals who are trained to perform electrical testing and maintenance.

5. Equipment and Supplies

N/A

6. Procedure

Inspection

1. Daily
    a. Visually inspect the wet well, MCC panels and all equipment for vandalism.
    b. Record run times/hours for each pump.
    c. Check alarms; pump failure, seal failure, high and low levels.
    d. Run each pump in “Hand” and verify that pumps are operating properly.
    e. Make sure pump controls are returned to “Auto”.
    f. Verify both pumps are operating in “Auto”.
    g. Check odor control systems for proper operation.
    h. Hose down wet well.
    i. Verify that the wet well lid and MCC panel are locked before leaving.
    j. Document all activities conducted on the Lift Station Log.

2. Weekly
    a. Alternate lead and lag pumps

3. Monthly
    a. Open the wet well and inspect for excessive grease and debris build up. Wet well walls and components should be cleaned.
    b. Inspect floats for proper operation and clean each float so it is free of debris, rags, and grease.
    c. Observe Check Valve operation.
    d. Inspect wet well, pipework and coatings for any damage.
    e. Document all activities conducted on the Lift Station Log.

4. Quarterly
    a. Full load amp reading and Meg Ohm reading are recorded in a Quarterly Lift Station Inspection Report. Pumps should be inspected for wear, debris or damage when motor hours are not within 10% of each other
    b. Check relays, circuit breaker, electrical connections, contactors, floats, fuses, indicator lights, HOA switches, and other electrical components.
    c. Wet well must be cleaned of all rags, grit, debris and grease using a vactor truck.
    d. Check alarms for proper operation.
    e. At least quarterly, operate portable generators under load to ensure proper operation of generator and lift station under emergency power supply. Run test for a minimum of 15 minutes. Check fuel levels, battery and general condition of each portable generator.
    f. All work performed by maintenance staff is to be recorded in the Lift Station Log.

5. Semiannually
    a. Wet well must be cleaned of all rags, grit, debris and grease using a Vac-Con truck.
    b. Exercise isolation valves.

c. Annual maintenance on lift station check valves. Isolate each check valve, remove cover plate. Clean interior of rags and debris. Inspect internal components of check valve and replace as necessary.

6. Annually
    a. Pull pumps and inspect impellers and volute for wear or damage.

7. Other Duties
    a. Respond to Lift Station alarms.
    b. Report any lift station problems to the Senior Maintenance Worker and Associate Engineer (Utilities).
    c. All work must be recorded in the Daily Lift Station Log Book.

The following information should be logged during routine (daily) lift station inspections:
- Date;
- Time;
- Initials of person performing inspection;
- Meter readings for each pump;
- Flow reading for each pump;
- General appearance (note if there is grease buildup or if wet well needs to be cleaned);
- Any maintenance done to the lift station;
- Date of pump and equipment calibrations (if applicable);
- Pump ratings in gallons per minute; and Power usage (if available)

City Lift Station Information

1. Airport Lift Station
   The Airport Lift Station is located off of Highway 156 (San Felipe Road) on Hollister Municipal Airport property near Armory Drive. This lift station collects flow from the airport, commercial and industrial parcels near the airport, and a small number of homes east of San Felipe Road. The Airport lift station is a duplex submersible pump configuration within a 6-foot by 10- foot rectangular wet well. At this time the station does not have dedicated back-up power, however there is a dedicated receptacle for a trailer mounted generator. The wet well is equipped with a Bioxide® system to minimize formation of hydrogen sulfide gas and a 4-inch PVC vent pipe. The station pumps into a 10-inch PVC force main that is routed directly to the GLP lift station. This lift station is located within a fenced in area at the municipal airport.

Figure 2-1: Airport Lift Station Wet Well Vault

Figure 2-2: Airport Lift Station MCC Panel

Figure 2-3: Airport Lift Station Level Controller and Alarm Panel

Operating Strategy (Airport Lift Station)

a. This lift station contains two (2) 25 HP Wemco “non-clog” pumps. In addition to the ultrasonic level instrumentation, level floats located inside the wet well serve as backup level monitoring in the event that the ultrasonic level control equipment fails. The ultrasonic level control and alarm unit is located in the MCC panel. Each submersible non-clog pump control is also located in the MCC panel of the Airport lift station control.

b. Alarms are provided for this station and monitor high and low wet well levels via a similar system as described above. When the alarm is activated, a red indicator light is activated at the top of the MCC Panel. The high level alarm is set at 9.0 ft. A low level alarm is also triggered when water levels are at 0.4 feet.

c. The “pump on” position is set approximately 5.9 ft. from the bottom of the wet well. The “pump off” position is set at approximately 3.0 feet. In the event a single pump is not providing enough output a second pump is activated when the water level is approximately 6.3 ft. from the bottom of the wet well.

d. In the event of an interruption in power, there is a manual transfer switch and generator plug available to accommodate an emergency backup generator. A

separate attachment for emergency power operation is included with this procedure.

e. Hydrogen sulfide and odor control are treated at this lift station using a Bioxide® system. Pumps should be checked for proper operation daily to ensure proper injection into the system.

2. GLP: Lift Station

The GLP List Station is located on Frontage Road between Park Center Drive to the north and McCloskey Road to the south. This lift station collects flow from residential customers between San Felipe Road and North Chappell Road, commercial and industrial customers along San Felipe Road, including the Best Western and Wiebe Motel. This station also receives flow directly from the Airport Lift Station force main. GLP is Hollister's largest lift station. The station is a triplex submersible pump configuration within a 10-foot diameter wet well. At this time the station does not have dedicated back-up power, however there is a dedicated receptacle for a trailer mounted generator. The wet well is equipped with a Bioxide® system to minimize formation of hydrogen sulfide gas. The station pumps into a 12-inch PVC force main that flows to a manhole on 2nd Street adjacent to the 2nd & East lift station. This lift station is located on Frontage Road.

Figure 2-4: GLP Lift Station

Operating Strategy (GLP Lift Station)

a. This lift station contains three (3) 20 HP Flygt “non-clog” pumps. In addition to the ultrasonic level instrumentation, level floats located inside the wet well serve as backup level monitoring in the event that the ultrasonic level control equipment fails. The ultrasonic level control and alarm unit is located in the MCC panel. Each submersible non-clog pump control is also located in the MCC panel of the GLP lift station control.

b. Alarms are provided for this station and monitor high and low wet well levels via a similar system as described above. When the alarm is activated, a red indicator light is activated at the top of the MCC Panel. The high level alarm is set at 8.0 ft. A low level alarm is also triggered when water levels are at 0.5 feet.

c. The “pump on” position is set approximately 5.7 ft. from the bottom of the wet well. The “pump off” position is set at approximately 2.6 feet. In the event a single pump is not providing enough output a second pump is activated when the water level is approximately 6.3 ft. from the bottom of the wet well and a third pump is also activated during high flow or emergencies at a set point of 7.2 feet.

d. In the event of an interruption in power, there is a manual transfer switch and generator plug available to accommodate an emergency backup generator. A separate attachment for emergency power operation is included with this procedure.

e. Hydrogen sulfide and odor control are treated at this lift station using a Bioxide® system. Pumps should be checked for proper operation daily to ensure proper injection into the system.

Figure 2-5 GLP Lift Station MCC Panel

Figure 2-6: GLP Lift Station Alarm and Level Control Panel

3. Southside Lift Station

The Southside Lift Station is located near the intersection of Southside Road and Enterprise Road outside the City limits. This lift station collects flow from the 56 unit subdivision, San Benito County public works facility and County owned labor camp near Hospital Road and Southside Road. The Southside lift station is a duplex submersible pump configuration within a 6-foot diameter wet well. The station was constructed in 1995. At this time the station does not have dedicated back-up power, however there is a dedicated receptacle for a trailer mounted generator. The station pumps into a 6-inch PVC force main that discharges to the manhole at the intersection of Southside Road and Union Road.

Figure 2-7: Southside Lift Station MCC, Level Control and Alarm Panel

Figure 2-8: Southside Lift Station Wet Well

Operating Strategy (Southside Lift Station)

a. This lift station contains two (2) 7.5 HP Flygt “non-clog” pumps. In addition to the ultrasonic level instrumentation, level floats located inside the wet well serve as backup level monitoring in the event that the ultrasonic level control equipment fails. The ultrasonic level control and alarm unit is located in the MCC panel. Each submersible non-clog pump control is also located in the MCC panel of the Southside lift station control.

b. Alarms are provided for this station and monitor high and low wet well levels via a similar system as described above. When the alarm is activated, a red indicator light is activated at the top of the MCC Panel. The high level alarm is set at 8.0 ft. A low level alarm is also triggered when water levels are at 0.0 feet.

c. The “pump on” position is set approximately 6.1 ft. from the bottom of the wet well. The “pump off” position is set at approximately 3.0 feet. In the event a single pump is not providing enough output a second pump is activated when the water level is approximately 7.5 ft. from the bottom of the wet well.

d. In the event of an interruption in power, there is a manual transfer switch and generator plug available to accommodate an emergency backup generator. A separate attachment for emergency power operation is included with this procedure.

4. 2nd & East Lift Station

The 2nd & East Lift Station is located at the intersection of Second Street and East Street. This lift station collects flow from residential customers between Highway 156 and Monte Carlo Drive, Gabilan Hills Elementary School and Maze Middle School, commercial customers along Highway 156 and McCray Street, and the Hollister Inn and Cinderella Motel. The 2nd & East lift station is a triplex submersible pump configuration within a 10-foot diameter wet well. The station was refurbished in 1993. The lift station piping interior to the wet well was replaced in 2010 due to corrosion. The City has installed a Biocube® filtration system onsite to treat gas released from the lift station due to odor issues. At this time the lift station does not have dedicated back-up power; however there is a dedicated receptacle for a trailer mounted generator. The station pumps into an 8-inch ductile iron force main, which transition to 10-inch and then discharges a short distance to a manhole in 2nd Street. This lift station is located within a fenced in area at the intersection of 2nd Street and East Street.

