Sanitary Sewer Management Plan

Public Works Department

City of Dinuba

August 24, 2021

→ The Power of Commitment

Contents

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List of Acronyms

BMP	Best Management Practice
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
DMC	Dinuba Municipal Code
FD	Dinuba Fire Department
FOG	Fats, Oils, and Grease
I/I	Infiltration and Inflow
LRO	Legally Responsible Official
DMC	Dinuba Municipal Code
MGD	Million Gallons per Day
MRP	Municipal Regional Permit
NPDES	National Pollutant Discharge Elimination System
PD	Dinuba Police Department
PM	Preventative Maintenance
PWD	Dinuba Public Works Department
RWQCB	Regional Water Quality Control Board
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SECAP	System Evaluation and Capacity Assurance Plan
SSLS	Sanitary Sewer Lift or Pump Station
SSS WDRs	Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003
SWRCB	State Water Resources Control Board
WDRs	Waste Discharge Requirements
WWRF/P	Wastewater Reclamation Facility/Plant

Glossary of Terms

Collection System	Generic term for any system of pipes or sewer lines used to convey wastewater to a treatment facility
Enrollee/Agency	A public entity (City of Dinuba) that owns or operates a sanitary sewer system and has submitted a complete and approved application for coverage under the SSS WDRs, also known as Sewer Collection System Agency
Governing Board	Dinuba City Council
iWORQ	Dinuba's software database program used to track activities, locations, and time spent on field work so analysis can be done and plans and improvements made
Lateral/Service Lateral	A segment of pipe that connects a home or building to a sewer main, which may be located beneath a street or easement
	The responsibility for maintaining a lateral can be solely that of the Enrollee or the private property owner; or it can be shared between two or more parties. Local communities dictate lateral responsibility and the basis for a shared arrangement if it applies. See Lower Lateral and Upper Lateral definitions.
Lower Lateral	Portion of a lateral usually from the property line or easement line to the sewer main
	Enrollees may or may not be responsible for maintenance of this portion of the lateral. If not, the lower lateral is owned and maintained by the property it serves.
Miles of Gravity Sewer	Amount of gravity sewer lines/pipes in an Enrollee's sanitary sewer system, expressed in miles
Miles of Pressure Sewer	(Miles of Force Main) Amount of pressurized sewer lines/pipes in an Enrollee's sanitary sewer system, expressed in miles or portions thereof
	SSO Database Online spill reporting system hosted, controlled, and maintained by the State Water Resources Control Board located at: http//ciwqs/waterboards.ca.gov
Upper Lateral	Portion of a lateral usually from the building foundation to the property line or easement line where it connects to the Lower Lateral
	Enrollees may or may not own and maintain this portion of a lateral. Responsibility usually lies with the owner of the property that the lateral serves.

1. Overview

The City of Dinuba (Dinuba or City), located in northwestern Tulare County in the southern San Joaquin Valley, is approximately 15 miles northwest of Visalia, the Tulare County seat, and 30 miles southeast of Fresno. Dinuba was incorporated as a General Law City in 1906 and reorganized as a Charter City on July 7, 1994. Dinuba's economy, largely based on agriculture, also has significant components of retail, services, and food manufacturing and distribution. Dinuba city limits comprise 6.51 square miles of which 3.98 square miles is urbanized. The population of Dinuba was 25,328 in 2019.

Dinuba utilizes a Collection System and Wastewater Reclamation Facility (WWRF) to service its wastewater conveyance and treatment needs. The Collection System contains approximately 71.7 miles of gravity sewer comprised primarily of clay but also polyvinyl chloride (PVC), ranging from 8 to 30 inches (") in diameter. There are no satellite discharges to the City's Collection System. The Collection System is aided by 11 sanitary sewer system lift or pump stations (SSLSs) to deliver wastewater to the WWRF. The WWRF is located on the west end of the City, west of urbanized areas, which, along with the headworks, operates on solar power. The WWRF was designed for a capacity of approximately 3.14 million gallons per day (MGD) and is permitted for such use. The WWRF currently processes wastewater in the range of 1.9 to 2.3 MGD on weekdays and 1.5 to 1.6 MGD on weekends.

1.1 Background

To provide a consistent, statewide regulatory approach to address sanitary system overflows (SSOs), the State Water Resources Control Board (SWRCB) adopted the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (SSS WDRs), on May 2, 2006. All public agencies that own or operate a sanitary sewer system that is comprised of more than one mile of pipes or sewer lines which convey wastewater to a publicly owned treatment facility are required to apply for coverage under the SSS WDRs. The application or Notice of Intent (NOI) for enrollment should have been submitted to the SWRCB by November 2, 2006.

The SSS WDRs requires local public sewer collection system agencies, referred to as Enrollees, to develop a Sewer System Management Plan (SSMP). SSMPs must be self-audited at least every two (2) years and updated every five (5) years from the original adoption date by the Enrollee's governing board. The original SSMP must have been approved by the governing board of the Enrollee at a public meeting and adopted.

The five-year SSMP update must also be approved and certified, as do all significant updates to the SSMP. The SSMP, all references in the document, and the adoption documents by the governing board must be available on the agency website or submitted to the SWRCB upon adoption or recertification. Enrollees do not send their SSMP to the SWRCB for review or approval but must make it publicly available and upload an electronic copy to the Sanitary Sewer Overflow (SSO) Database or provide a link to the Enrollee's website where the SSMP is posted.

The SSO Database, which is accessed through the California Integrated Water Quality System (CIWQS), is used to collect and store an Enrollee's facility and organizational information and details of all SSOs which occur from an Enrollee's sanitary sewer system via SSO reports. The SSO Database is how Enrollees maintain compliance with the Monitoring and Reporting Program, as required by the SSS WDRs. All the information collected in the SSO Database is entered by Enrollees.

1.2 Elements of a Sanitary Sewer Management Plan

The SSS WDRs specifies eleven elements that must be addressed in the SSMP as follows:

1. Goals
2. Organization
3. Legal Authority

4. Operations and Maintenance Program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan (OERP)
7. Fats, Oils, and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan (SECAP)
9. Monitoring, Measurement, and Program Modifications
10. SSMP Program Audits
11. Communications Program

If any Enrollee determines that any elements listed above are not appropriate or applicable to the Enrollee's sewer system, the Enrollee may address the element by providing a rationale within its SSMP to explain why that element does not apply. This decision should be re-evaluated, and the information and rationale reviewed for continuing applicability with each audit or major update of the SSMP.

If an Enrollee modifies, amends, or changes any of the elements because of an audit, changes in its operating philosophy, or new technology, those changes must be specified in the SSMP Change Log.

2. Element 1: Goals

2.1 Requirements

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

2.2 Status

The goals of the City's SSMP are to:

1. Implement the City of Dinuba Sanitary Sewer Master Plan and properly manage, operate, maintain, and expand the Collection System to provide reliable and uninterrupted service to the citizens and businesses of Dinuba.
2. Eliminate or reduce the frequency of SSOs through routine and preventative maintenance (PM) and mitigate the impact of any SSOs that occur using safe, practical, and effective methods.
3. Provide adequate time for staff to conduct operation and PM of the Collection System as well as document their work in the iWORQ database and receive pertinent training to carry out their duties.
4. Establish a FOG Control Program.

3. Element 2: Organization

3.1 Requirements

The SSMP must identify:

a. The name of the responsible or authorized representative or Legally Responsible Official (LRO).
b. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation.

c. The chain or communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the SWRCB, RWQCB, and other agencies such as the County Health Officer, County Environmental Health Agency, and/or State Office of Emergency Services as appropriate.

3.2 Status

3.2.1 Legally Responsible Official

Ismael Hernandez, the Public Works Director for the City of Dinuba, is the Legally Responsible Official, or LRO, for the SSMP.

3.2.2 Responsible Agency Staff

The staff members listed below are responsible for implementing the Dinuba SSMP. The offices of the City Manager and Assistant City Manager are located at City Hall, 405 E. El Monte Way, Dinuba, California 93618. Public Works staff are located at the Public Works Department at 1088 E. Kamm Avenue, Dinuba, California 93618. WWRF staff are located at the Wastewater Facility at 6675 Avenue, Dinuba, California 93618.

Luis Patlan, City Manager
(559) 591-5900, ext. 102, Work
(559) 779-9124, Cell

Plans, organizes, directs, and supervises the administrative activities of the City.

Daniel James, Assistant City Manager
(559) 591-5900, ext. 104, Work
(559) 859-2039, Cell

Assists the City Manager in the planning, organization, direction, and supervision of the administrative activities of the City.

Ismael Hernandez, Public Works Director/Legally Responsible Official (LRO)
(559) 591-5924, ext. 103, Work
(559) 859-4781, Cell

Responsible for the organization and direction of all public works activities of the City.

George Avila, Business Manager
(559) 591-5924, ext. 102, Work
(559) 859-1441, Cell

Works under the guidance and direction of the Public Works Director, assists in the implementation of public works goals.

Jason Watts (Yamabe & Horn, Inc.), Acting City Engineer
(559) 244-3123

Responsible for the organization, direction, and review of all development activities conducted by the City and by independent citizens and contractors. Also responsible for oversight of infrastructure planning and engineering projects within the City.