Figure 2-9: 2nd and East Lift Station
Wet Well and Control Panel

Figure 2-10: 2nd and East Lift Station MCC, Level Control and Alarm Panel

Operating Strategy (2nd and East Lift Station)

a. This lift station contains three (3) 10 HP Flygt “non-clog” pumps. In addition to the ultrasonic level instrumentation, level floats located inside the wet well serve as backup level monitoring in the event that the ultrasonic level control equipment fails. The ultrasonic level control and alarm unit is located in the MCC panel. Each submersible non-clog pump control is also located in the MCC panel of the 2nd and East lift station control.

b. Alarms are provided for this station and monitor high and low wet well levels via a similar system as described above. When the alarm is activated, a red indicator light is activated at the top of the MCC Panel. The high level alarm is set at 8.0 ft. A low level alarm is also triggered when water levels are at 2.0 feet. This station has an additional alarm at 15 feet signaling potential “overflow” conditions.

c. The “pump on” position is set approximately 5.0 ft. from the bottom of the wet well. The “pump off” position is set at approximately 2.7 feet. In the event a single pump is not providing enough output a second pump is activated when the water level is approximately 5.2 ft. from the bottom of the wet well. In the event of an emergency or significant flow conditions, a third pump activates at a 5.6 foot water level.

d. In the event of an interruption in power, there is a manual transfer switch and generator plug available to accommodate an emergency backup generator. A separate attachment for emergency power operation is included with this procedure.

e. This station also has bypass capabilities. In the event conditions warrant a portable pump can be installed for the transmission of wastewater to a manhole approximately 37 feet away on 2nd Street.

System Failure

1. Power is Available
    a. Check the electrical meter and determine if the meter is turning to ensure power is going to the lift station.
    b. Check the electrical panel to ensure the main switch is engaged and the system is in auto mode of operation.
    c. Confirm that the pumps are operating by turning the pump control switch to the “Hand” position, and listen for the electrical contactors to engage and the pumps to start running.

d. Monitor the level in the wet well to ensure that the level is dropping.
e. Confirm that all pump discharge line plug valves are in the open position and that the check valves are operating properly.
f. If the above mentioned system checks do not indicate the reason for system failure, immediately notify the Senior Maintenance Worker or Utilities Supervisor.
    i. Lift Station bypass procedures may be necessary until the problem is solved.

Figure 2-12: Typical Lift Station Emergency Power Receptacle

2. Power is Not Available
    a. Contact additional staff members for assistance to deliver trailer mounted emergency generator to site.
    b. Check the liquid level to establish the remaining capacity in wet well. If wet well level is high and in danger of overflow call for additional staff and the City Vac Con and or contracted Pumper Truck to lower wet well level until emergency power can be installed.
    c. Set up generator to bring lift station back on line. Connect generator cable to MCC power receptacle and follow City procedure for Emergency Power Supply located in Attachment #2.

Lift Station SSO Response Overview

1. Containment
    a. The following methods can be used to mitigate/contain SSOs:

i. Dikes can be constructed of dirt, sand bags or pump hoses.
    1. The purpose of using dikes is to prevent the spill from entering either a storm drain or surface waters.
    2. The diverted spill can be directed to either a downstream manhole for a sewage spill or to a natural spill containment area such as a low spot in a field, parking lot or roadway where the spilled material can be collected and later vacuumed up.

ii. Blocking off the entrances is a quick, effective method for protecting storm drain channels, catch basins or surface waters.
    1. Dirt, sandbags, pig style barriers or pipe plugs can be used to block off these entrances.

2. Recovery and Cleanup
    a. Once the source of the SSO has been stopped, all efforts must be made to recover as much of the spilled contents as possible.
        i. The sewer spill may be returned back into a sewer manhole.
        ii. If wastewater has entered the storm drain system efforts should be made to capture this material by plugging the downstream line and pumping with a trailer mounted pump or Vac Con unit. Wastewater should be returned to sanitary sewer system once recovered.

    b. The area of the SSO will need to be cleaned up.
        i. Sodium hypochlorite may be used as a disinfectant as long as there is minimal chance of contact with people and if the spill has no chance of reaching a storm drain or body of water.
            1. A 10:1 ratio of water and sodium hypochlorite may be applied by using a small handheld sprayer.
        ii. If chemical disinfection is not used, the area may be cleaned using water from a fire hydrant or hose bib and then vacuumed up and returned to the collection system.

3. Storm Drain Locations – Lift Station SSO
    a. The following are a list of potential storm drain inlet and outlet locations to consider when attempting to contain a Lift Station SSO. The following information is referenced in City GIS Maps. *See Maps for Southside and 2nd & East Lift Station locations in Attachment #4.*
        i. Southside Lift Station: drainage inlet immediately northwest of lift station on the east side of Southside Road. Inlet flows to storm drain manhole #G-16-3. This storm drain line flows west to an outlet at the San Benito River downstream of storm drain manhole #G16-5.
        ii. GLP Lift Station: there are no storm water conveyance lines in the vicinity of this lift station. The surrounding area is relatively flat. Drainage ditch behind lift station is potential collection point for a SSO. (*No attached map for this site*)
        iii. 2nd and East Lift Station: drainage inlets surrounding storm drain manhole #F10-21 to the south of this lift station on East Street are the

closest potential drainage features. This storm drain line flows west to an outlet on the San Benito River downstream of storm drain manhole #C11-12.

iv. Airport Lift Station: there are no storm water conveyance lines in the vicinity of this lift station. The surrounding area is relatively flat. Drainage ditch adjacent to lift station is potential collection point for a SSO. (*No attached map for this site*)

7. Data and Records Management

1. Any relevant information regarding lift station operations and maintenance activities should be documented in the daily log book at the WWTP and in the Weekly Lift Station Log.
2. All required records shall be maintained for a minimum of five (5) years and shall be made available for review by the SWRCB and RWQCB during an onsite inspection or through an information request.
3. Records documenting compliance with all provisions of the WDR and MRP including any required records generated by contractors performing work on the sanitary sewer system or assisting in SSO response at a lift station.

8. Quality Control and Quality Assurance

1. The Associate Engineer (Utilities) reviews all operational activities, logs, work history, and work orders on a quarterly basis.
2. Maintenance Staff notifies the Senior Maintenance Worker when routine and emergency maintenance is performed.

9. Attachments

1. Lift Station Log
2. Mobile Generator Operations Procedure
3. Table 5-1: Lift Station Summary
4. SSO Potential Storm Drain Locations

<table>
<tr><td colspan="2">Standard Operating Procedure
 
City of Hollister</td><td>Document No.:
SS-SOP-02
Attachment No.: 1</td></tr>
<tr><td colspan="2">Title:
LIFT STATION OPERATIONS AND MAINTENANCE
ATTACHMENT 1:
Lift Station Log</td><td>Revision:
0</td></tr>
<tr><td>Issued by:

Danny Hillstock, P.E.
Associate Engineer, Utilities
City of Hollister</td><td>Prepared by:

Bill Callahan
Director of Public Works Administration, Wallace Group</td><td>Page:
1 of 1
Effective Date:
2/28/2017</td></tr>
</table>

City of Hollister

Lift Station Log **Lift Station**: _____

Complete all columns daily. Log the date and initials for staff completing inspections. Record pump run times and respond to additional columns with Yes/No response. Summarize additional observations/conditions and maintenance performed in appropriate column.

Date & Initials	Hours and Run Time Pump #1	Hours and Run Time Pump #2	Hours and Run Time Pump #3	Test Pumps in Hand and Auto	Test Controls	Seal Failure Light On?	Test Alarms	Test Emergency Power Supply	Other Observed Conditions	Maintenance Performed

Standard Operating Procedure		Document No.: SS-SOP-02 Attachment No.: 2
City of Hollister		
Title: LIFT STATION OPERATIONS AND MAINTENANCE ATTACHMENT 2: City Emergency Mobile Generator Operations		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 1 Effective Date: 2/28/2017

Standard Operating Procedure

Procedure – Mobile Generator Operations

1. Procedure – Safety Guide

STEP 1:	Operator must be trained having received instructions on proper use of the machine, and must be familiar with required safety devices.
STEP 2:	Wear Personal Protective Equipment and close-fitting work clothes.
STEP 3:	Do not operate in standing water. Do not operate with wet hands.

2. Procedure – Starting

STEP 1:	Check through the pre-start-up checklist.
STEP 2:	Ensure voltage selector switch is set for the desired voltage output. Lock the switch in place.
STEP 3:	Turn main line circuit breaker and convenience receptacle circuit breakers to off "O".
STEP 4:	Turn engine start switch to REMOTE START to check engine control module. LCD panel should Momentarily display **initializing** followed by **ready** and engine information.
STEP 5:	Verify emergency stop display by pressing the button. Pull back out and return start switch to "O.
STEP 6:	Turn engine start switch to crank engine.
STEP 7:	Check that A/C voltage is correct. Voltage can be fine-adjusted by turning the voltage adjustment rheostat on the metering panel.
STEP 8:	Check frequency. Under no load conditions, frequency should read around 61.5 Hz, dropping to near 60 Hz as the generator load is switched on.

3. Procedure – Operations

STEP 1:	Leave engine start switch in 'START/RUN' position during operation. If generator was started in the REMOTE START position, leave engine start switch in that position.
STEP 2:	Do not overload the generator. Total amperage of the tools and equipment attached must not exceed the load rating of the generator.
STEP 3:	Do not exceed the rated current limit of any receptacle.
STEP 4:	The bonding bar between the ground connections must remain in place at all times unless a qualified electrician determines otherwise.
STEP 5:	When using as a standby or substitute power supply, make sure the voltage and phase rotation of the line connections match those of the utility lines.
STEP 6:	Let generator run for a few minutes to warm engine before closing main circuit breaker.

Standard Operating Procedure		Document No.:
City of Hollister		SS-SOP-02 Attachment No.: 3
Title: LIFT STATION O&M ATTACHMENT 3: Lift Station Descriptions		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 1 Effective Date: 2/28/2017

CITY OF HOLLISTER LIFT STATION INFORMATION

**Information in Appendix 04-2 is taken from the City of Hollister 2010 Sanitary Sewer Collection System Master Plan: Chapter 5 – Lift Station Evaluation.*

The City owns and operates four lift stations located throughout the collection system. The service areas and locations of the lift stations are depicted in Figure 5-1 and their features are summarized in Table 5-1. The four lift stations are as follows:

Airport Lift Station

The Airport Lift Station is located off of Highway 156 (San Felipe Road) on Hollister Municipal Airport property near Armory Drive. This lift station collects flow from the airport, commercial and industrial parcels near the airport, and a small number of homes east of San Felipe Road.

GLP Lift Station

The GLP List Station is located on Frontage Road between Park Center Drive to the north and McCloskey Road to the south. This lift station collects flow from residential customers between San Felipe Road and North Chappell Road, commercial and industrial customers along San Felipe Road, including the Best Western and Wiebe Motel. This station also receives flow directly from the Airport Lift Station force main.

2nd & East Lift Station

The 2nd & East Lift Station is located at the intersection of Second Street and East Street. This lift station collects flow from residential customers between Highway 156 and Monte Carlo Drive, Gabilan Hills Elementary School and Maze Middle School, commercial customers along Highway 156 and McCray Street, and the Hollister Inn and Cinderella Motel.

Southside Lift Station

The Southside Lift Station is located near the intersection of Southside Road and Enterprise Road outside the City limits. This lift station collects flow from the 56 unit subdivision, San Benito County public works facility and County owned labor camp near Hospital Road and Southside Road.

PHYSICAL DESCRIPTION

Information regarding the physical characteristics of the four lift stations was provided by City staff, and above ground features were visually reviewed by Wallace Group during site visits. A physical investigation of the City's lift stations was not conducted as a part of this analysis. The lift station features are summarized in Table 5-1.

Table 5-1. Lift Station Summary

		Lift Station			
		Airport	**GLP**	**2nd & East**	**Southside**
Date Constructed		NA	NA	NA	1995
Date Refurbished		2001	2001	1993	---
Type		submersible	submersible	submersible	submersible
Pump Manufacturer		Wemco	Flygt	Flygt	Flygt
Number of Pumps		2	3	3	2
Horsepower (HP), each		25	20	10	7.5
Impeller Trim (in) OR Impeller Code		10.375	454	434	439
Pump Model #		E5K-ST-EEXZ4	3152-091-9144	3127-093-0850072	3127-090-439MT
Motor Model #		EEXZ4	NA	NA	NA
Motor Serial #		01DW03318-01, -02, -03	NA	NA	NA
Voltage		460	460	460	460
Speed (rpm)		1750	1750	1750	1750
Motor Type		Constant Speed	Constant Speed	Constant Speed	Constant Speed
Pump Design Point	gpm	800	NA	600	400
	TDH (ft)	70	NA	14.5	33
Total Hours of Operation[1]	Pump 1	3,978	1,025	2,052	9,164
	Pump 2	3,702	951	1,616	2,491
	Pump 3	---	963	2,020	---
Permanent Standby Generator		no	no	no	no
Portable Generator Power Receptacle		yes	yes	yes	yes
Bypass Capabilities		no	no	yes	no
Wet Pit Coating		NA	NA	epoxy	NA
Wet Well Diameter or Length (ft)		10	10	10	6
Wet Well Width (ft)		6	---	---	---
Wet Well Invert Elevation (ft)		191.38	231	258	303.62
Wet Well Total Depth (ft)		28.10	17	25	17.25
Wet Well Set Points (feet)[2]	Low Alarm	0.4	0.5	2.0	0.0
	Off	3.0	2.6	2.7	3.0
	Lead On	5.9	5.7	5.0	6.1
	Lag On	6.3	6.7	5.2	7.5
	Last On	---	7.2	5.6	---
	High Alarm	9.0	8.0	8.0	8.0
	Overflow	---	---	15.0	---
Wet Well Operating Volume (gal)[3]		1,302	1,821	1,351	656
Wet Well Maximum Volume (gal)[4]		3,860	4,406	3,525	1,692
Force Main Diameter (inches)		10	12	8 & 10	6
Force Main Material		PVC	PVC	DI	PVC
Force Main Length (feet)		6,992	7,128	37	1,320
Force Main Start Elevation (feet)[5]		193.03	231.00	260.00	303.62
Force Main End Elevation (feet)		244.67	280.12	273.72	327.32
Force Main Total Static Head (feet)		51.6	49.1	13.7	23.7

NA - Not Available

1. Total pumping hours as of October 1, 2009. Information provided by City Staff.
2. Information provided by City staff.
3. Wet well operating volume calculated based on operating range from Pump Off to Lead On
4. Wet well maximum volume calculated based on maximum desired operating range (Low Alarm to High Alarm)
5. Elevation assumed for 2nd & East and Southside Lift Stations, based on low wet well alarm.

Airport Lift Station

The Airport lift station is a duplex submersible pump configuration within a 6-foot by 10- foot rectangular wet well. The station was refurbished in 2001. At this time the station does not have dedicated back-up power. The wet well is equipped with a Bioxide® system to minimize formation of hydrogen sulfide gas and a 4-inch PVC vent pipe. The station pumps into a 10-inch PVC force main that is routed directly to the GLP lift station. This lift station is located within a fenced in area at the municipal airport.

GLP Lift Station

GLP is Hollister's largest lift station. The station is a triplex submersible pump configuration within a 10-foot diameter wet well. The station was refurbished in 2001. At this time the station does not have dedicated back-up power. The wet well is equipped with a Bioxide® system to minimize formation of hydrogen sulfide gas. The station pumps into a 12-inch PVC force main that flows to a manhole on 2nd Street adjacent to the 2nd & East lift station. This lift station is located on Frontage Road.

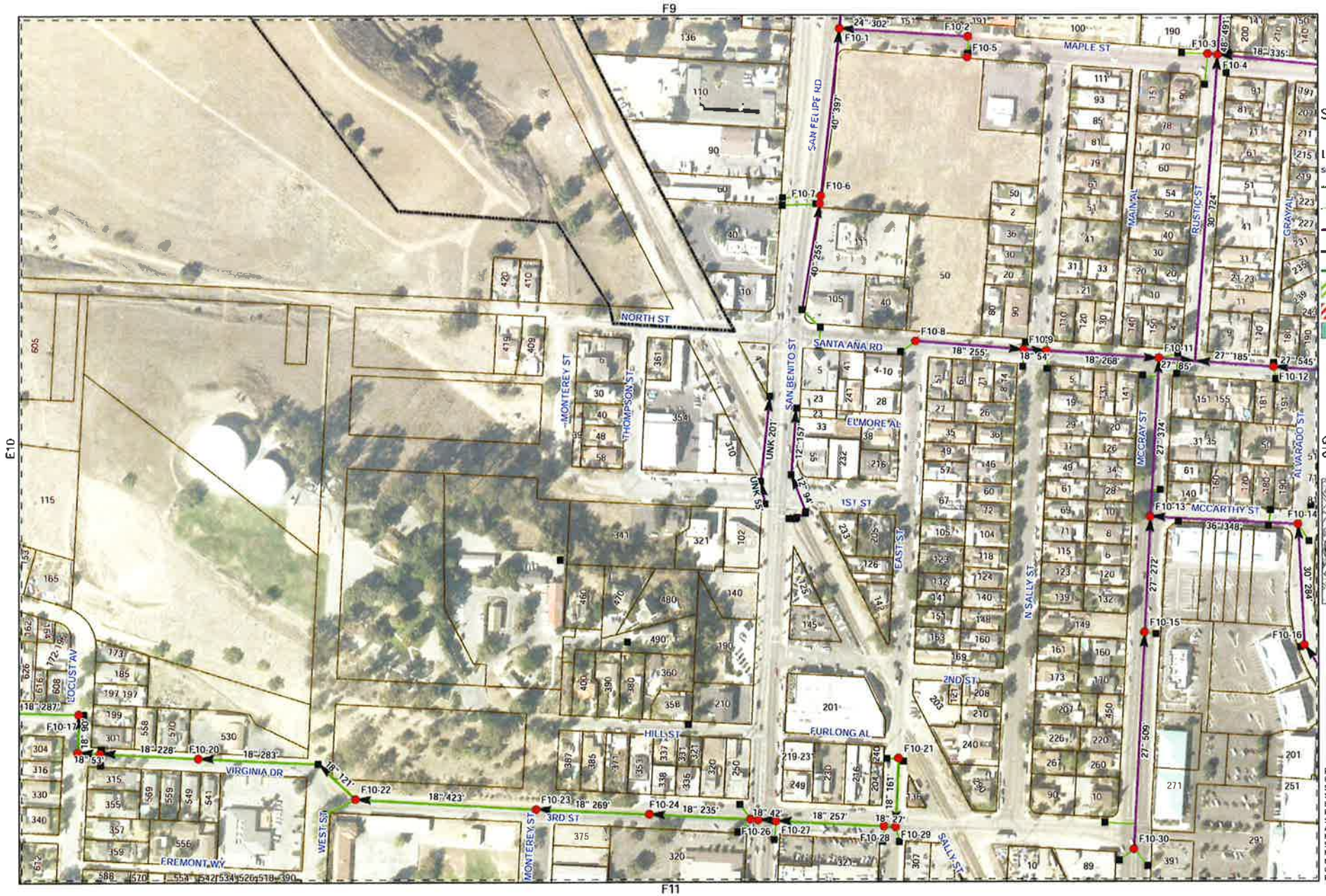
2nd & East Lift Station

The 2nd & East lift station is a triplex submersible pump configuration within a 10-foot diameter wet well. The station was refurbished in 1993. The lift station piping interior to the wet well was replaced in 2010 due to corrosion. The City has installed a Biocube® filtration system onsite to treat gas released from the lift station due to odor issues. At this time the lift station does not have dedicated back-up power. The station pumps into an 8-inch ductile iron force main, which transition to 10-inch and then discharges a short distance to a manhole in 2nd Street. This lift station is located within a fenced in area at the intersection of 2nd Street and East Street.

Southside Lift Station

The Southside lift station is a duplex submersible pump configuration within a 6-foot diameter wet well. The station was constructed in 1995. At this time the station does not have dedicated back-up power. The station pumps into a 6-inch PVC force main that discharges to the manhole at the intersection of Southside Road and Union Road.