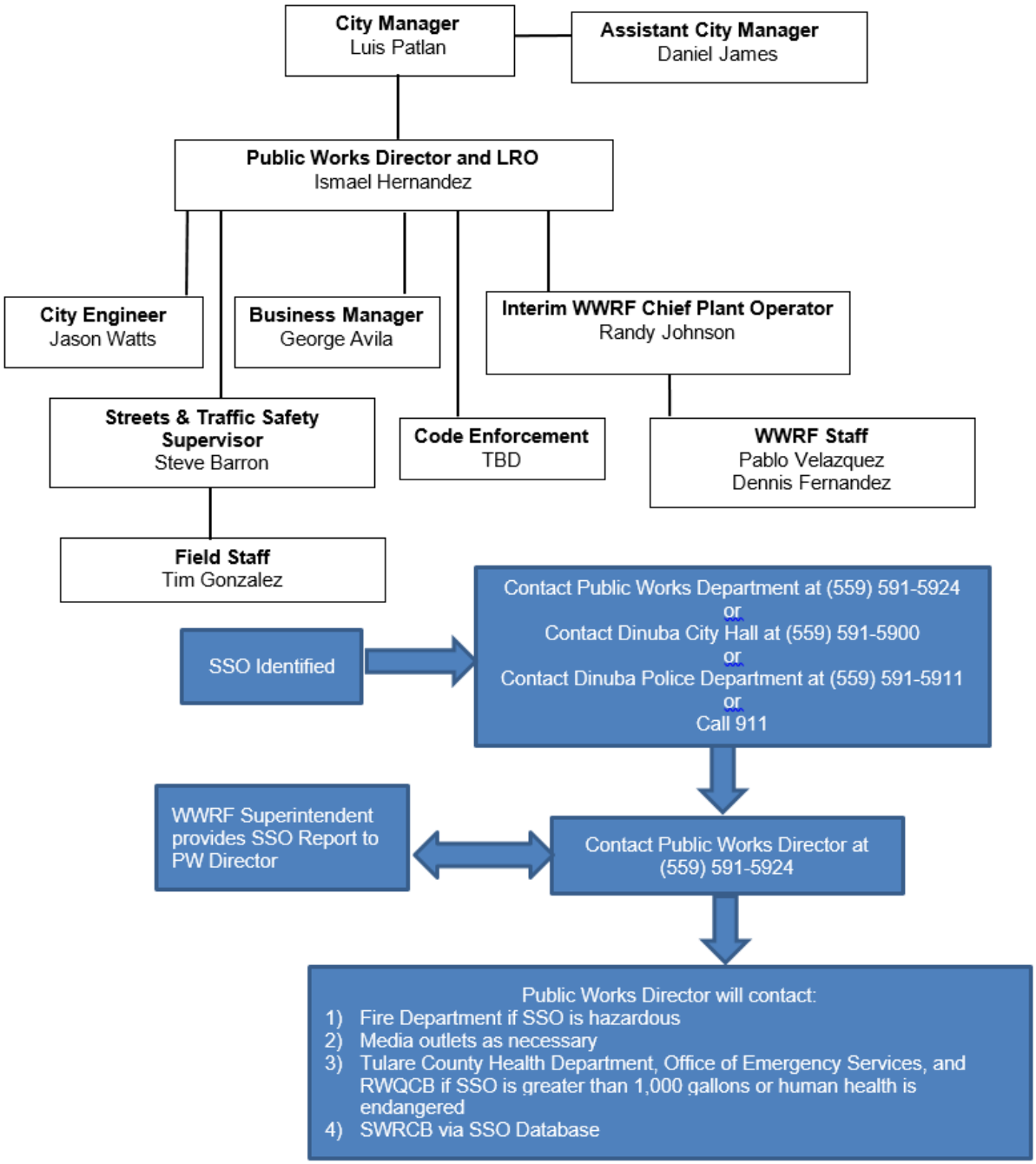
Steve Barron, Streets & Traffic Safety Supervisor
(559) 591-5924, ext. 308
(559) 318-2621 Cell

Plans, organizes, and supervises the operations, maintenance and repair of City water and sewer infrastructure.

Randy Johnson, Interim WWRF Chief Plant Operator
(559) 591-5925, Work
(559) 479-5040, Cell

Plans, organizes, and supervises the operations, maintenance, and repair of the Citys wastewater treatment system.

3.2.3 Organizational Chart and Chain of Communication for Reporting SSOs



4. Element 3: Legal Authority

4.1 Requirements

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

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

4.2 Status

The City possesses the legal authority to carry out the specific features and operations required by SSS WDRs. The relevant ordinances and codes can be found in “Title 13 – Waters and Sewers” within the Dinuba Municipal Code (DMC). The DMC can be reviewed by visiting the offices of the Dinuba Public Works Department (PWD) or by accessing the DMC website at:

https://www.codepublishing.com/CA/Dinuba/

The pertinent sections of the DMC are as follows:

Chapter 13.08 – Sewer Regulations General Provisions

Provides the authority to penalize any person or entity that violates the provisions of Title 13.

Chapter 13.32 – Sewage Construction and Sewer Use

Provides the authority to review and permit any maintenance or construction of sewer infrastructure within the City where existing or proposed wastewater flows will discharge directly or indirectly to City facilities.

Chapter 13.40 – Prohibited Discharges

Provides the authority to prohibit the discharge of stormwater, surface water, groundwater, roof runoff, subsurface drainage, cooling water, swimming pool water, swimming pool backwash water, or unpolluted industrial process water into the City sanitary sewers.

Chapter 13.44 – Interceptors

Provides the authority to require the installation of grease, oil, and sand interceptors for the handling of liquid wastes containing grease in excessive amounts, of any flammable wastes, sand, or other harmful ingredients within its boundaries.

Chapter 13.48 – Rules and Regulations Governing the Disposal and Dumping of Sewage and Liquid

Provides the authority to regulate the disposal and dumping of sewage and liquid waste within the City.

Chapter 13.52 – Powers and Authority of Inspectors

Provides the authority for licensed and authorized inspectors (such as building inspectors and code enforcement officers) to enter all private properties for the purpose of inspection, observation, sampling, measurements, and testing in accordance with the provisions of this division.

Chapter 13.64 – Enforcement

Provides the authority to enforce the provisions of Title 13 through onsite inspections and termination of service for cause. The section also provides a method for property owners to appeal said enforcement.

5. Element 4: Operation and Maintenance Program

5.1 Requirements

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

a. Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities.

b. Describe routine preventive operation and maintenance activities by staff and contractors; including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.

c. Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan.

d. Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained.

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

5.2 Status

5.2.1 Mapping

Maps of the City's historical and proposed sanitary sewer Collection System and Storm Drain System are presented in **Appendix A**. The maps show the location and size of system pipes. Manhole, pump station, and hotspot locations are planned to be shown on future hard copy maps and/or maps on the Internet. Hotspots are locations that require frequent maintenance.

Staff can use the Mobile GIS Explorer Application to view the locations of sewer lines and some pump stations on their smart phones. The PWD is in the process of updating and populating the geographical information system to include more details about the Collection and Storm Drain Systems.

The City's Water System, showing pipes, fire hydrants, and valves, can be accessed at the following link:

https://dinuba.maps.arcgis.com/home/index.html

5.2.2 Preventive Operation and Maintenance

Field staff conduct weekly inspections generally on Thursday of all 11 sanitary sewer lift stations (SSLSs), also known as pump stations, and carry out maintenance and repair work on Friday of system pipes, SSLSs, and hotspots. Maintenance, pump station run time, and repair work are to be documented in the SSLS Maintenance Report and additional reporting forms that are entered daily in iWORQ. iWORQ is a software program and database for community development and public works departments used to track activities, locations, and time spent on field work so analysis can be done and plans and improvements made.

Each SSLS has an electric control panel located nearby. The control panel, whether old or new style, has a light and sound system designed to activate and alert neighbors of the need for attention. Neighbors and passersby are expected to contact the Police Department (PD) or the PWD when a SSLS control panel alarm system is activated.

Maintenance activities include cleaning hotspots with hand tools and flushing pipes with one of two Vac-Con vacuum trucks downstream of identified slowed flows to clear blockages.

SSLSs require routine inspection and cleaning, repair or replacement of control panel parts, pumps, and sensors. The SSLSs use either an older or newer model control panel. Newer control panels are almost exclusively serviced by the City's electrical contractor.

Field staff must periodically respond to SSLS malfunctions during off hours. One staff member is assigned standby duty during all non-work hours 365 days per year.

Approximately 1,800 staff hours are devoted to maintenance and repair of the Collection System annually. More accurate hours and information about activities will be available after work orders have been routinely entered into iWORQ for a 12 to 18-month period.

5.2.2.1 Hotspots

The Collection System has 19 hotspot locations, which require weekly maintenance, as listed below.

1. Alleyway between East Saginaw and East Roe
2. Golden / College
3. Ventura / Europon
4. Manhole behind District Office on East El Monte
5. Alley behind Roe and Cedar Lane
6. Adelaide / Alta – Dead end line
7. Second just south of Magnolia
8. Manhole in alley behind L Street between Inyo and Mono
9. Alley at Tulare and Alta between Q Street and P Street
10. Best Buy on Monte Vista
11. Elizabeth / Palm Street
12. Parkway / Wilson
13. Davis / Alta
14. Crawford between Mountain View / Terrace Drive
15. Mariposa, flush behind old Amber Foods
16. Alta El Monte, flush to Franklin
17. El Monte / Nichols
18. Lincoln / Adelaide, west side
19. Tulare from K Street to Europan

5.2.2.2 Pump Stations

The Collection System's 11 pump stations are described below.

1. Pump Station No. 1 at Sequoia / Alta
   No back-up power; plug only.
2. Pump Station No. 2 at Edward Place
   No back-up power.
3. Pump Station No. 3 at Randle
   No back-up power.
4. Pump Station No. 4 at McDonalds (1725 E. El Monte Way)
   No back-up power.
5. Pump Station No. 5 at Newton / Davis

   The pump station located at North Newton and East Davis contains a wet well vault, a bypass overflow vault, and a vault for flow to the WWRF.

   The wet well contains two Flyght lift pumps with variable frequency drives (VFDs), which can be raised to the surface via chains and pulleys to be cleaned and serviced. The old-style control panel at this location has manually accessible components, making it more serviceable by field staff. Though it does not have an LED display and is not SCADA compatible, it is wired to four sensors in the wet well that float on the water surface to (1) stop the pump(s), (2) start the first pump, (3) start the second pump, and (4) trigger the alarm, should the water level rise too high.

   The bypass overflow is an engineered control system, which automatically routes wastewater to the vault that leads to the WWRF if the water level in the wet well rises to its vault's opening.

   The float sensors that work with the old-style control panel here and elsewhere must be periodically cleaned or replaced.
6. Pump Station No. 6 at Gerald / Crawford
   This pump station was resealed in April 2021. Equipped with power plug for back-up generator.
7. Pump Station No. 7 at Kamm and O
   Equipped with power plug for back-up generator.
8. Pump Station No. 8 at Kamm / Alta
   Equipped with power plug for back-up generator.
9. Pump Station No. 9 at Laurel
   Not equipped with power plug for back-up generator.
10. Pump Station No. 10 at Saginaw / Euclid

    The pump station located at West Saginaw and North Euclid contains a wet and a dry well vault and utilizes a newer, SCADA-compatible control panel with an LED display.

    The wet well vault contains two Flyght lift pumps and three pressure transducers that (1) control the function of the pumps, (2) control the alarm, and (3) act as a back-up.
11. Pump Station No. 11 at Nebraska / Euclid
    Equipped with two submersible Flyght pumps.

    Will be equipped with power plug for back-up generator.

5.2.2.3 Industrial Discharger

One industrial discharger, Ruiz Foods, is connected to the sewer system 1.8 miles east of the WWRF at 501 S. Alta Avenue. The food processing plant uses a grease trap, which is emptied by a grease removal service contractor. Ruiz

Foods recently installed a pretreatment facility that includes a Dissolved Air Flotation (DAF) unit. The Ruiz Foods sewer connection is monitored for flow daily and sampled twice per week.

5.2.2.4 WWRF Headworks

The SSMP covers the Collection System only up to the WWRF headworks. This section includes a brief description of the headworks for reference only.

The Collection System delivers all sewer wastewater to the headworks of the WWRF. After passing through a flow meter at the headworks, wastewater is diverted to one of two bar flex rake screens, which separate out solids. One bar flex rake screen is employed at a time while the other is cleaned and serviced. Screened wastewater falls into the wet well while solids are diverted to the screw conveyor, which sends them to the washer compactor before they are discharged into a waste bin.