Standard Operating Procedure		Document No.:
City of Hollister		SS-SOP-02 Attachment No.: 4
Title: LIFT STATION OPERATIONS AND MAINTENANCE ATTACHMENT 4: SSOs and Associated Storm Drains		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 1 Effective Date: 2/28/2017



STORM DRAIN ATLAS

LEGEND

SD GRAVITY PIPE

- SAN BENITO RIVER
- SANTA ANA CREEK
- TERMINAL BASIN
- WWTP
- SDABANDON
- DETENTION
- TERMINAL
- SDSTRUCTURE
- SDMH
- SDCATCHBASIN
- SDOUTFALL
- SDCLEANOUT

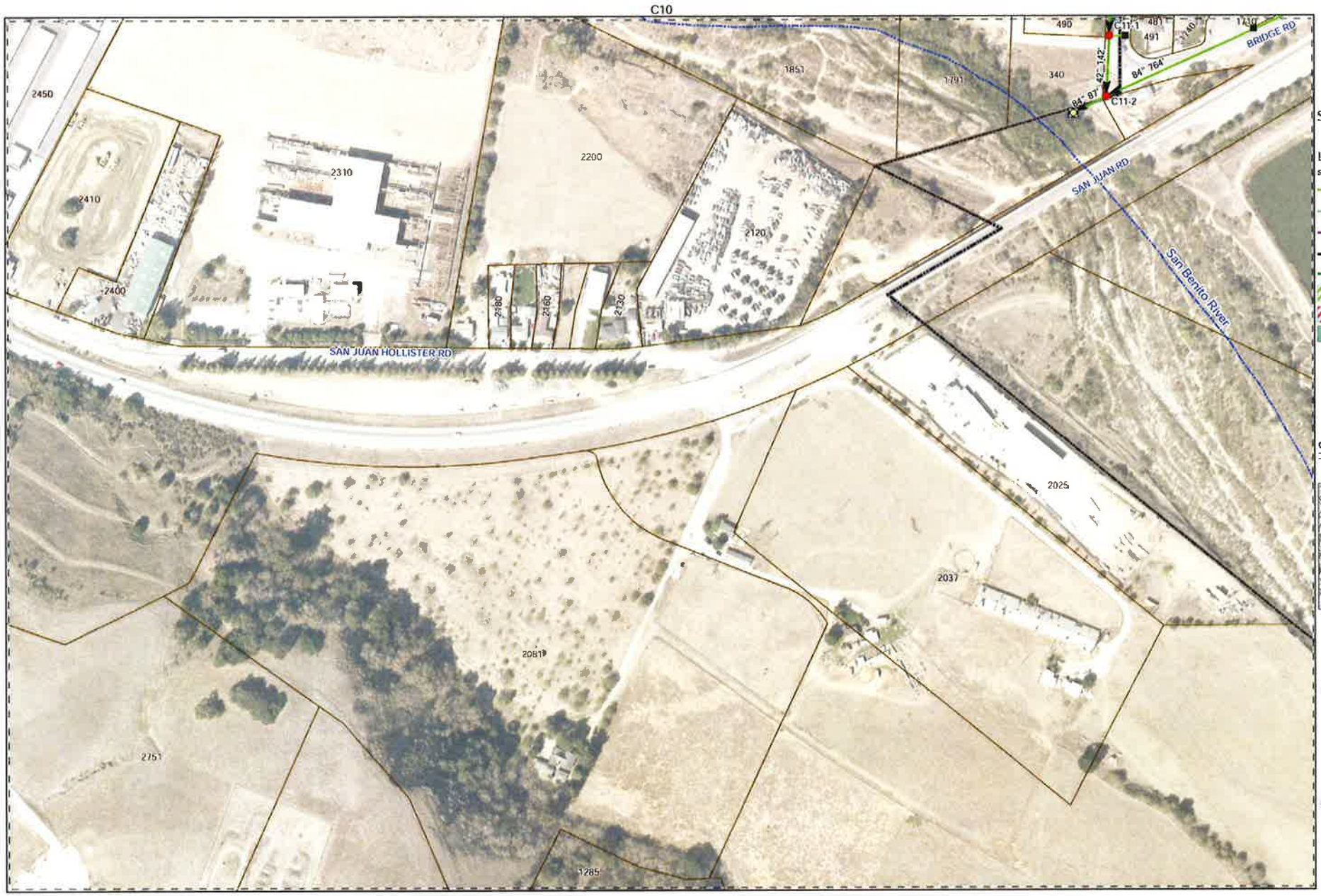
SHEET: F10

1 inch = 200 feet

0 100 200

WALLACE GROUP

PROJECT NOTES:
BASEMAP PROVIDED BY SAN BENITO COUNTY. STORM GIS DEVELOPED BY WALLACE GROUP FROM AUTO CAD SEWER SYSTEM BASE MAP AND RIM FILLD SURVEY MAP DEVELOPED FOR STORM DRAIN FACILITY MANAGEMENT. NOT TO BE USED FOR DESIGN OR CONSTRUCTION. PUBLISHED FEBRUARY 2011.



STORM DRAIN ATLAS

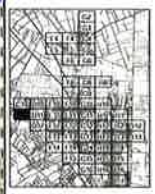
LEGEND

SD GRAVITY PIPE

- SAN BENITO RIVER
- SANTA ANA CREEK
- TERMINAL BASIN
- RWRP
- SDABANDON
- DETENTION
- TERMINAL
- SUBSTRUCTURE
- SDINLET
- SDMANHOLE
- SDOUTFALL
- SDOUTLET

C11

SHEET: C11



1 inch = 200 feet

0 100 200

WALLACE GROUP

PROJECT NOTES:
BASEMAP PROVIDED BY SAN BENITO COUNTY. STORM GIS DEVELOPED BY WALLACE GROUP FROM AUTO CAD SEWER SYSTEM BASE MAP AND RIM & FLO SURVEY MAP DEVELOPED FOR STORM DRAIN FACILITY MANAGEMENT. NOT TO BE USED FOR DESIGN OR CONSTRUCTION. PUBLISHED FEBRUARY 2013.


G15
G16-1
G16-2
G16-3
G16-4
G16-5
G16-6
G16-7
48" 286'
48" 148'
48" 301'
84" 401'
84" 520'
84" 515'
84" 148'
72" 340'
84" 232'
84" 338'
ENTERPRISE RD
SOUTHSIDE RD
San Benito River
2640
2740
2780
2910
320
100
2886
STORM DRAIN ATLAS
LEGEND
SD GRAVITY PIPE
SAN BENITO RIVER
SANTA ANA CREEK
PIPE RAM BASIN
PIPE FP
SD ABANDON
DETENTION
TERMINAL
SD STRUCTURE
SD MH
SD MANHOLE
SD CATCH BASIN
SD DOUBLE CB
SHEET: G16
WALLACE GROUP
PROJECT NOTES
BASEMAP PROVIDED BY SAN BENITO COUNTY
STORM GIS DEVELOPED BY WALLACE GROUP
STORM AND SEWER SYSTEM BASE MAP AND RTK FIELD SURVEY MAP DEVELOPED FOR STORM DRAIN FACILITY MANAGEMENT. NOT TO BE USED FOR DESIGN OR CONSTRUCTION.
FEBRUARY 2016

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-07
Title: ROUTINE TRAFFIC AND CROWD CONTROL		Revision: 0
Issued by:	Prepared by:	Page: 1 of 4
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Health and Safety Warnings

1. All traffic and crowd control activities must be conducted in a safe and efficient manner that protects City Staff, the City's contractors, and the public.
2. Employees are required to follow the City's or contractor's safety practices and procedures, whichever is more stringent. These procedures must establish guidelines in compliance with the:
    a. Occupational Health and Safety Administration (OSHA);
    b. California Division of Occupational Safety and Health (Cal/OSHA);
    c. City of Hollister's Illness and Injury Prevention Program (IIPP); and
    d. City of Hollister requirements and standards.
3. Multiple hazards exist in the performance of traffic and crowd control activities. The following are some of the more common hazards to be aware of:
    a. Traffic in the vicinity of operational activities
    b. Distracted drivers
    c. Members of the public interested in operational activities
    d. Slips, trips, and falls
    e. Falling objects
    f. Infections and disease
    g. Poisonous/toxic gases
    h. Strains and back injuries
    i. Bites (insects, bugs, rodents, etc.)
    j. Drowning
    k. Fire
    l. Electric Shock
    m. Noise
    n. Weather conditions

2. Cautions

1. Ensure that traffic and crowd control measures are maintained and items, such as signs, flags, and barricades, are not moved or removed.
2. If traffic or crowd control is needed due to a sanitary sewer overflow (SSO), refer to SS-EOP-04: SSO Traffic and Crowd Control. Do not use this SOP.

3. Interferences

1. This section is not applicable to this SOP.

4. Personnel Qualifications and Responsibilities

1. Utilities Supervisor
    a. Responsible for training all City Staff responsible for SSO Response are trained on this EOP annually.
    b. Responsible for ensuring that all contractors responsible for SSO Response train their Staff on this EOP annually.
    c. Responsible for managing, maintaining, and updating this EOP.
2. City Staff and Contractors Responsible for SSO Response
    a. Required to be trained on this EOP annually.
3. Police and Fire Departments
    a. Responsible for ensuring that their Staff is trained regularly in traffic and crowd control.
    b. Responsible for ensuring that their Staff is trained on and employs all of the health and safety requirements and precautions during traffic and crowd control activities.

5. Equipment and Supplies

1. APWA Work Area Traffic Control Handbook (*WATCH*)
2. Personal Protective Equipment (PPE):
    a. Gloves
    b. Safety Glasses
    c. Flashlights
    d. Safety Vest
3. Traffic and Crowd Control Equipment:
    a. Orange Cones and Delineators
    b. Handheld Traffic Signs
    c. Traffic Beacons
    d. Caution Tape
    e. Signage, such as “Work Ahead” and “Road Closed
4. Cell Phone

6. Procedure

Traffic control measures vary based on the type of operation, the event, and its location. When appropriate, local police, fire department and other city personnel should be notified and requested to assist in traffic and crowd control.

Traffic and Crowd Control

1. City of Hollister Staff follows the APWA Work Area Traffic Control Handbook (*WATCH*) for all traffic control.

2. Operational activities that occur in or impact a street or roadway require the initiation of the following general traffic control measures in order of priority:

    a. Protect yourself and your fellow employees.
    b. Protect the public.
    c. Protect the environment.
    d. Protect private property.

3. Establish a work zone.
    a. This is commonly done by using your truck to block the road and restrict access to the area you are working in.
    b. Turn on the maintenance vehicle's flashing beacon lights for greater visibility.

4. If it is necessary to close a traffic lane or the entire road for safety, follow the procedures outlined in the *APWA WATCH*.
    a. Deploy road work/closure signage, and station flaggers to direct traffic.
    b. Ensure that supervisorial staffs are aware of any lane closures or detours.

5. Public access must be restricted in areas where operational activities are occurring. Once traffic control measures are in place, if necessary, diversions for pedestrian and bicyclist must be put in place.
    a. Staff must restrict access to areas that fit this description whenever it is safe to do so, directing the public to the nearest safe route of travel away from the impacted area.
    b. If crowd control is needed, the Senior Maintenance Worker calls County Com at (831) 647-7911, which contacts Dispatch for the Police and Fire Departments, and requests support for crowd control.