The headworks uses two alternating submersible 45-horsepower (hp) Flyght pumps with VFDs. An electric 75-hp pump is also available should the 45-hp pumps fail.

The headworks, which has sensors for hydrogen sulfide and carbon monoxide monitoring at the pump level below ground, runs on a SCADA system that is monitored by ADT Security Services. In the event of a gas or any other alarm, ADT Security contacts the WWRF so staff can mobilize to the headworks to investigate and troubleshoot the issue.

The headworks capacity is approximately four hours such that if it is not operating for that period, wastewater must either be diverted as an SSO to a holding pond on the WWTF property or it will back up in the Collection System, causing SSOs there.

5.2.3 Rehabilitation and Replacement Plan

The PWD is in the process of conducting Closed Circuit TV (CCTV) inspections of all pipes in the Collection System to prioritize those pipes and sections most in need of rehabilitation and replacement. This process is contingent on funding becoming available.

Based on a video inspection of the 18 inch (”) sanitary sewer (SS) and 27” SS in Sierra Way from Alta Avenue to the headworks, which was performed on January 17 and 18, 2008, the following conclusions were drawn:

1. The interior and the joints of the 27” SS appeared to be in fairly good condition.
2. The 18” SS appears to have some discoloration but appears to be in good condition.

4,776 feet of SS located were inspected by CCTV in November 2018, which identified the following conditions and issues:

1. 100 feet of cracked SS on Alice Avenue was replaced.
2. Cracked SS on El Monte will be repaired in June 2021.

Other sections or parts of the Collection System that have been identified as needing work or where work has recently been completed are as follows:

1. Pump Station No. 1 located at Sequoia Drive and Alta Avenue requires an upgraded trash control mechanism to address operational problems resulting from excessive trash entering the wet well.
2. Resealing at Pump Station No. 6 located at Gerald and Crawford was completed in April 2021.
3. Pump Station No. 11 located at Nebraska and Euclid needs to have a power plug installed for a back-up generator.

5.2.4 Training

The limited PWD field staff training budget is not adequate to provide formal training. However, the PWD has set a goal to provide for training on iWORQ, the Mobile GIS Explorer Application, how to report and respond to SSOs, and

other issues pertinent to their work duties on a regular basis, including initial and periodic training to ensure continued competency.

5.2.5 Equipment and Replacement Part Inventories

The PWD maintains the following equipment and parts for the Collection System:

– Vac-Con vacuum trucks
– Pump station Flyght pumps and portable pumps
– Sewer camera
– Level controllers, floats, valves, and transducers
– Pipes, valves, and fittings

The PWD has an agreement with Rain for Rent to provide Baker Tanks for sewer water storage if the need arises.

The City of Dinuba has an agreement with the neighboring City of Reedley to provide mutual aid in support of the other's SSMP.

PWD's current Critical Parts List is included in **Appendix B**.

6. Element 5: Design and Performance Provisions

6.1 Requirements

The SSMP must identify:

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

6.2 Status

The City's sanitary sewer system design and construction standards are in the first section of the Public Improvement Standards document located at the following link on the City's website:

http://www.dinuba.org/images/docs/forms/dinuba_public_improvement_standards.pdf

The document includes standards for the construction of manholes, laterals, and other sewer infrastructure. The PWD is in the process of updating the document to include standards for construction of pump stations, which can be found at the PWD office at 1088 E. Kamm Avenue, Dinuba, CA 93618.

Inspections are conducted by staff on a regular basis during construction of new sanitary sewer facilities. Inspectors ensure all construction meets the City's and State of California's standards. Compliance with standards is enforced through the testing of new facilities. A new or rehabilitated structure must undergo a sewer line acceptance test, which gauges air leakages within a given time period. Any structure must pass sewer line acceptance tests before it is considered complete.

7. Element 6: Overflow Emergency Response Plan

7.1 Requirements

Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

a. Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner.

b. A program to ensure an appropriate response to all overflows.

c. Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g., health agencies, Water Boards, water suppliers) of all SSOs that potentially affect public health or reach waters of the State in accordance with the Municipal Regional Permit (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDR or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification.

d. Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained.

e. Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities.

f. A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States (U.S.) and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

7.2 Status

7.2.1 Notification

In the event of an SSO, citizens may contact the PWD at (559) 591-5924, Monday through Friday, 8 am to 5 pm. Dinuba City Hall may also be contacted during the same hours at (559) 591-5900. For SSOs that occur outside of those hours, the Dinuba PD may be contacted at (559) 591-5911. For a listing of the current Agency chain of communication for reporting SSOs, and the responsibilities of each position, see Element 2: Organization.

7.2.2 Response

The staff responsible for responding to SSOs is listed under Element 2: Organization. The expected response time would be approximately five minutes for PWD staff during business hours. After hours, the Dinuba Fire Department (FD) would also respond within five minutes, with PWD staff assembling within approximately 20 minutes. Callout procedures would be initiated upon arrival at the scene and a determination made as to the severity of the spill and the number of staff needed to mobilize to address it.

7.2.3 Reporting

In the event of an SSO, the PWD Streets and Traffic Safety Supervisor is responsible for submitting an overflow report to the PWD Director. If the SSO contains hazardous materials, the report must also be submitted to the FD. Said report must be submitted within 24 hours in situations where SSOs are more than 1,000 gallons, or where they may imminently and substantially endanger human health. In such cases, the report must also be submitted to Tulare

County Environmental Health, the State Office of Emergency Services, and the RWQCB. All SSOs must be reported to the SSO Database.

A sample Field Report and Spill Volume Estimation Worksheet is included in **Appendix C**.

The PWD Director will be responsible for disseminating information to the various media outlets, including local newspapers (Dinuba Sentinel, Visalia Times-Delta) and TV stations (KSEE 24, KMPH 26, KFSN 30, KGPE 47, etc.). Residents will be informed through signage at SSO sites and public notices.

7.2.4 Impact Mitigation

If an SSO is reported to the PD, the Police dispatcher will notify the PWD Director. If an SSO is reported directly to the PWD, or if a report arrives through the PD/City Hall, the PWD Director will notify the Streets and Traffic Safety Supervisor and the WWRF Superintendent. The Streets and Traffic Safety Supervisor will then inform and dispatch field staff to the SSO.

Once staff is on site, they will assess the situation, first determining whether the problem is on private or public property and whether there are special conditions that must be addressed (i.e., traffic control, medical response, etc.). Staff will then locate and identify the SSO source. Potential sources include, but are not limited to, pump station failures, sewer blockages, pipe and manhole failures, and third-party interference. If necessary, additional staff will be called in for support. Staff will use all methods applicable to contain the SSO, including blocking storm drain catch basins, turning off pump stations, and flushing blockages. Clean up will commence after the SSO is contained.

Note: There are no waters of the U.S. within reach of the City's Collection System.

8. Element 7: Fats, Oils, and Grease Control Program

8.1 Requirements

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

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

g. Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in f) above.

8.2 Status

The City of Dinuba has not experienced an SSO in its Collection System for over 10 years, and FOG has not been identified as a major factor during routine operations and PM. However, the PWD has established a goal to develop a FOG program as an additional means to prevent SSOs.

9. Element 8: System Evaluation and Capacity Assurance Plan (SECAP)

9.1 Requirements

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

a. Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to a potential for an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape the system if applicable) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacities) and the major sources that contribute to the peak flows associated with overflow events.

b. Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria.

c. Capacity Enhancement Measures: The steps needed to establish a short- and long- term Capital Investment Plan (CIP) to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

d. Schedule: The Enrollee shall develop a schedule of completion dates for all portions of the CIP developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in SSS WDR Section D.14.

9.2 Status

The City currently performs approximately 1,000 hours per year flushing sewer lines. Most backup problems are caused by grease accumulation in residential laterals and sewer mains. Since sewer laterals are owned and maintained by individual homeowners from their structures to their connection to the City's mains, the City cannot enforce maintenance of these laterals. Therefore, the above-described sanitary sewer maintenance effort is expected to continue.

9.2.1 System Modeling

The existing Collection System trunk pipe network was evaluated for velocity of flow and capacity using a computer model. See **Appendix D** for a graphical representation of the model results.

The velocity of flow was less than 2 feet per second (ft /sec) for most pipes. This may be due to their relatively flat slopes of construction.

The model showed during peak flow conditions, the 12” SS in North Way, a portion of the 12” SS in Euclid Avenue south of North Way, the 10” SS in Tulare Avenue, and the 27” SS in Sierra Way are in an apparent surcharged condition. The hydraulic profile of the model indicated peak flows would remain within the Collection System and not result in an SSO. These model results are supported by observations by field staff.

The inverts of the pipes at “P” Street / Tulare Street and vicinity streets appeared to be lower than the invert elevation of the receiving manhole at Sierra Way. A limited field topographic survey of the sewers in “P” Street, Ventura Street, and Mono Street showed the 12” SS and 15” SS have a positive slope in “P” Street and there is a significant lack of positive slope in the 21” SS in “P” Street from Kern Street up to Alta Avenue (invert at Kern and “P” Street is 317.40 and invert at Alta Avenue and Sierra Way is 320.50).

The lack of positive slope may explain the reason for the surcharged flow conditions observed in the manholes of the 21” SS in “P” Street and the 10” SS in Tulare Street as reported during the flow monitoring efforts. The 10” SS in Tulare Street discharges flow into the 21” SS at the intersection of “P” and Tulare Streets. This periodic surcharged flow observation was confirmed by the model output which showed the flows in the 21” SS in “P” Street between Kern Street and Alta Avenue and the 10” SS in Tulare Street at times exceeding apparent capacities and with velocities less than 2 ft/sec.

As a final check on input of flows, the model estimated a peak flow of 5.7 MGD at the final manhole located in Sierra Way located just prior to the discharge at the WWRF headworks. This flow is about 5% greater than the 5.4 MGD peak flow at this location estimated by ECO: LOGIC Engineering during their 2007 WWRF Preliminary Design Study.

9.2.2 Capacity Enhancement Measure Recommendations

In general, SSLSs are being maintained to achieve an average 20-year service life. Pump stations require considerable budget to provide the required maintenance and service life. There are three expenditure categories associated with operating and maintaining SSLSs: energy consumption, routine checks and services by field staff, and rehabilitation. Energy consumption represents a small portion of the operation and maintenance budget. Routine checks and services are an ongoing expenditure. Rehabilitation needs to be performed every 15 to 20 years at a current cost varying from $40,000 to $90,000 per SSLS.

Pump Station No. 6 at Gerald / Crawford has been resealed. However, it is recommended a pH control system be installed up-gradient of the pump station at the Pressed Juicery facility.

Frequent flushing is recommended to alleviate the surcharge flow condition in the “P” Street sewers. Generally, the sewer in “P” Street has a flat slope that contributes to low flow velocities, which are less than the 2 ft/sec recommended design criteria. The low velocity contributes to a sedimentation build-up condition in the sewers and requires frequent flushing. The required maintenance is currently being carried out by field staff, and it is recommended frequent flushing be continued. Alternatively, the City may elect to remove the existing 21” SS in “P” Street up to Ventura Street, and the 12” SS / 15” SS located between Ventura Street to Greene Street and replace it with a new sewer at a positive slope for approximately a quarter mile. This would also involve replacing all the laterals and smaller size mains that tie into the existing mains. Additionally, “P” Street has an existing 12” SS and a 15” SS parallel to the 21” SS and likely other utilities that would make construction of the new sanitary sewer difficult and expensive. As a second alternative, the City could construct a pump station at the intersection of Kern and “P” Streets and a force main from this low point to a receiving manhole in Sierra Way.

When funding is available, the City plans to replace the existing 18” SS and 27” SS located in West Sierra Way with a single large trunk sewer because of limited capacity of the 27” SS, life cycle concerns, and for consolidation of facilities. The computer modeling replaces the existing 18” SS and 27” SS with a single 36” SS. A 30-ft corridor has been planned along the south side of West Sierra Way to accommodate this future sewer.

Recommendations for the 12” SS om Euclid Avenue, which is in surcharged condition, and the 10” SS in Tulare Street, which is currently surcharged during peak flow periods include the following:

1. Since the velocity of flow is less than 2 ft/sec, there is a high possibility of sedimentation build-up within the sewer. This requires frequent flushing, which is currently being carried out by field staff. Frequent flushing will be continued.
2. Trenchless technology: This includes lining an existing sewer with new, smoother material to lower the roughness coefficient or “pipe bursting” to increase size and flow velocity.
3. Complete replacement or construction of a parallel sewer. This would also involve replacing all the laterals and smaller size mains that tie in to the existing main.

The recommend SECAP upgrades and schedule are presented in **Appendix E**.

10. Element 9: Monitoring, Measurement, and Program Modifications

10.1 Requirements

The Enrollee shall:

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

10.2 Status

The SSMP will be reviewed annually by the PWD Director. Using data compiled by PWD field staff, the PWD Director will review the SSMP to ensure all elements are being implemented and all proposed plans of each element are effective. Data will be provided in the form of daily reports, system evaluations, and other reporting mechanisms compiled throughout the year. The reports will detail all system breakdowns, equipment failures, and SSOs. The PWD Director will judge the effectiveness of SSMP based on the data collected.

In instances where the PWD Director determines a plan of action is not effective, the SSMP will be modified to incorporate any new methods available for stopping SSOs. If data show specific patterns, such as blockages at a specific location, the PWD Director will update the SSMP to include measures to mitigate the effects at that location.

In addition to the annual review, the SSMP will be subject to a comprehensive update every five years, as required by the SWRCB.

11. Element 10: SSMP Program Audits

11.1 Requirements

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

11.2 Status

The City will perform an audit of the SSMP every two years in conjunction with the actions listed in Element 9: Monitoring, Measurements, and Program Modifications. The audit will consist of evaluating compliance with the SSMP as well as the effectiveness of the measures detailed within. Where results of the evaluation indicate deficiencies, corrective measures will be developed, along with a schedule for implementation of said measures. The overall measurement of SSMP effectiveness will be a reduction in the frequency and volume of SSOs since the previous audit period. The results of the audit will be included in an audit report certified by the LRO and kept on file for a minimum of five years. A hardcopy of each Audit Report will be printed and filed in the office of the PWD Director.

12. Element 11: Communication Program

12.1 Requirements

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

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

12.2 Status

The PWD reports on the performance of the City's Collection System to the Council at an annually scheduled meeting. Performance information is included in the record of that meeting, and reports prepared as a result of Elements 9 and 10 are provided in Council staff reports. Public comments are welcomed and encouraged at these meetings.

The PWD also conveys information on SSMP Elements, such as proper disposal of FOG, via City website links and utility bill mailing inserts. Information is provided to land developers and commercial businesses through meetings and/or mailings.

Modifications, amendments, and changes to any of the elements of the SSMP that result from an audit, changes in the City's or PWD's operating philosophy, or from new technology, are specified in the SSMP Change Log in **Appendix F**.

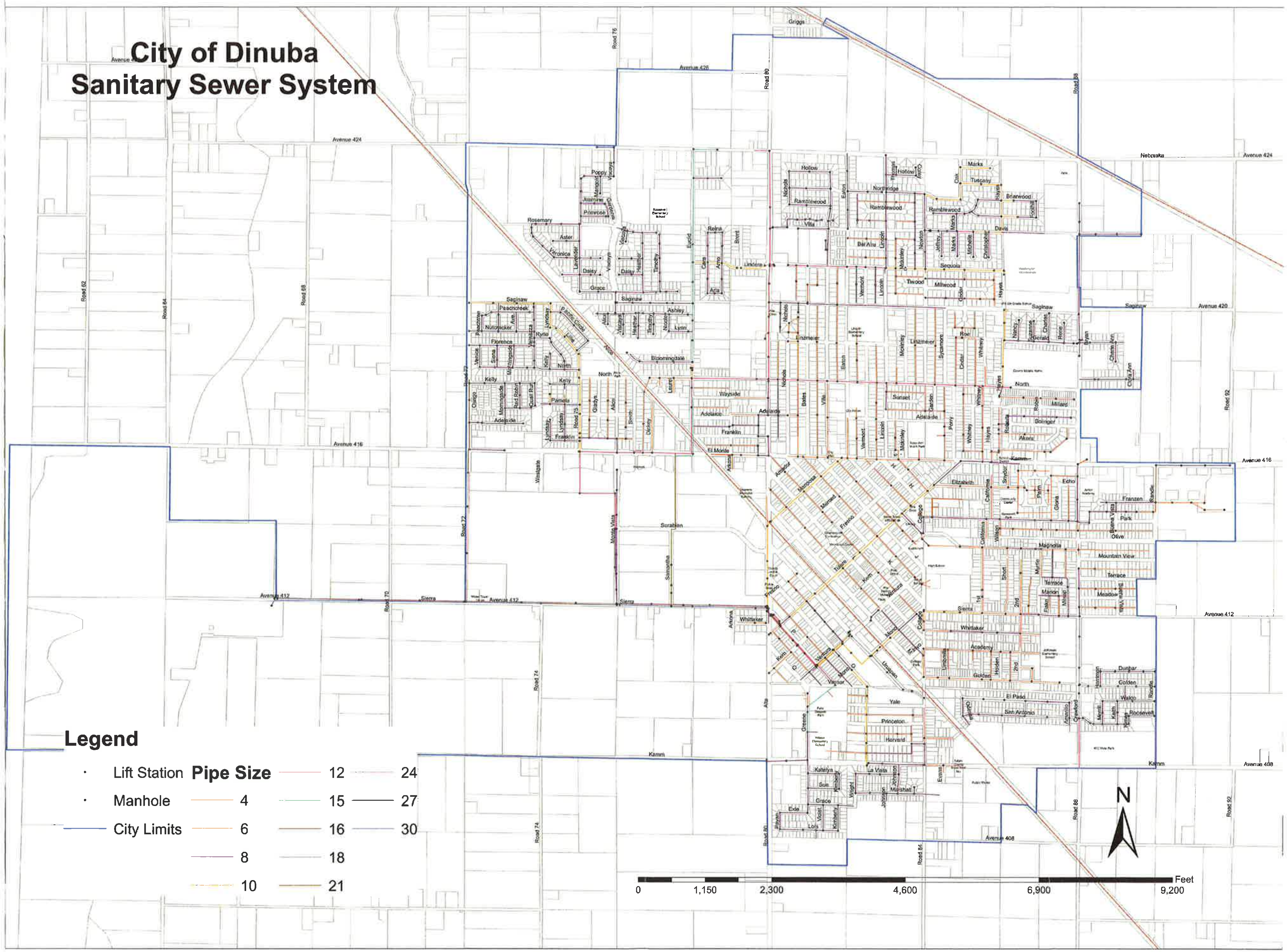
There are no connections to systems tributary or satellite to the City's Collection System.

Appendices

Appendix A

City of Dinuba Sanitary Sewer and Storm Drain System Maps

City of Dinuba Sanitary Sewer System



CITY OF DINUBA CALIFORNIA

SANITARY SEWER MASTER PLAN

2009

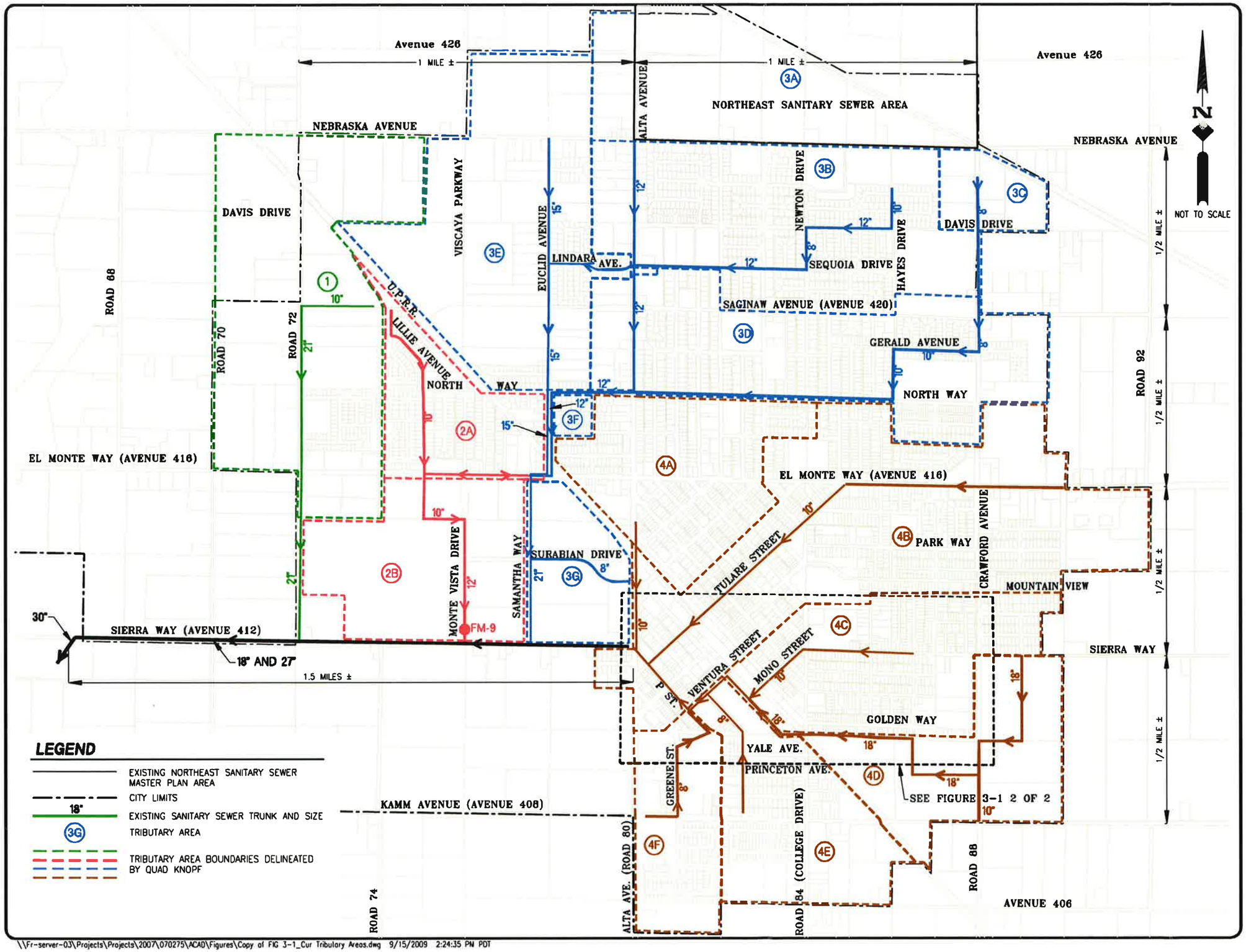


FIGURE 3-1
CURRENT
TRIBUTARY AREAS
AND EXISTING SEWERS

Quad Knopf

\\Fr-server-03\Projects\Projects\2007\070275\ACAD\Figures\Copy of FIG 3-1_Cur Tributary Areas.dwg 9/15/2009 2:24:35 PM PDT