6. If maintenance operations will be occurring near bicyclist and pedestrian travel routes, use safety cones, caution tape, and warning signs to divert pedestrians and bicyclists and restrict access to your work area. Where feasible, provide a safe alternative route or detour for bicyclists and pedestrians away from vehicular traffic lanes.

7. If a special event, such as a concert or festival, will be occurring at a time when maintenance work must occur, additional staff and public safety personnel may be

required to assist with traffic and or crowd control. Pre-plan maintenance activities with local law enforcement, so adequate traffic and crowd control assistance is available.

7. Data and Records Management

1. Any information regarding traffic and crowd control activities should be documented in the Daily Log Book at the Community Services Department.
2. Any incidences or encounters with the public should be documented on in the Daily Log Book.

8. Quality Control and Quality Assurance

1. If deficiencies are found in the performance of this SOP, the City Associate Engineer (Utilities) will revise this procedure and train Staff on the revised procedure.
2. The City Associate Engineer (Utilities) is responsible for reviewing and approving revisions to this procedure and ensuring that Staff is trained on those revisions.
3. The Senior Maintenance Worker is responsible for reviewing the Daily Log Book and to be apprised of maintenance operations.

9. References

1. APWA Work Area Traffic Control Handbook (*WATCH*)

10. Attachments

1. There are no attachments to this SOP.

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-06
Title: SEWER CONNECTION REQUESTS		Revision: 0
Issued by:	Prepared by:	Page: 1 of 4
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Health and Safety Warnings

Safety is directly related to your level of training and professionalism. It is imperative that City operations staff conduct all day-to-day activities safely through a combination of awareness and professionalism.

Multiple hazards exist in the performance of sewer connection request inspections. The following are some of the more common hazards to be aware of:

- Traffic in the general vicinity of operational activities.
- Distracted Drivers
- Members of the public interested in operational activities
- Slips, Trips, and Falls
- Falling Objects
- Lacerations and Contusions
- Strains and Back Injuries
- Bites (insects, bugs, rodents, etc…)
- Noise
- Inclement weather conditions

Employees are required to follow City or Contractors Safety Practices and Procedures (whichever is more stringent). These procedures establish guidelines in compliance with the Illness and Injury Prevention Program (IIPP,) mandates of the Federal Code of

Regulations, the State of California Occupational Safety and Health Organization (CalOSHA), and the City of Hollister.

2. Cautions

Staff should maintain a professional attitude while conducting these procedures. Make every effort not to react to or be distracted by negative public comments regarding your activities.

3. Interferences

N/A

4. Personnel Qualifications and Responsibilities

Connection request inspections should only be carried out by the following:

a) City of Hollister Engineering staff or a qualified designee
b) City of Hollister Utilities Supervisor or a qualified designee

Inspectors as described above are responsible for completing all inspection related paperwork and submitting to the City Engineering Office. The City Engineering Office is responsible for filing inspection related paperwork in the project file.

1. City Engineer
    a. Responsible for monitoring the implementation of this SOP.
    b. Responsible for ensuring that all City Staff and contractors responsible for sewer connection requests are trained on this SOP annually.

5. Equipment and Supplies

1) Safety Vest
2) Project Plan Set
3) City Sewer Lateral Standards

6. Procedure

Sewer connection requests are generated to address two types of projects:
1) City Will-Serve related projects (New Construction or Remodel)
2) Replacement of a sewer laterals to correct deficiencies

New Construction or Remodel:
Sewer connections for new construction or remodel are reviewed as part of the City's will-serve process, which occurs by submittal separately to the City Engineering Department.

Development projects that have integrated sewer connection requests are forwarded to City of Hollister Engineering staff for design review and/or revisions. Prior to approval for construction; the City assigns conditions to the project which are attached to the building permit i and are required to be implemented before project sign off.

- The City requires inspection and approval by the City Engineer of all sewer connection Improvements including all work performed and all materials furnished, including but not limited to, sewer pipe installation, and trench backfill and compaction testing.
- The City Engineering Manager will receive a request for inspection from the project contractor 48 hours prior to the date of inspection. Once this request is received, staff proceeds with the inspection to ensure City standards for installation or replacement of the sewer lateral have been followed.
- Only a properly licensed, bonded contractor may install lateral sewers in the public right-of-way and connect the same to city sewer lines.
- All connections to the public sewer shall be made in the presence of the City inspector and under his or her supervision and direction and in accordance with the rules, regulations, ordinances, and codes of the city.
- All connections, clean-outs, backwater valves, access vaults, and laterals are to be installed in conformance with standards and details adopted by the City standards and specifications and City Municipal Code Chapter 13.04, Article III: Building Sewers and Connections.
- Prior to final project sign-off, the Contractor shall provide as-built information to the City Engineer for approval. The as-built information shall include the exact location by centerline station and depth off all sewer laterals at the point where they cross the easement or street right-of-way line as well as the manhole and cleanout locations for the purpose of providing the engineer with a basis for record drawings.
- Any existing sewer service laterals that will not be used by the new project shall be removed and abandoned at the service main. The Contractor is responsible to notify the City with the location and size of lines to be abandoned prior to final sign off.

Sewer Lateral Replacement (unrelated to Will-Serve connection):
Sewer laterals are occasionally replaced due to structural or other problems that do not allow the lateral to perform as designed. Contractors replacing or rehabilitating these sewer laterals are required to give 48 hour notice to obtain a City inspection. City Inspection Standards and Specifications must be adhered to for these replacements. City inspection of these laterals should be documented, outlining the observations and determinations associated with the replacement and inspection. Inspection Reports are signed by the inspector and submitted to the City Engineering Department for filing.

7. Data and Records Management

1. All required records shall be maintained for a minimum of five (5) years and shall be made available for review by the SWRCB and RWQCB during an onsite inspection or through an information request.
2. Records documenting compliance with all provisions of the WDR and MRP including any required records generated by contractors performing work on the sanitary sewer system or assisting in SSO response.

8. Quality Control and Quality Assurance

1. The City Engineer reviews all incoming connection requests and oversees the work of the Construction Inspector reviewing connection installations.
2. The Inspector notifies the City Engineer of any issues or irregularities with the connection work.
3. The City Engineer oversees Field Worker staff performing routine and emergency maintenance.

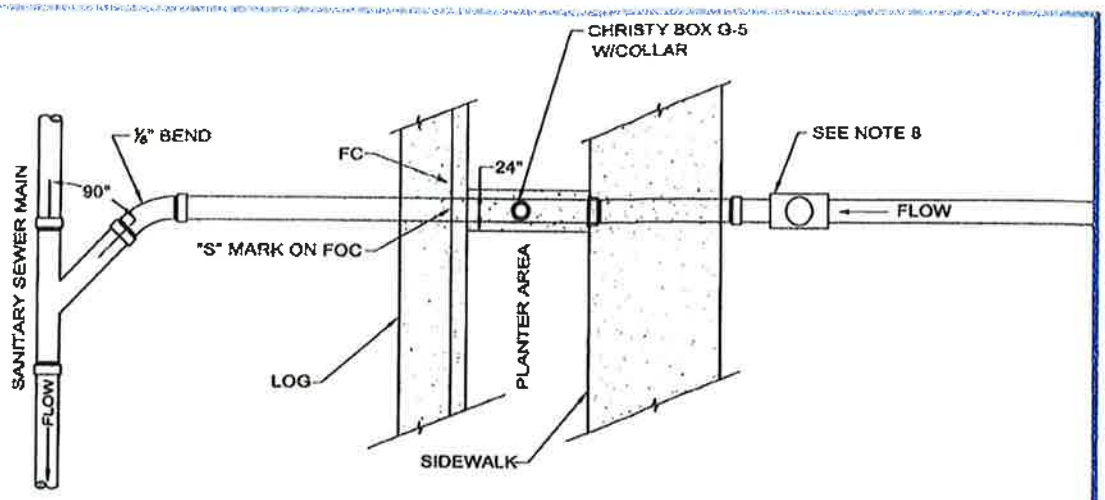
9. References

- City of Hollister Municipal Code Section 13.04 Sewer Code
- City of Hollister Standard Details 2013

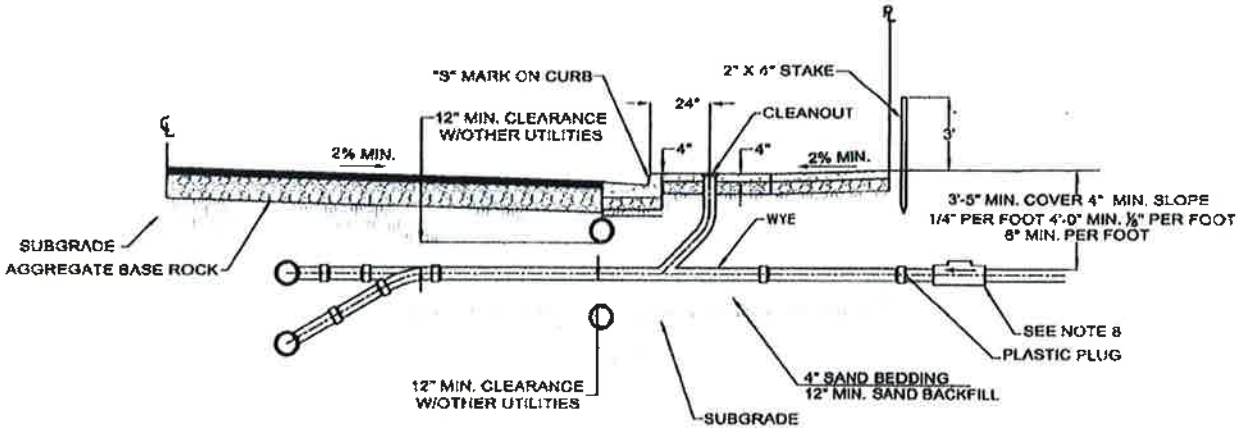
10. Attachments

1. Standard Details for Sewer Laterals and Backflows

Standard Operating Procedure		Document No.:
City of Hollister		SS-SOP-06 Attachment No.: 1
Title: SEWER CONNECTION REQUESTS ATTACHMENT 1: Sewer Lateral Details		Revision: 0
Issued by: Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Prepared by: Bill Callahan *Director of Public Works Administration,* Wallace Group	Page: 1 of 1 Effective Date: 2/28/2017