FRESNO COUNTY LINE

PLANNING AREA BOUNDARY

SANITARY SEWER SERVICE BOUNDARY

EXISTING CITY BOUNDARY

ROAD 56 | ROAD 60 | ROAD 62 | ROAD 64 | ROAD 68 | ROAD 70 | ROAD 72 | ROAD 76 | ROAD 80 (ALTA AVENUE) | ROAD 84 (COLLEGE DRIVE) | ROAD 88 (CRAWFORD AVENUE) | ROAD 92 | ROAD 96

AVENUE 430 | AVENUE 428 | AVENUE 426 | NEBRASKA AVENUE | SAGINAW AVENUE | NORTH WAY | EL MONTE WAY (AVENUE 416) | SIERRA WAY (AVENUE 412) | KAMM AVENUE (AVENUE 408) | AVENUE 406 | AVENUE 404 | AVENUE 400

SAGINAW AVENUE (AVENUE 420)

DAVIS DRIVE | ENGLEHART DR | VISCAYA PARKWAY | EUCLID AVENUE | LINDARA AVE. | SEQUOIA DRIVE | NEWTON DRIVE | HAYES DRIVE | GERALD AVENUE | LILLIE AVENUE | U.P.R.R. | MONTE VISTA DRIVE | SAMANTHA WAY | SURABIAN DRIVE | TULARE STREET (10') | VENTURA STREET | MONO STREET | GOLDEN WAY (SYSTEM 2) | YALE AVE. | PRINCETON AVE. | GREENE ST. | PARK WAY | MOUNTAIN VIEW

SYSTEM 1 | SYSTEM 2 | SYSTEM 3 | SYSTEM 4 | SYSTEM 5 | SYSTEM 6 | SYSTEM 7 | SYSTEM 8 | SYSTEM 8 (SYSTEM 7 INTERIM) | SYSTEM 9

RCR PROJECT

FUTURE HEADWORKS

LS

SCALE: 1" = 1,000'

LEGEND

- COUNTY LIMITS
- EXISTING CITY BOUNDARY
- PLANNING AREA BOUNDARY
- 2028 URBAN DEVELOPMENT / SANITARY SEWER SERVICE BOUNDARY
- EXISTING SANITARY SEWER TRUNK
- FUTURE SANITARY SEWER BUILD-OUT
- INTERIM SANITARY SEWER BUILD-OUT
- PROPOSED UPGRADES TO THE EXISTING SANITARY SEWER TRUNK
- EXISTING LIFT STATION
- FUTURE LIFT STATION
- INTERIM LIFT STATION

CITY OF DINUBA
SANITARY SEWER MASTER PLAN
PROPOSED SYSTEM LAYOUT

FIGURE 4-1

PREPARED BY:
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6051 N. Fresno Street
Suite 200
Fresno, CA 93710
TEL: (559) 449-2400
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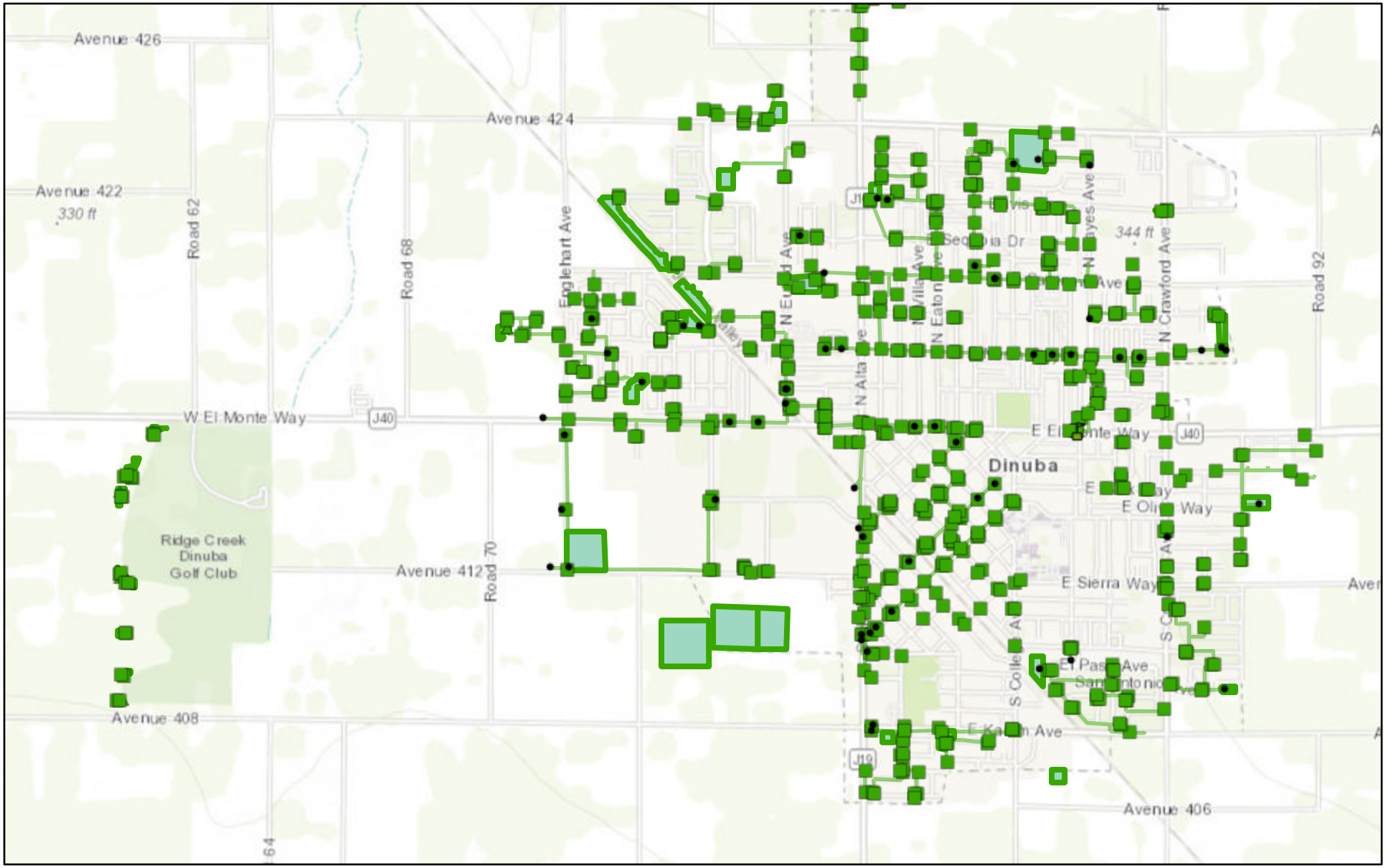
City of Dinuba Storm Drain System



February 16, 2021

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Fallout

Manhole

Basins

Inlet

Gravity Main

Parcels

Fresno County Dept. PWP, Bureau of Land Management, Esri, HERE,

Storm Drain System

Appendix B

SSMP Critical Parts List

City of Dinuba
Sanitary Sewer Management Plan
Critical Parts List
(Updated September 30, 2019)

Part	Size	Quantity	Location
Calder Coupling	8"	13	1088 E. Kamm Ave, Dinuba, CA
Coupling	6"	3	1088 E. Kamm Ave, Dinuba, CA
Flygt Pumps	N/A	3	1088 E. Kamm Ave, Dinuba, CA
Flygt Alarm Floaters	N/A	2	1088 E. Kamm Ave, Dinuba, CA
Manhole Rings	N/A	6	1088 E. Kamm Ave, Dinuba, CA
		12	110 S. College Ave, Dinuba CA
Metal Riser	N/A	2	1088 E. Kamm Ave, Dinuba, CA
		13	110 S. College Ave, Dinuba CA
Sewer Camera	N/A	1	1088 E. Kamm Ave, Dinuba, CA
Sewer Pipe	4"	60	1088 E. Kamm Ave, Dinuba, CA
Sewer Pipe	6"	60	1088 E. Kamm Ave, Dinuba, CA
Sewer Pipe	8"	60	1088 E. Kamm Ave, Dinuba, CA
Various Fittings	4", 6", 8"	70+	1088 E. Kamm Ave, Dinuba, CA

Appendix C

SSO Field Report and Spill Volume Estimation Worksheet

Sample Field Report

REPORTED BY

Call Address:
On Service Request _____ (SR #_____)

Caller Name: _____ Phone: _____ _____

Receipt of Call: Date: _____/_____/_____ Time: _____:_____ ☐ AM ☐ PM Call Received By: _____

Call Dispatch: _____/_____/_____ Time:_____:_____ ☐ AM ☐ PM Assigned To: _____

USD Arrival Time: Date: _____/_____/_____ Time:_____:_____ ☐ AM ☐ PM

SPILL START TIME NOTES

Caller Interview: Where did you see sewage spill from? From: Manhole ☐ Inside Building ☐ C/O ☐

☐ Wet well/Lift station ☐ Other_____

Time Caller noticed spill: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Comments:

_____

_____

Last time Caller observed NO Spill occurring: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Comments:

_____

_____

_____

_____

SSO End Time _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Other Comments regarding spill start time:

SPILL LOCATION

Observed: Spill from: ☐ Manhole ID_____ ☐ Lift Station ID _____

☐ Clean Out Address

Comments:

☐ Building Address

Comments:

Spill Destination: ☐Building ☐ Paved Surface ☐ Storm Sys ☐ Curb/Gutter ☐ Unpaved ☐ Surface

Answer these questions:

#1 – Was there a discharge to surface water or a drainage channel that is tributary to surface water? _____ Yes _____ No

#2 - Was there a discharge to a storm drain pipe that was "NOT" fully captured & returned to the sanitary sewer system? _____ Yes _____No

Water

If you answered no to both questions above, was it ≥ 1,000 gallons? _____ Yes _____ No

If yes, the SSO is a Category 2. If NO, the SSO is a Category 3.

SPILL VOLUME WORKSHEET

The purpose of this worksheet is to capture the data and method(s) used in estimating the volume of an SSO. Since there are many variables and often unknown values involved, this calculation is just an estimate. Additionally, it is useful to use more than one method, if possible, to validate your estimate.

The following methods and tools are the approved methods in the SOP CS-103 *SSO Response*. Check all methods and tools that you used:

- ☐ Eyeball Estimate Method
- ☐ Measured Volume Method
- ☐ Duration and Flow Rate Method (Account for diurnal flow pattern for long duration)
- ☐ USD SSO Flow Rate Estimating Tool
- ☐ Other (explain) i.e.; estimated daily use per capita upstream or meter @ Pump Station.

_____

_____

_____

<u>Eyeball Estimate Method</u>- Imagine a bucket(s) or barrel(s) of water tipped over.

Size of bucket(s) or barrel(s)	How many of this Size?	Multiplier	Total Volume Estimated
1 gal. water jug		X 1	
5 gal. bucket		X 5	
32 gal. trash can		X 32	
55 gal drum		X 55	
Total Volume Estimated Using Eyeball Method			

Measured Volume Method (this may take several calculation as may have to break down the odd shaped spill to rectangles, circles, and polygons) It is important when guessing depth to measure, if possible in several locations and use an average depth. Use the SSO Volume Estimate by Area Work Sheet , if necessary, to sketch the shapes and show your work.

1. Draw a sketch of the spill SSO Volume Estimate by Area Work Sheet, or use a photo copy of USD block book to draw on and attach it.
2. Draw shapes and dimensions used on your sketch
3. Use correct formula for various shapes

Rectangle	L x W x D
Circle	3.14 x R^2 x D
Polygons see reference chart	Show formula used

Duration and Flow Rate Method worksheet:

Start Date and Time	1.
End Date and time	2.
Total time elapsed of SSO event (subtract line 1 from line 2. Show time in minutes)	3.
Average flow rate GPM (account for diurnal pattern)	4.
Total volume estimate using duration and flow rate method (Line 3 x Line 4)	5.

CAUSE OF SPILL

Spill Cause: ☐ Roots ☐ Grease ☐Debris ☐Vandalism ☐ Lift Station Fail ☐ Other _____

☐ Spill cause to be determined by CCTV inspection (Attach TV Report to this form)

Final Cause Determination:

_____

_____

_____

Follow-up or Corrective Action Taken:

_____

_____

_____

_____

_____

SPILL CONTAINMENT

Containment Implemented:_____:_____ ☐ AM ☐ PM Date: _____/__  __

Containment Measures: ☐ Plugged Storm Drain ☐ Washed Down ☐ Vacuum Up Water/Sewage

☐ Other Measures: _____

_____

_____

_____

_____

_____

CLEAN UP

Clean Up Begin: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Clean Up Complete: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Describe Clean Up Operations:

_____

_____

_____

_____Gallons – Estimate Volume of Spill Recovered (do not count wash down water)

OTHER IMPORTANT MILESTONES

Contacted Supervisor: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Requested Additional EE's/Equip:_____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Requested Additional EE's/Equip:_____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Requested Additional EE's/Equip:_____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Departure Time: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

_____ _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

_____ _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

_____ _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

REPORTING

Report to Cal-EMA: Date:_____ ___:___ ☐ AM ☐ PM (Cat.1 Only) **(800) 852-7550** By: _____

→ Control Number provided by Cal-OES: _____

→ Name of Person Contacted: _____ or Left Message: ☐

Report to _____ Date:_____ ____:_____ ☐ AM ☐ PM Phone: **668-4200** By: _____

→ Name of Person Contacted: _____ or Left Message: ☐

Notes: _____

Response Crew: _____, _____, _____

_____, _____, _____

SSO Volume by Area Estimation Work Sheet

Surface: ☐ Asphalt ☐ Concrete ☐ Dirt ☐ Landscape ☐ Inside Building Other _____

(Draw / Sketch outline of Spill 'Footprint' and attach photos)

~~ Breakdown the 'Footprint' into Recognizable Shapes and Determine Dimensions of Each Shape ~~

Area #1_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #2_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #3_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #4_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #5_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

SSO Volume by Area Estimation Work Sheet

Area #6_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #1 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #2 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #3 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #4 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #5 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #6 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Total Volume:

#1 _____, #2 _____, #3 _____, #4 _____, #5 _____, #6 _____ = _____ *cu ft

_____ *cu ft x 7.48 gallons = _____ **gallons Spilled.**

SSO Volume by Area Estimation Work Sheet

CONVERSIONS

** To convert inches into feet: Divide the inches by 12.

Example: 27" / 12 = 2.25'

Or Use Chart A

Example: 1 ¾" = ?

1" (0.08') + ¾" (0.06') = 0.14'

** One Cubic Foot = 7.48 gallons of liquid.

Chart A

Conversion:

Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

GEOMETRY

For the purposes of this work sheet, the unit of measurement will be in feet for formula examples.

Area is two-dimensional - represented in square feet. (Length x Width)

Volume is three-dimensional - represented in cubic feet. (Length x Width x depth) or
(Diameter Squared) D^2 x 0.785 x depth.

A Note about Depth

Wet Stain on a Concrete Surface - For a stain on concrete, use 0.0026'. This number is 1/32" converted to feet. For a stain on asphalt use 0.0013' (1/64"). These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error by SPUD staff. A known amount of water (one gallon) was poured onto both asphalt and concrete surfaces. Once the Area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. 1/32" was the most consistently accurate depth on concrete and 1/64" for asphalt. This process was repeated several times.

Sewage "Ponding" or Contained – Measure actual depth of standing sewage whenever possible. When depth varies, measure several (representative) points, determine the average and use that number in your formula to determine volume.

Area/Volume Formulas

Area is two dimensional and is represented as Square Feet (Sq. Ft.)

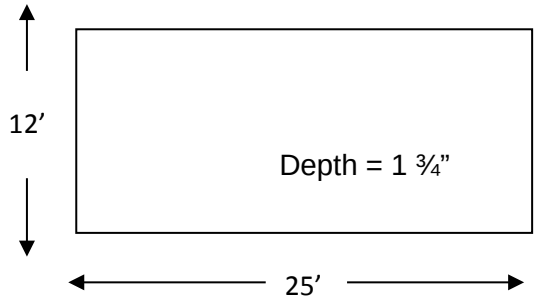
Volume is three dimensional and is represented as Cubic Feet (Cu. Ft.)

One Cubic Foot = 7.48 gallons

SSO Volume by Area Estimation Work Sheet

AREA/VOLUME OF A RECTANGLE OR SQUARE

Formula: **Length x Width x Depth** = Volume in Cubic Feet



Length (25’) x Width (12’) x Depth (0.14’)

25’ x 12’ x 0.14’ = 42 Cubic Feet.

Now the Volume in Cubic Feet is known.

There are 7.48 Gallons in one Cubic Foot

So, 42 Cubic Feet x 7.48 gallons/cubic feet = 314 Gallons

Chart A

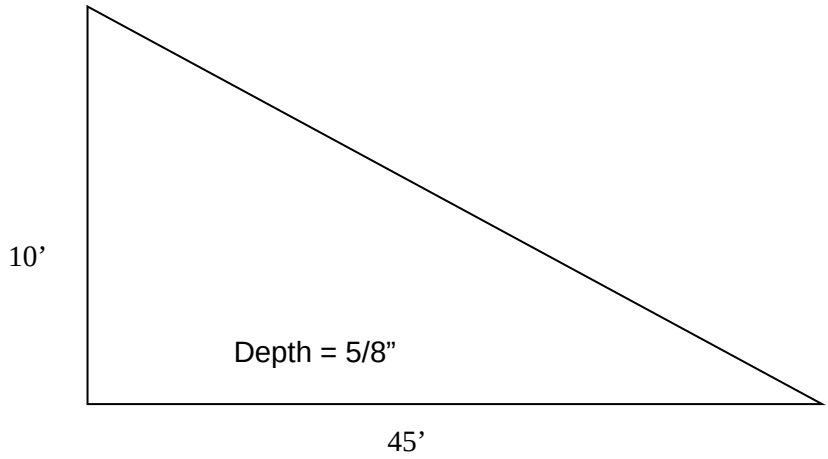
Conversion:

Inches	to	Feet
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’
5”	=	0.42’
6”	=	0.50’
7”	=	0.58’
8”	=	0.67’
9”	=	0.75’

SSO Volume by Area Estimation Work Sheet

AREA/VOLUME OF A RIGHT TRIANGLE

Base x Height x 0.5 x Depth = Volume in Cubic Feet



Base (45’) x Height (10’) x 0.5 x Depth (.05’) x 7.48 gallons/cubic foot = 84 gallons

For Isosceles Triangles (two sides are equal lengths),
Break it down into two Right Triangles and compute area
as you would for the Right Triangle above.

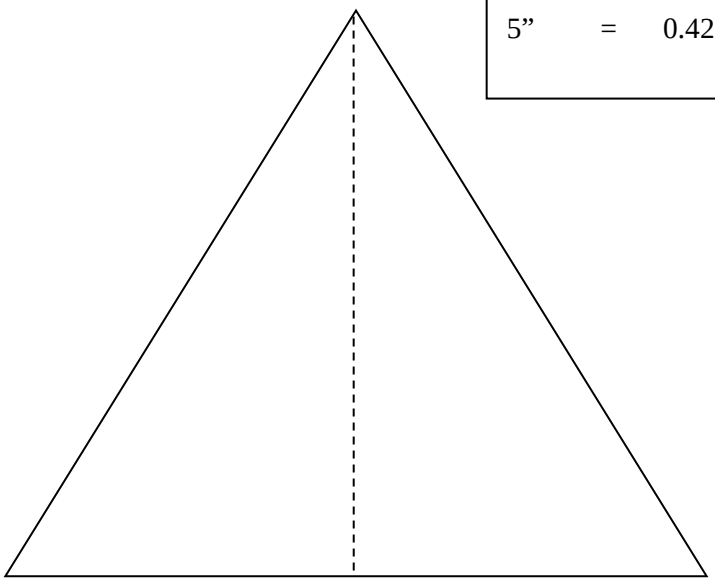


Chart A

Conversion:

Inches	to	Feet
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’
5”	=	0.42’

AREA/VOLUME OF A CIRCLE/CYLINDER

$D^2 \times 0.785 \times d$

Diameter Squared x 0.785 x Depth = Volume in cubic feet.