PLAN



ELEVATION

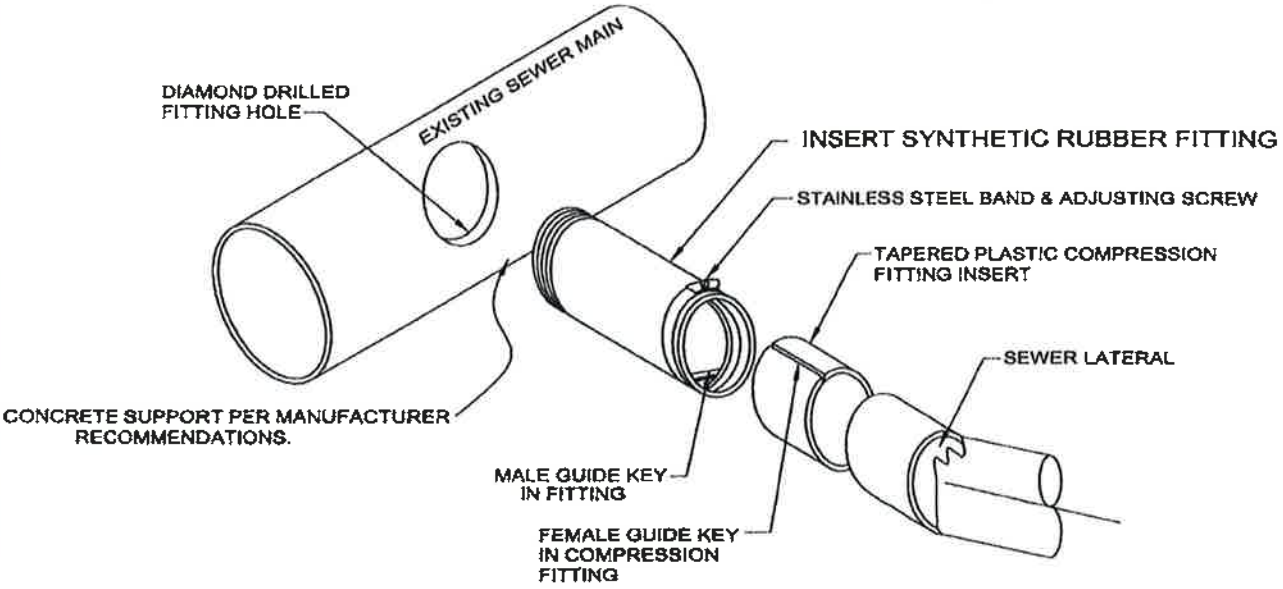
NOTES:

1. SEWER LATERALS SHALL BE ABS (SCH. 40) OR PVC (SDR 26) ASTM D3036 PIPE.
2. STAMP OR CHISEL AN "S" ON THE FACE OF CURB AT LATERAL LOCATION.
3. A PRESSURE TREATED DOUGLAS FIR STAKE SHALL BE INSTALLED AT EACH LATERAL TERMINUS. ALL STAKES SHALL BE PAINTED WHITE.
4. ALL SAND BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION
5. ALL SEWER LATERALS SHALL PASS A LOW PRESSURE AIR AND MANDREL TESTING PREFORMED AFTER COMPACTION & MAJORITY OF BASE ROCK INSTALLED.
6. ALL SANITARY SEWER MAINS SHALL BE VIDEOED BY AN INDEPENDENT CONTRACTOR APPROVED BY CITY ENGINEER.
7. BEDDING & TRENCH BACKFILLING REQUIREMENTS PER STANDARD PLAN E-3-1.
8. BACKFLOW PREVENTION DEVICE IS REQUIRED ON SEWER LATERALS WITH FULL CAPACITY SEWER MAINS AND SEWER LATERAL, BELOW THE DOWNS STREAM INVERT ELEVATION OF SEWER MAINS BACKFLOW PREVENTION DEVICE TO BE INSTALLED ON PRIVATE PROPERTY ONLY.

TITLE:

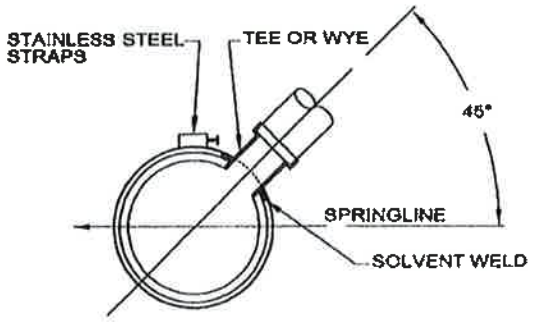
SEWER LATERAL & CLEANOUT

DRAWN BY: LOUIE C. GUEVARA	SCALE: NONE	APPROVED:	STANDARD PLAN
REVIEWED BY: DAVID RUBCIC	REVISED APRIL, 2013	7-16-13	C-2-1
CITY OF HOLLISTER ENGINEERING DEPARTMENT		CITY ENGINEER: RUDI GOLNIK LIC. NO. 39570 EXP. DATE: 12-31-2013 DATE	SHEET 1 OF 1



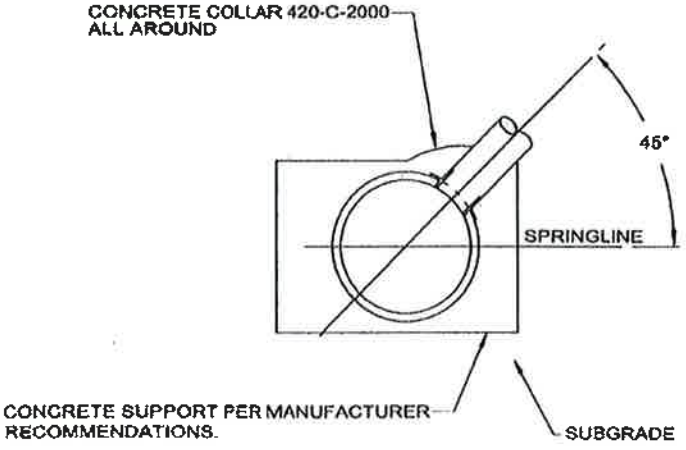
SYNTHETIC RUBBER WEDGED INSERT TEE TAP TITE (VCP)

(MIN. DIFFERENTIAL OF TWO SIZES REQUIRED)



TEE OR WYE (PVC OR ABS)

(SOLVENT WELDED FITTINGS)

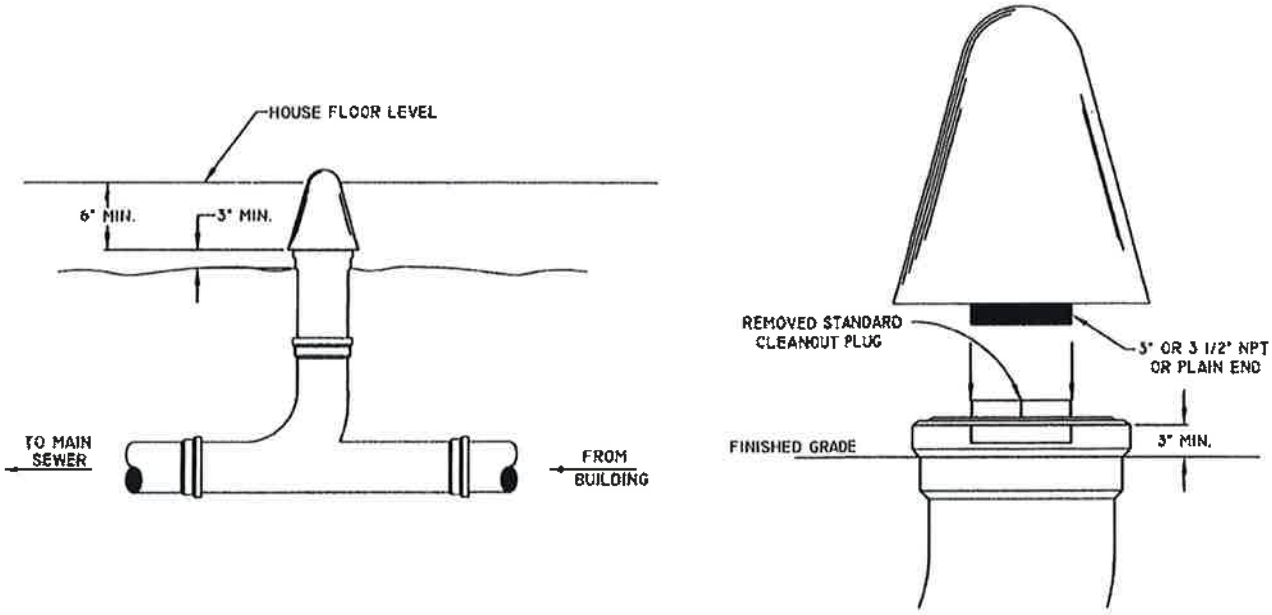


SEWER MAIN TAP

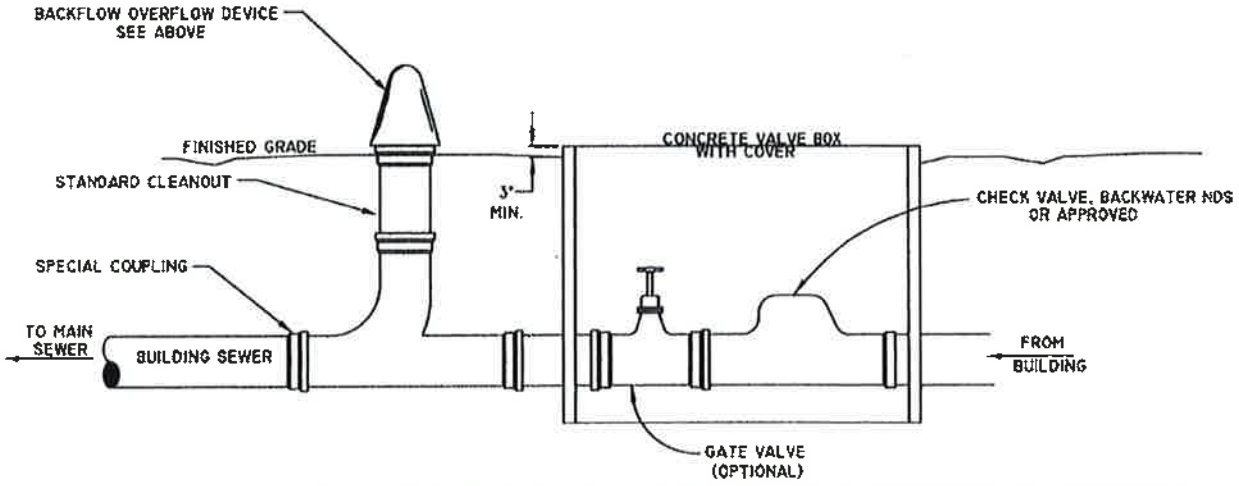
TITLE

SEWER LATERAL TAPPING TO EXISTING VCP SEWER MAINS

DRAWN BY: LOUIE C. GUEVARA	SCALE: NONE	APPROVED:	STANDARD PLAN
REVIEWED BY: DAVID RUBCIC	REVISED: APRIL, 2013	7-16-13	C-3
CITY OF HOLLISTER ENGINEERING DEPARTMENT		CITY ENGINEER: RUDI GOLNIK LIC. NO. 30570 EXP. DATE: 12-31-2013 DATE	SHEET 1 OF 1



BACKWATER OVERFLOW DEVICE



BACKWATER CHECK VALVE & SHUTOFF SYSTEM

NOTES:

1. AN OVERFLOW SYSTEM IS REQUIRED AND SHALL BE INSTALLED WHERE THE FINISH FLOOR ELEVATION OF THE BUILDING TO BE CONNECTED IS LESS THAN (1) ONE FOOT ABOVE THE RIM OF THE NEAREST UPSTREAM MANHOLE.
2. THE INSTALLATION OF THE BACKWATER OVERFLOW DEVICE SHALL BE MADE AFTER THE FINAL GRADING AROUND THE BUILDING IS COMPLETE. THE BACKWATER OVERFLOW DEVICE SHALL BE AS DETAILED, OR AN APPROVED EQUAL.
3. CONSIDERATION MUST BE GIVEN TO THE DAMAGE POTENTIAL TO ADJACENT PROPERTY BY SEWAGE RELEASED THROUGH THE BACKWATER OVERFLOW DEVICE.

TITLE

BACKFLOW PREVENTATIVE DEVICES

DRAWN BY: LOUIE C. GUEVARA	SCALE: NONE	APPROVED: 7-16-13	STANDARD PLAN C-4
REVIEWED BY: DAVID RUBCIC	REVISED: APRIL, 2013	CITY ENGINEER: RUDI GOLNIK LIC. NO. 39570 EXP. DATE: 12-31-2013 DATE	SHEET 1 OF 1
CITY OF HOLLISTER ENGINEERING DEPARTMENT			

Standard Operating Procedure		Document No:
City of Hollister		SS-SOP-05
Title: UNDERGROUND FACILITY MARKING		Revision: 0
Issued by:	Prepared by:	Page: 1 of 9
Danny Hillstock, P.E. *Associate Engineer, Utilities* City of Hollister	Bill Callahan *Director of Public Works Administration,* Wallace Group	Effective Date: 2/28/2017

1. Health and Safety Warnings

1. All field markings must be conducted in a safe and efficient manner that protects City Staff, the City's contractors, and the public.
2. Employees are required to follow the City's or contractor's safety practices and procedures, whichever is more stringent. These procedures must establish guidelines in compliance with the:
    a. Occupational Health and Safety Administration (OSHA);
    b. California Division of Occupational Safety and Health (Cal/OSHA);
    c. City of Hollister's Illness and Injury Prevention Program (IIPP); and
    d. City of Hollister requirements and standards.
3. Multiple hazards exist while completing field markings. The following are some of the more common hazards to be aware of:
    a. Traffic in the vicinity of field marking activities
    b. Distracted drivers
    c. Members of the public interested in field marking activities
    d. Slips, trips, and falls
    e. Falling objects
    f. Strains and back injuries
    g. Bites (insects, bugs, rodents, etc.)
    h. Weather conditions

2. Cautions

1. Improper sewer field markings may result in damage to the City's assets.

3. Interferences

1. The accuracy of the City's GIS database and Atlas Maps directly impacts the accuracy of the field markings completed by the City.

4. Personnel Qualifications and Responsibilities

1. City Associate Engineer (Utilities)
    a. Responsible for monitoring the implementation of this SOP.
    b. Responsible for ensuring that all City Staff and contractors responsible for completing field markings are trained on this SOP annually.
2. Senior Maintenance Worker
    a. Responsible for the implementation of this SOP.
    b. Responsible for training City Staff responsible for field markings on this SOP.
    c. Responsible for revising this procedure if deficiencies are found or program changes occur.
    d. Required to train on this SOP annually.
3. City Staff and Contractors Responsible for Field Markings
    a. Required to train on this SOP annually.

5. Equipment and Supplies

1. Personal Protective Equipment (PPE):
    a. Safety Glasses
    b. Safety Vest
2. Equipment:
    a. Orange Cones and Delineators
    b. Handheld Traffic Signs
    c. Traffic Beacons
    d. Caution Tape
    e. Signage, such as "Work Ahead" and "Road Closed"
    f. DigAlert Ticket
    g. Green Utility Marking Paint
    h. Green Whiskers or Flags
    i. Measuring Wheel
3. SS-SOP-07: Routine Traffic and Crowd Control
4. Cell Phone

6. Procedure

Field Marking Process

1. Receiving the DigAlert Ticket
    a. DigAlert tickets are received at the Community Services Department Office by City Associate Engineer (Utilities).
        i. DigAlert Tickets are auto-forwarded to the Senior Maintenance Worker.
            1. The City has two days to complete the request.
2. Prior to Completing Field Marking

a. Field Maintenance staff must check the City's sewer atlas for the specific locations of the sewer assets, which need to be marked, prior to completing the field marking.

3. Sewer Field Marking
    a. General Practices
        i. White markings are used for excavation delineation.
            1. Areas requiring field marking will be outlined in white paint and labeled "USA".
        ii. Substructure or asset markings are marked in a specific color.
            1. Sewer is green.
            2. Appropriate color codes are provided below in "Field Marking Colors and Abbreviations" on pg. 8-9, per the DigAlert.
        iii. Substructure or asset markings are marked with common abbreviations.
            1. Sewer is S.
            2. Common abbreviations are provided below in "Field Marking Colors and Abbreviations" on pg. 8-9.
            3. Guide for Abbreviation Use
                a. "HOLLISTER" is placed at the top or at the left of the abbreviations.
                b. Place abbreviations in the following order: City Identifier/Facility Identifier/Underground Construction Descriptions/Infrastructure Material.
                    i. Ex.: HOLLISTER/S/PVC
                    ii. The use of the abbreviation /S is not necessary, because the green marking would indicate that the facility was a sewer line, but its use is optional.
                    iii. To leave out one or more of the abbreviation types you would continue to follow the order of the abbreviations above leaving out the slash and abbreviation that does not apply.
                        1. Ex.: HOLLISTER/PVC
        iv. Changes in Direction and Lateral Connections
            1. Clearly indicate at the point where the change in direction or connection occurs with an arrow indicating the path of the facility.
                a. An example of how to mark a lateral connection is provided in Figure 5-2.

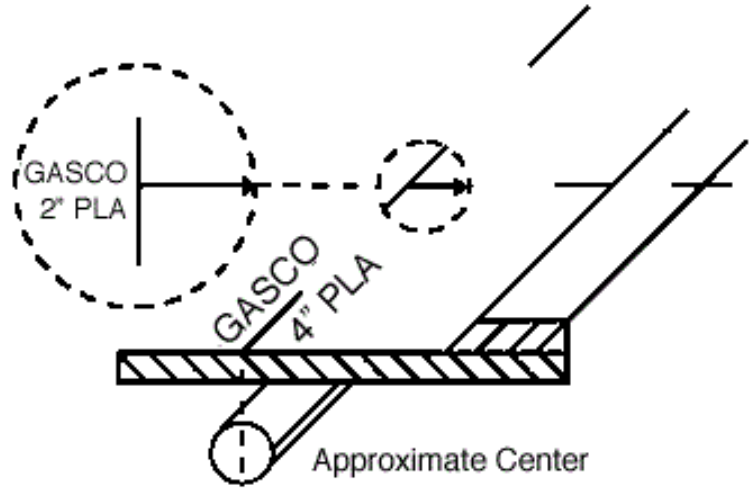


Figure 5-1: Lateral Connection Example

2. A radius is indicated with marks describing the arc as shown in Figure 5-3.

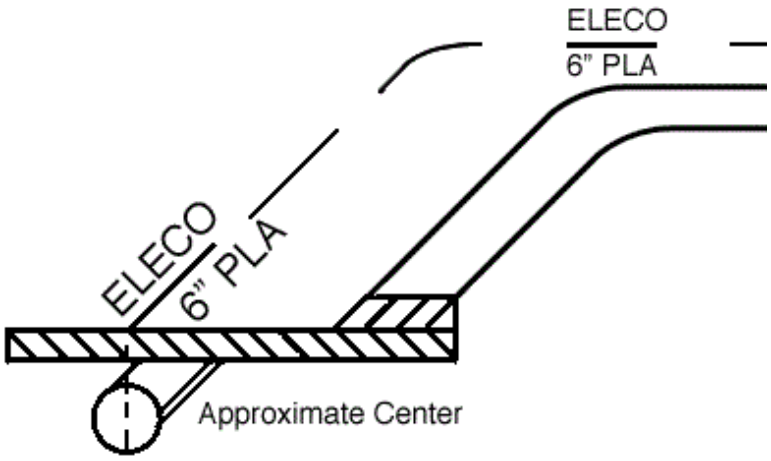


Figure 5-2: Radius Example

3. When providing offset markings with paint or stakes, show the direction of the facility and distance of the facility from the markings as illustrated in Figures 5-4 and 5-5, respectively.