Diameter = Any straight line segment that passes through the center of a circle.

For our purposes, it is the measurement across the widest part of a circle.

D2 x 0.785 x depth = Volume in cubic feet

Example:

27’ x 27’ x 0.785 x 0.03 = 17.17 cubic feet

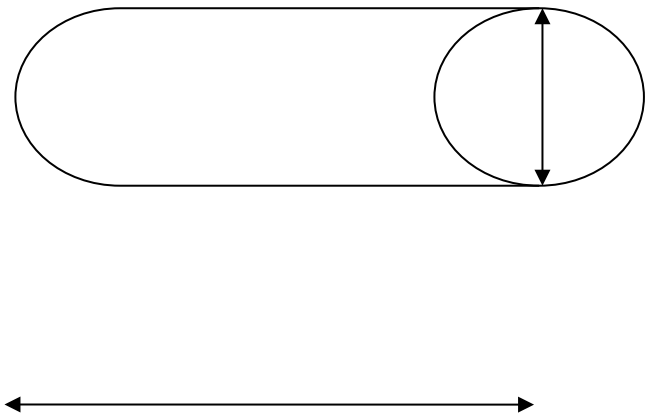
17.17 cubic feet x 7.48 gallons/cubic feet = 128 gallons

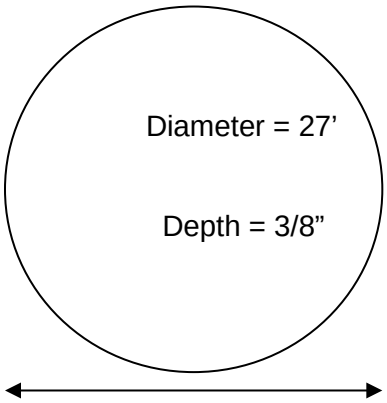
Chart - A

Conversion:

Inches to Feet

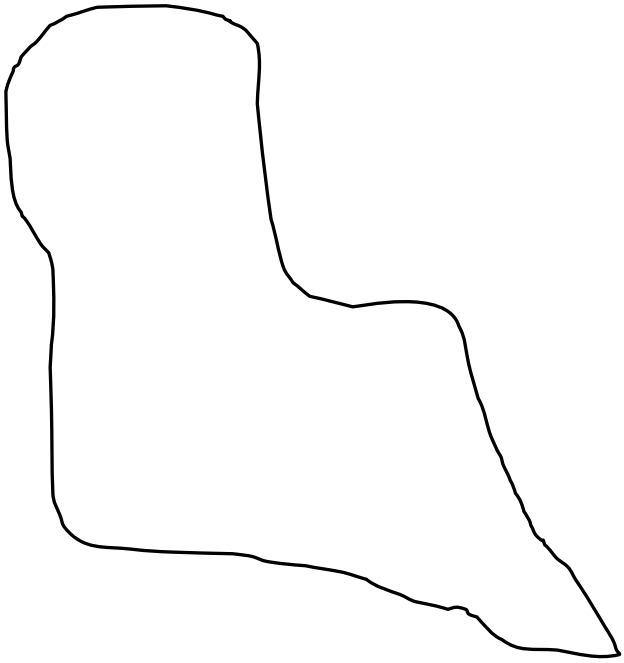
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’





SSO Volume by Area Estimation Work Sheet

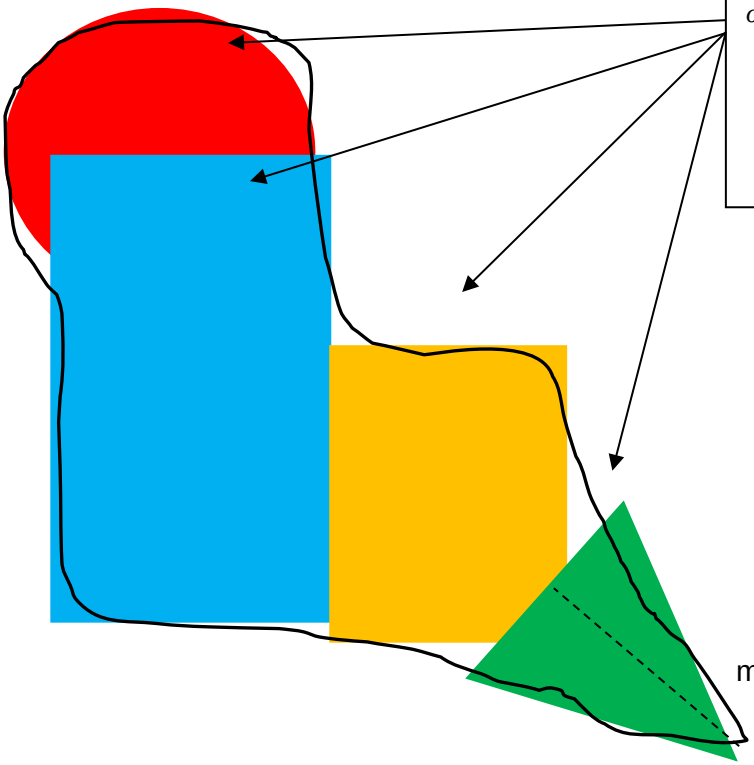
Find the geometric shapes within the shape. If this was the shape of your spill, break it down, as best you can, with the shapes we know.



1. Determine the volumes of each shape.

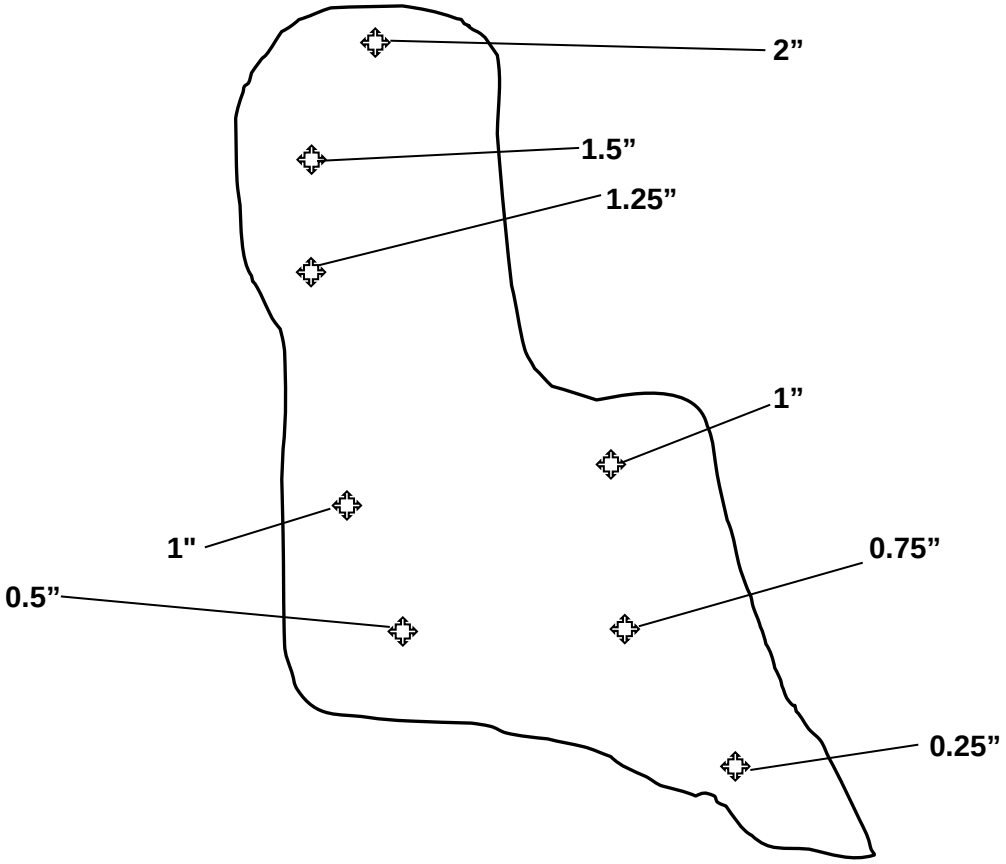
In this example, after the volume of the circle is determined, multiply it by 55% (+/-) so that the overlap area won't be counted twice.

2. Add all the volumes to determine total spill volume.



If the spill depth is of varying depths, take several measurements at different depths and find the average.

SSO Volume by Area Estimation Work Sheet



2” + 1.5” + 1.25” + 1” + 1” + 0.75” + 0.5” + 0.25” = 8.25”

8.25” / 8 measurements = 1.03”

Average Depth = 1.03”

SSO Volume by Area Estimation Work Sheet

Step 1

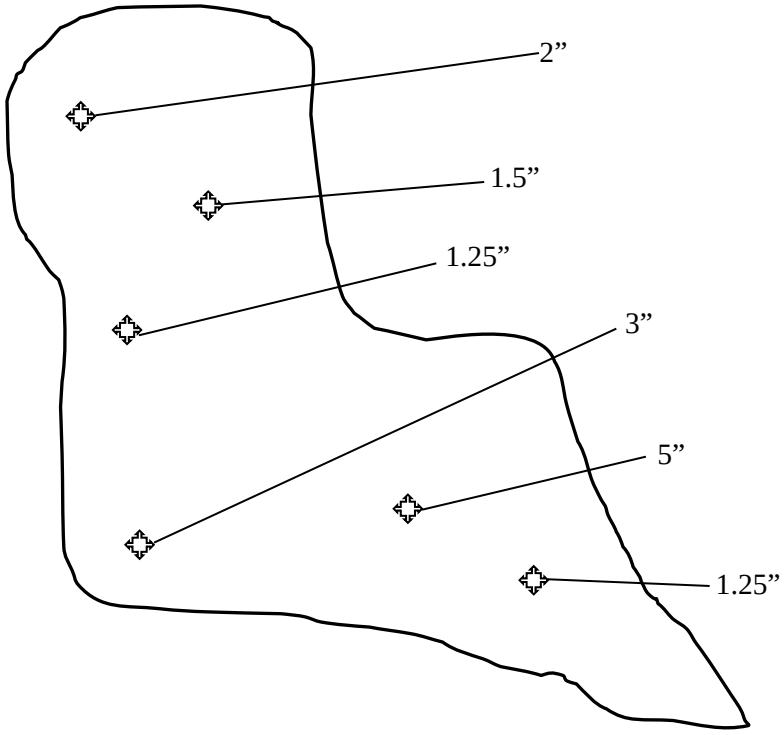
If the spill affects a dry, unimproved area such as a field or dirt parking lot, determine the Area of the wetted ground in the same manner as you would on a hard surface. Using a round-point shovel, dig down into the soil until you find dry soil. Do this in several locations within the wetted area and measure the depth of the wet soil. Average the measurement/thickness of the wet soil and determine the average depth of the wet soil.