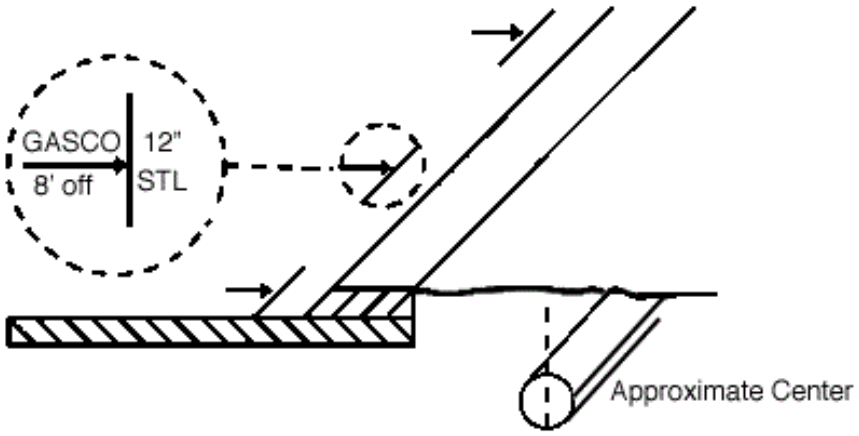


Figure 5-3: Painted Offset Example

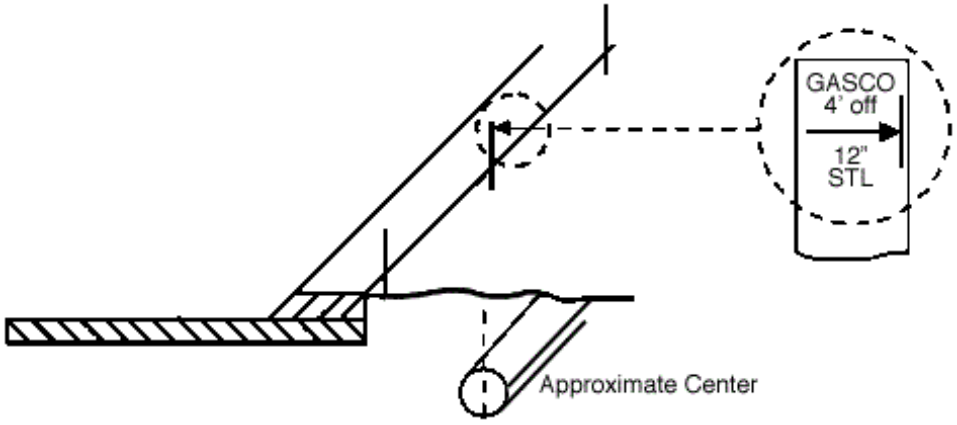


Figure 5-4: Staked Offset Example

v. Termination Points or Dead Ends
    1. Termination points or dead ends are to be indicated as illustrated in Figure 5-6.

Figure 5-5: Marking Termination Points

b. Marking in Paved Areas
    i. Avoid excessive or oversized marking, especially if marking outside the excavation area.
    ii. Conditions permitting, use spray chalk paints, water based paints, or equivalent, less permanent type marking.
    iii. Limit length, height, and interval of marks to those recommended.

1. Letters and numbers should not exceed 3-inches to 6-inches in height.
2. Marks in green are to be approximately 12-inches to 18-inches in length and 1-inch in width and separated by approximately 4 feet to 50 feet in distance.

c. Marking in Non-Paved Areas
   i. When paint is not used, use green stakes, lath, pennants, or chalk lines.
      1. Select marker types that are most compatible to the purpose and marking surface: flags, stakes, or whiskers.
   ii. Adhere to paved area marking suggestions to the extent practical.

d. Single Facility Marking
   i. When a facility can be located or toned separately from other facilities of the same type, it is marked as a single facility.
   ii. Marks are placed over the approximate center of the facility or over the approximate edges with a line connecting the two horizontal lines as shown in Figures 5-7 and 5-8, respectively.

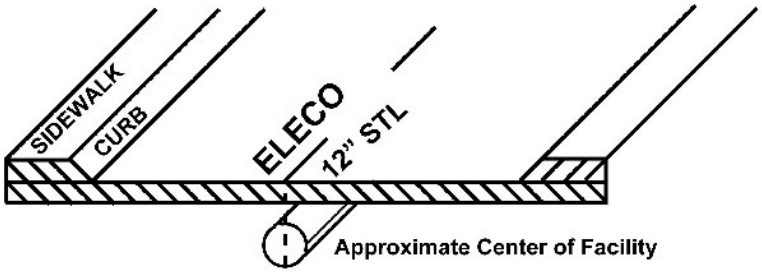


Figure 5-6: Single Facility Marking Over the Approximate Center of the Facility

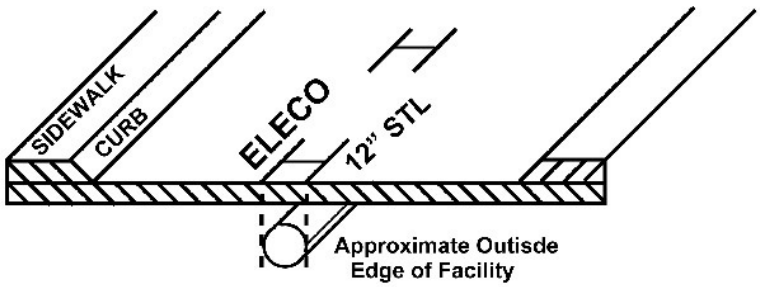


Figure 5-7: Single Facility Marking Over the Approximate Outside Edge of the Facility

e. Multiple Facility Marking
   i. Used to mark multiple facilities of the same type, where separation does not allow for a separate tone for each facility but the number and width of the facilities is known.
   ii. Marks are placed over the approximate center of the facilities and indicate the number and width of the facilities as shown in Figure 5-9.
      1. This example indicates four plastic facilities that are 4-inches in diameter (4/4" PLA).

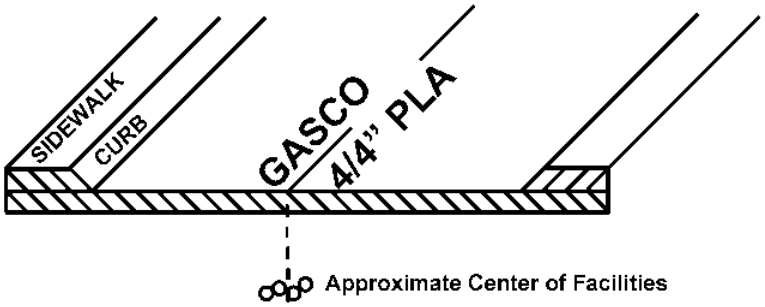


Figure 5-8: Multiple Facility Marking Over the Approximate Center of the Facilities

f. Structures
    i. Structures, such as vaults, inlets, and lift stations, that are physically larger than obvious surface indications are to be marked so as to define the parameters of the structure as shown in Figure 5-10.

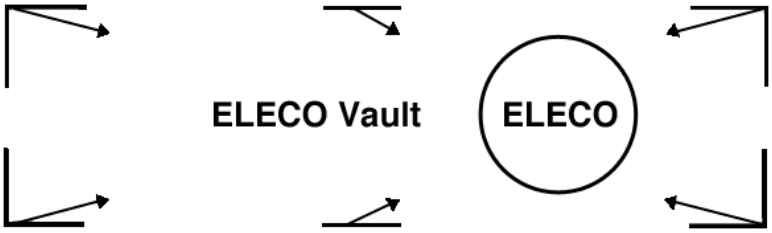


Figure 5-9: Structure Marking Example

g. No Conflict
    i. When there is no conflict with the excavation, complete one or more of the following;
        1. Mark the area "NO HOLLISTER" in green.
        2. Place a clear plastic (translucent) flag that states "No Conflict" in a location that can be observed by the excavator.
            a. If it can be determined through maps or records that the proposed excavation is obviously not in conflict with the City's sewer lines, City Staff may notify the excavator by phone, fax, or email that there is no conflict with the City's sewer assets.
            b. When the excavation is delineated by the use of white markings, place the "No Conflict" markings or flags in or as near as practical to the delineated area.

4. After Completing Field Marking
    a. The Field Worker Staff, who completed the field marking, initials and dates the DigAlert ticket after marking the sewer assets and returns the copy of the ticket to the Associate City City Engineer (Utilities).
    b. The initialed and dated DigAlert ticket is kept on file at the Community Services Department.

Field Marking Colors and Abbreviations

1. APWA Uniform Color Code

White	Proposed Excavation
Red	Electric Power Lines, Cables, Conduit, and Lighting Cables
Orange	Communication, Alarm or Signal Lines, Cables, or Conduit
Purple	Reclaimed Water, Irrigation, or Slurry Lines
Pink	Temporary Survey Markings
Yellow	Gas, Oil, Steam Petroleum, or Gaseous Materials
Blue	Potable Water
Green	Sewer or Drain Lines

2. Facility Identifier

CH	Chemical
E	Electric
FO	Fiber Optic
G	Gas
LPG	Liquefied Petroleum Gas
PP	Petroleum Products
RR	Railroad Signal
S	Sewer
SD	Storm Drain
SS	Storm Sewer
SL	Street Lighting
STM	Steam
SP	Slurry System
TEL	Telephone
TS	Traffic Signal
TV	Television
W	Water
W	Reclaimed Water “Purple”

3. Underground Construction Descriptions

C	Conduit
CDR	Corridor
D	Distribution Facility
DB	Direct Buried
DE	Dead End
JT	Joint Trench
HP	High Pressure
HH	Handhole
MH	Manhole
PB	Pullbox
R	Radius
STR	Structure (i.e., Vaults, junction boxes, inlets, lift stations)

T	Transmission Facility

4. Infrastructure Material

ABS	Acrylonitrile – Butadiene – Styrene
CI	Cast Iron
CML	Cement Mortar Lined
CMP	Corrugated Metal Pipe
CWD	Creosote Wood Duct
MTD	Multiple Tile Duct
RCB	Reinforced Concrete Box
RF	Reinforced Fiberglass
STL	Steel
ACP	Asbestos Cement Pipe
CMC	Cement Mortar Coated
CPP	Corrugated Plastic Pipe
CU	Copper
HDPE	High Density Polyethylene
PLA	Plastic (conduit or pipe)
RCP	Reinforced Concrete Pipe
SCCP	Steel Cylinder Concrete Pipe
VCP	Vitrified Clay Pipe

7. Data and Records Management

1. Copies of completed tickets are maintained in the DigAlert binder at Community Services Department.
2. All required records shall be maintained for a minimum of five (5) years and shall be made available for review by the SWRCB and RWQCB during an onsite inspection or through an information request.
3. Records documenting compliance with all provisions of the WDR and MRP including any required records generated by contractors performing work on the sanitary sewer system.

8. Quality Control and Quality Assurance

1. The Senior Maintenance Worker reviews all DigAlert audits verses tickets received daily.

9. References

1. SS-SOP-07: Routine Traffic and Crowd Control
2. DigAlert website: www.digalert.org
3. APWA Uniform Color Code

10. Attachments

1. This section is not applicable to this SOP.