Step 2

Take a Test Sample

NOTE: This can be used in a (Dry) dirt or grassy area that is not regularly irrigated like a field or a dirt parking lot.

Wet weather would make this method ineffective.



2” + 1.5” + 1.25” + 3” + 5” + 1.25” = 14.0”

14.0” / 6 measurements = 2.33”

Average Depth = 2.33” (0.194’)

EXAMPLE:

If the Area of the spill was determined to be 128 Sq/Ft and the average depth of the wet soil is 2.33 inches:

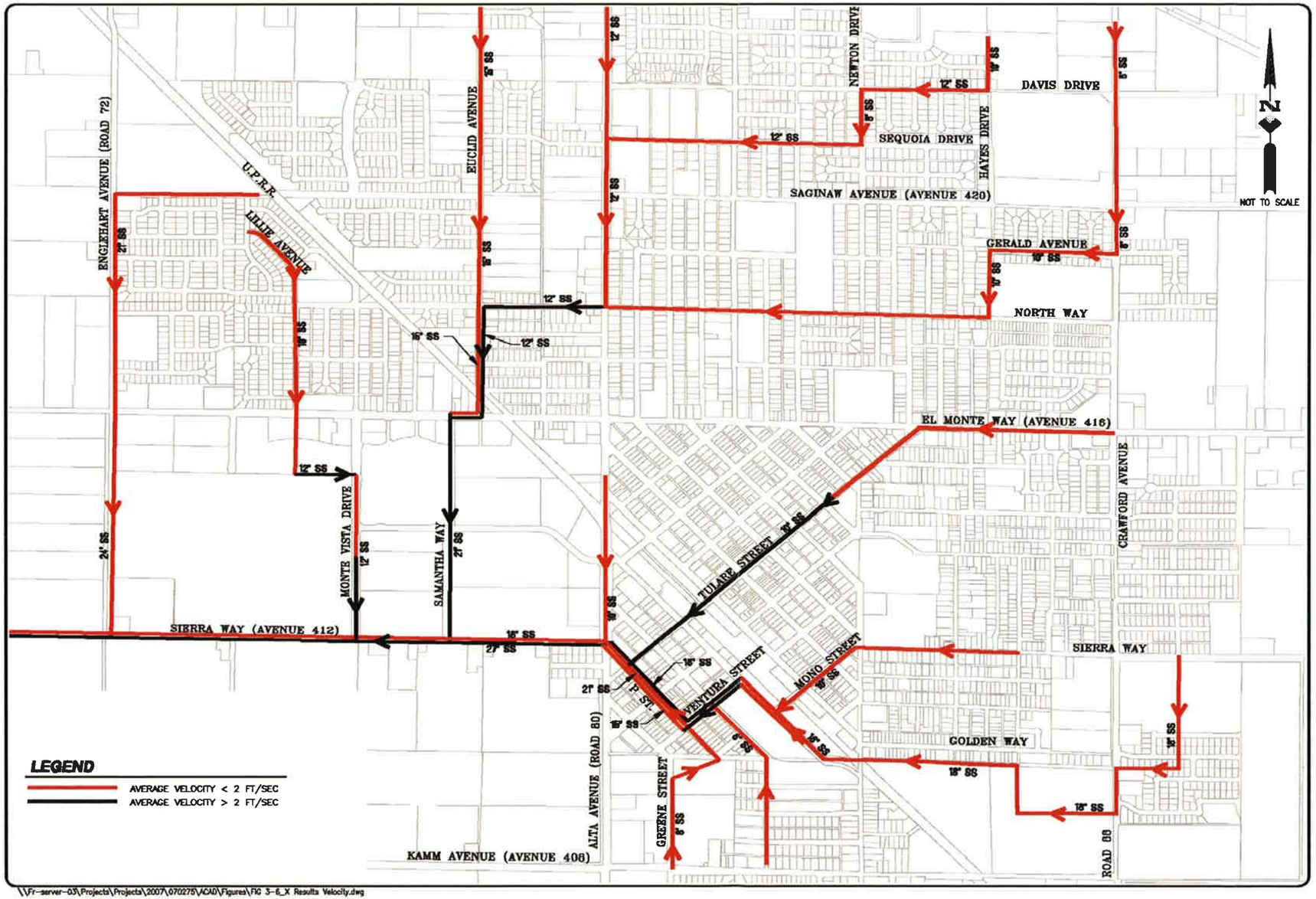
128 Sq/Ft x 0.194’ = 24.83 Cu/Ft

24.83 Cu/Ft x 7.48 Gals/Cu/Ft = 185.74 gallons

185.74 x 18% = 33 Gallons (water in soil)

Appendix D

Velocity and Flow Capacity Computer Model

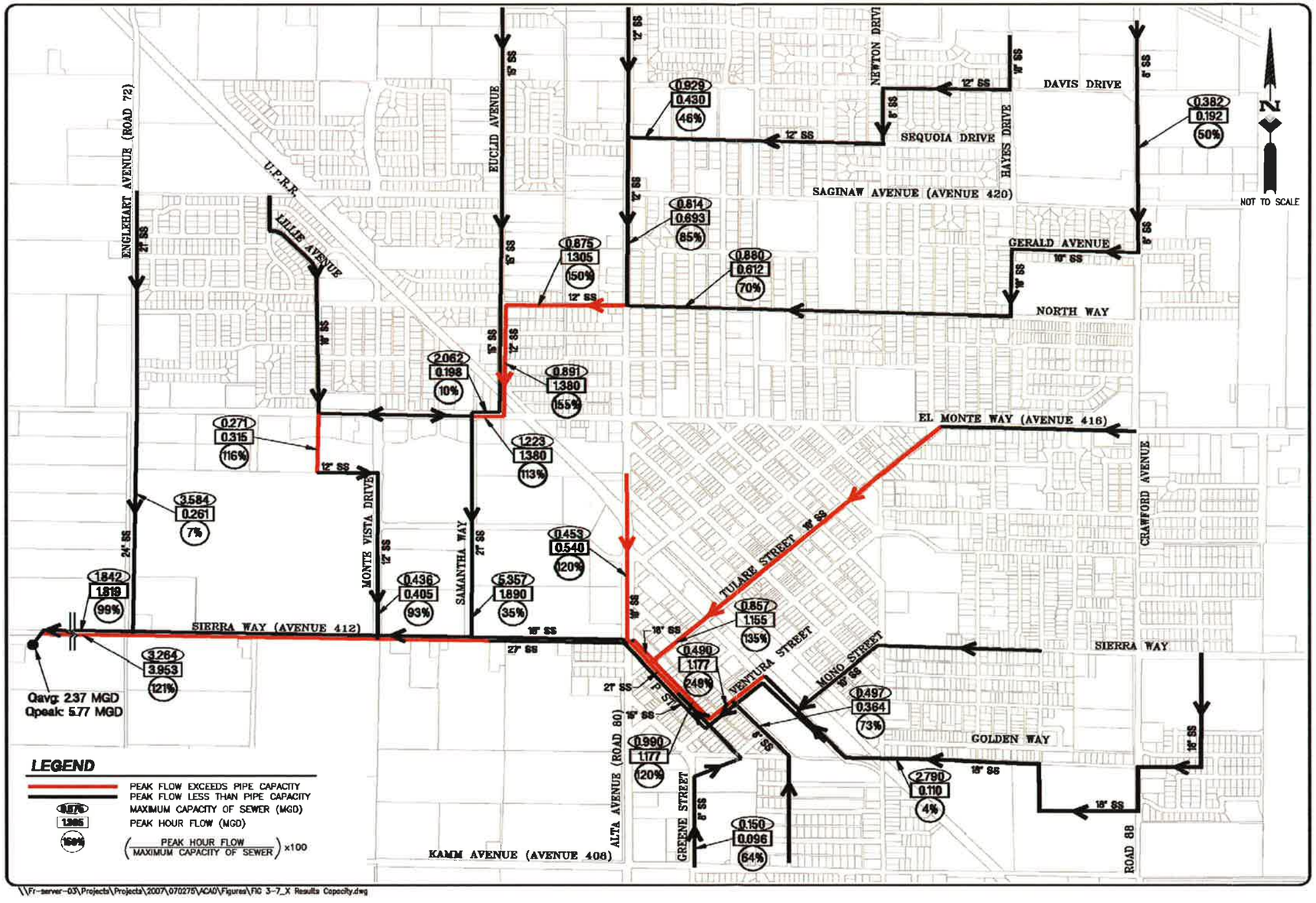


CITY OF
DINUBA
CALIFORNIA

SANITARY SEWER
MASTER PLAN

FIGURE 3-6
EXISTING SYSTEM:
MODEL RESULTS,
VELOCITY ANALYSIS

Quad Knopf



\\Fr-server-03\Projects\Projects\2007\070275\ACAD\Figures\FIG 3-7_X Results Capacity.dwg

CITY OF DINUBA CALIFORNIA

SANITARY SEWER MASTER PLAN

FIGURE 3-7
EXISTING SYSTEM: MODEL RESULTS, CAPACITY ANALYSIS

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Appendix E

System Evaluation and Capacity Assurance Plan for System Upgrades

Appendix E

SSMP Element 8: System Evaluation and Capacity Assurance Plan
System Upgrades and Projected Schedule of Completion Dates

City of Dinuba

Priority	Description	Projected Cost	Projected Completion Date	Sources of Funding
1	**Mains in "P" Street**			
	Remove existing 21" SS in "P" Street up to Ventura and the 12" SS and 15" SS from Ventura to Greene Street and construct a new 21" SS at a postitive slope	$ 589,950	FY 2022/23	Sewer Impact Fees and Sewer Operating Funds
2	**Mains in Tulare Avenue**			
	Replace 10" SS in Tulare Avenue with parallel sewer of 15" diameter with 4,200 LF of 12" PVC and reconnect all sewer laterals	$ 810,750	FY 2025/26	Sewer Impact Fees and Sewer Operating Funds
3	**Mains in Alta Avenue**			
	Replace 12" SS in Alta Avenue north of Northway	TBD	FY 2026/27	Sewer Impact Fees and Sewer Operating Funds
4	**Mains in West Sierra Way**			
	Construct 7,700 LF of 36" SS trunk sewer and manholes at 500' intervals to replace the existing 18" SS and 27" SS	$ 4,037,650	FY 2032/33	Sewer Impact Fees and Sewer Operating Funds
5	**Main in Euclid Avenue**			
	Remove the existing 12" SS from Northway to El Monte Way and replace with 1,500 LF of 15" SS PVC with manholes	$ 362,250	FY 2037/2038	Sewer Impact Fees and Sewer Operating Funds

Appendix F

SSMP Change Log

Appendix F

City of Dinuba
Sewer System Management Plan
Change Log

Date	SSMP Element/ Section	Description of Change/Revision Made	Change Authorized By: