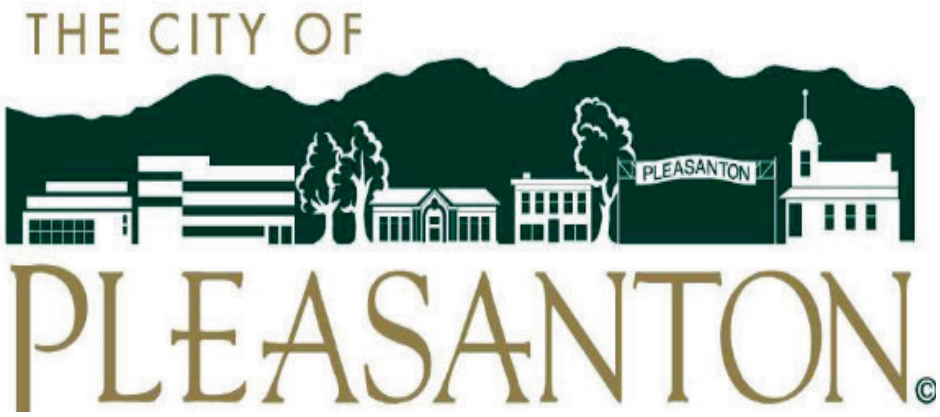

Sanitary Sewer Operations & Maintenance Program Development Summary Report

Causey Consulting

November, 2023

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1.0 Acronyms

CalOSHA – California Occupational Safety and Health Agency

CBT – Computer Based Training

CCTV Closed Circuit Television

CIWQS – California Integrated Water Quality System

CMMS – Computerized Maintenance Management System

DSRSD – Dublin San Ramon Sanitary District

FOG – Fats Oil and Grease

FSE – Food Service Establishment

FY – Fiscal Year

MRP – Monitoring Reporting Program

O&M – Operation & Maintenance

OERP – Overflow Emergency Response Plan

PSERP – Pump Station Emergency Response Plan

PVC – Polyvinyl Chloride Pipe

RFQ – Request for Qualifications

SCADA – Supervisory Control and Data Acquisition

SERP – Spill Emergency Response Plan

SOP – Standard Operating Procedure

SSMP – Sewer System Management Plan aka Plan

SSO – Sanitary Sewer Overflow aka spill

SWRCB – State Water Resources Control Board

USA – Underground Services Alert

VCP – Vitrified Clay Pipe

WDID – Waste Discharge Identification Number

WDR – Waste Discharge Requirement

WQMP – Water Quality Monitoring Plan

2.0 Introduction

The Utilities Division of the City of Pleasanton operates a sanitary sewer system including 255 miles of gravity pipelines, over 6000 manholes and appurtenances, eleven (11) siphons, eleven (11) sewage lift stations and 5.45 miles of force mains from the stations in a twenty-four (24) square mile service area servicing a population of almost 83,000 residents discharging from 26,000 plus residential connections and 475 commercial, industrial, and institutional connections. The sanitary sewer system was predominately constructed between 1960 and 1990 and consists of 63% Vitrified Clay (VCP) and 33% Polyvinyl Chloride pipe (PVC). The system receives commercial, institutional, and industrial waste from approximately 475 additional sewer connections The City discharges most sewage to the Dublin San Ramon Services District (DSRSD) for treatment and disposal with a small percentage from the Ruby Hills area discharging to the City of Livermore Wastewater Treatment Plant.

Historically the City has minimally managed the gravity system by regularly inspecting the sewage lift stations and cleaning known problem pipe segments, and now desires to establish a formal operations and maintenance (O&M) program fully compliant with the State Water Resources Control Board (SWRCB) Waste Discharge Requirements General Order for Sanitary Sewer Systems WQ 2022-0103-DWQ for all sewer assets in the service area. The initial project scope anticipated the revisions to the WDR during the project based upon the expected changes being discussed and ultimately adopted by the SWRCB in December 2022.

The City was initially enrolled in the State Water Resources Control Board (SWRCB) Order No. 2006-00003-DWG (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) and Order No. WQ 2013-0058-EXEC (Monitoring and Reporting Program) and is currently enrolled under the reissued WDR WQ 2022-0103-DWQ, herein referred to as WDR. The City Waste Discharge Identification Number (WDID) is 2SSO10167.

As a requirement of the WDR, the City must maintain a Sanitary Sewer Management Plan (SSMP) and perform internal audits of the SSMP to assess the current state of the sewer program and compliance with WDR provisions. The City's last audit covered the period of FY18/19 and 19/20 and found that although sewer system overflows were few and of small volume, the development of a formal O&M program was recommended to improve compliance with the (then current) WDR. Based on the recommendations of this last SSMP audit, the City is pursuing the development of a formal O&M program to support the sanitary sewer system and comply with the reissued WDR, which went into effect on June 5, 2023. It is the City's goal to develop and implement an effective operations and maintenance program that is fully compliant with the WDR.

The City contracted with Causey Consulting and its team of operations and maintenance experts to assist with the development of a WDR compliant sewer system maintenance program. The Project Consultant Services Agreement dated June 10, 2022, identified the following tasks for the completion of the development of a compliant sewer program:

I. Current O&M Program Understanding – Current O&M Program Understanding: The consultant shall review existing information related to the sewer program to understand its status.

II. Define O&M Program – Develop Future O&M Program: The consultant shall develop the framework and procedures for a formal O&M program including establishing O&M related goals and performance indicators; developing cleaning and condition assessment procedures for gravity piping, manholes, and siphons; developing a bad spot program; updating pump station maintenance checklists; developing a sewer pipe FOG and blockage control program; and recommending preliminary staffing levels and vehicle/equipment needs to support the program. The developed framework and procedures shall be documented in this Sewer O&M Program Report.

III. Emergency Response Plan and Standard Operating Procedures Development – The consultant shall develop an overflow emergency response plan that is compliant with the WDR and shall develop emergency response plans for each of pump station in the event of a utility power outage. The consultant shall also determine the core competency requirements of sewer system operators to establish a prioritize list of SOPs, prepare an SOP template, and develop high priority SOPs as directed by the City via a budget allowance.

IV. Training – The consult shall develop a written training plan (excluding CalOSHA items) for sewer employees that is integrated with the City's Operations Services Department training program. The training plan shall include a matrix of training requirements with frequencies and methods (i.e., classroom courses, field exercises, self-guided electronic courses, etc.) by position classification. Training to be conducted under this contract includes WDR classroom training; OERP classroom training, field exercises, and on-line module development; Water Quality Management Plan classroom training and on-line module development; and others as directed by the City via an allowance.

V. Coordination with Other City Sewer Program Efforts – This task is an allowance for the consultant to coordinate/assist with other City efforts related to the sewer program which are separate from this contract such as Computer Maintenance Management System (CMMS) development, Sewer System Management Plan (SSMP) development, sewer system hydraulic modeling and capacity evaluations, pump station and force main assessments, and development of a capital improvement plan.

VI. Project Management – The consultant shall manage the project team and scope of work, submit monthly invoices, and conduct monthly project meetings with City's project manager.

The Causey Consulting Team (Team) was composed of the following individuals with significant sewer operations and maintenance experience at multiple cities and special districts in California. Mr. Paul H. Causey served as the project manager and key contact for the work while all other members were contracted directly though DKF Solutions Group, Inc. and included the following individuals.

- David Patzer, DKF Solutions, Inc.
- Andy Morrison, AM Consulting
- San Rose, Sam Rose Consulting
- John Balestrini, DKF Risk Control Services
- Stephen Cahill, Training Consultant

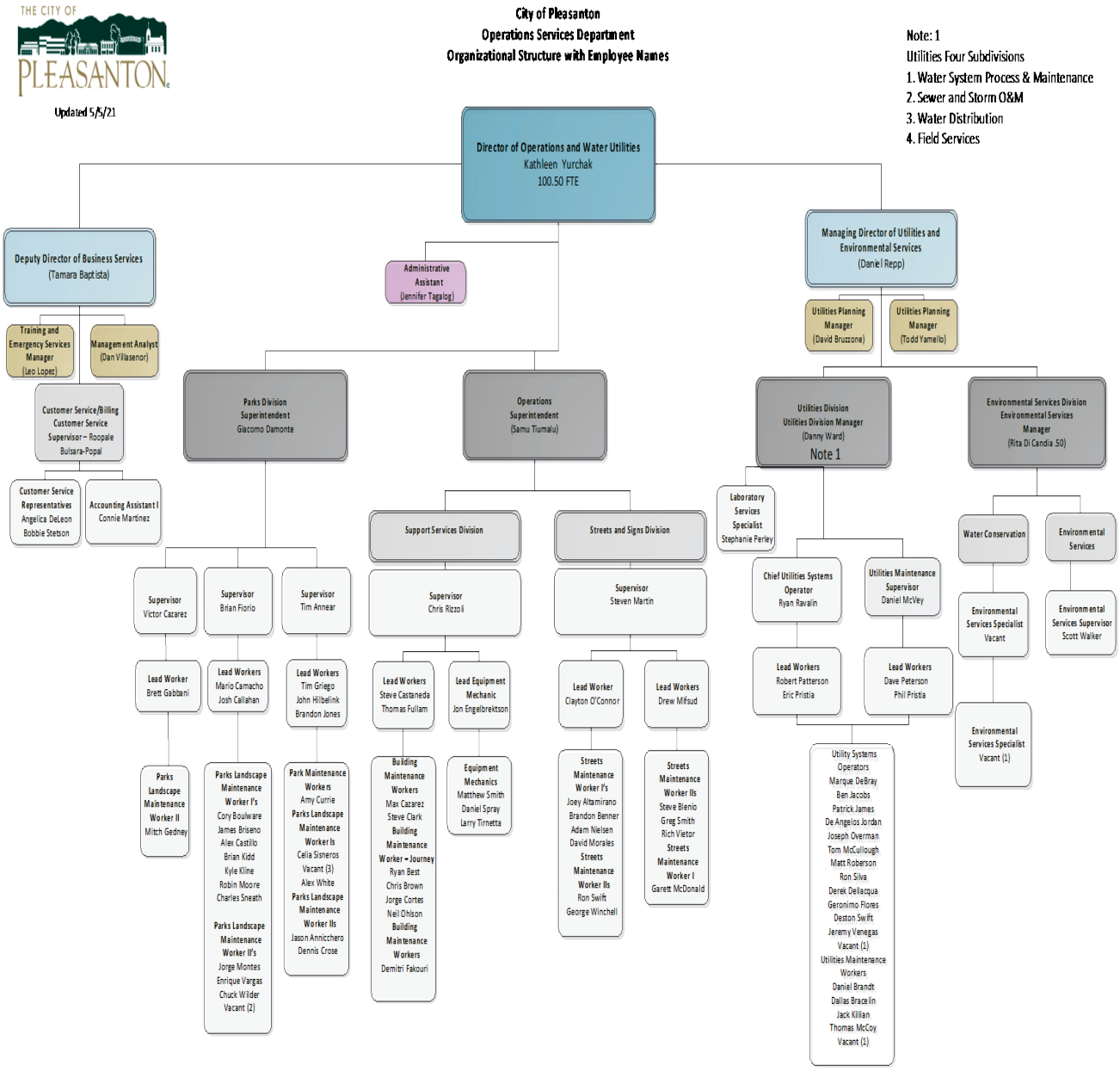
Causey Consulting has developed a broad and dynamic project team of long experienced sewer program operators and managers as well as supporting personnel from DKF Solutions, Inc. that have been directly involved in sewer program development for operations and maintenance, emergency response, safety, risk management, pump station and force main operating procedures and emergency response plans, and extensive training related to all aspects of sewer programs across California. All team members have at one time, or another worked together on projects similar to the current Pleasanton project. DKF Solutions provided emergency response and Water Quality Monitoring Plan (WQMP) documents, while Andy Morrison and Sam Rose, through DKF Solutions provided assistance to Mr. Causey in the development of the major maintenance program elements, staff competency evaluations leading to standard operating procedures and the definition of a future sewer division training program. Mr. Balestrini was available for all services associated with pump stations and force mains. Mr. Cahill was responsible for the conversion of sewer program documents to electronic products should the City so choose. The diversity of capabilities of the Team allowed us to be responsive to the final required work elements in the City RFQ as well as any other related O&M issues that might develop during the project schedule.

The project was managed for the City, by the Utilities Planning Manager, Mr. Todd Yamello who provided coordination and support for the Team throughout the project. Mr. Yamello scheduled all interactions with the City sewer staff and coordinated all requests from the Team for information and documents required for the definition of the compliant sewer operations and maintenance program.

3.0 Current City Sewer O&M Program

The project was initiated with a document request for current policies, procedures and documents used, as of June 2022, to manage the sewer program through the Managing Director of Utilities and Environmental Services Division in the Organization Chart in Figure 1 below.

Figure 1: 2022 Utilities Department Organization Chart



The sewer operations and maintenance program were generally operated through the Managing Director of Utilities and the Utilities Division Manager. The water (domestic and recycled), sanitary and storm sewer related utility operations are managed by the Utilities Division staff who are responsible for the three utility functions. Field staff designated to support the collection system are also responsible for the storm systems and as emergency support for any and all utility related emergencies. Upon receipt and review of the sewer related documents, the Team initiated direct discussions with the Division Manager and Supervisors to assure a complete understanding of the sewer program operations. Sanitary sewer pipeline operations are conducted by the Utilities System Supervisor's staff and the pumping equipment and stations thru the Utilities Maintenance Supervisor's staff. The Environmental Services Division was responsible for all regulatory sampling and testing compliance for water and for the fats, oils, and grease (FOG) inspection program in the sanitary sewer program. During discussions, it was determined that the FOG program was not continuing due to lack of personnel and due to the fact that the City was not experiencing a significant number of FOG related spills. However, the field cleaning staff was of the opinion that the downtown area has historically had poor experience with grease discharges causing maintenance and possibly spill issues. For these reasons and due to the young age of the gravity piping system, almost all cleaning is limited this area of the system and to the several siphons in the system.

The existing sewer operations and maintenance program was generally described in the 2018 Sanitary Sewer Management Plan and several old, unmodified standard operating procedures that had not been reviewed or managed since development many years previously.

The staff interviews resulted in an understanding that the sewer program only regularly cleaned and managed approximately three percent of the gravity pipe system with very little cleaning other than in the old downtown area and in and around areas following spill events. The downtown area tended to have problems related to the discharge of grease from food services establishments requiring frequent line cleanings (Bad Spots) in this area according to discussions with the field management staff even though the historical spill information does not support the staff comments. This is also not supported by any recent condition assessment of the pipes that were included in the bad spot program.

Due to the young age of the gravity sewer system pipes, staff felt that regular cleaning and condition assessment of the system of both pipes and manholes was not warranted or necessary. Limited condition assessments had previously been conducted in the downtown area in the early 2000s, but no other areas were or had been assessed unless there were problems during cleaning or following sewage spills in an attempt to determine the cause of the spill. The old condition assessments of the downtown areas were difficult to use, and no new CCTV assessments have been completed since to determine if repairs or replacements could reduce the maintenance of the lines and manholes in the area.

The current sanitary sewer program at the initiation of the project is fully reactive and historically relies on cleaning of the downtown area, the system siphons, and the pump station wet wells only. Currently, the staff relies on historical practices and not on performance results or condition assessments to drive the cleaning program. There is not a centralized work order system that is easy for the staff to use and that provides both current and historical

results of the field operations. Old condition assessment activities are generally difficult to access and therefore seldom if ever utilized. The current work order maintenance management system (CMMS) system is not conducive to properly supporting the management of the sanitary sewer system. The current system is not state of the art or properly utilized by the staff. There is not a single person responsible for the review and management of the future maintenance program. It is currently left to the Manager and Supervisors to schedule and plan all sewer operations along with their normal management responsibilities. Additionally, due to the low spill rate and few system backups into private property, the City staff determined that broader compliance with the WDR requirements were unnecessary, and the current practices were adequate for the sewer program to comply with the WDR.

The sewer O&M staff are also responsible for the O&M of the City storm water system of pipes, catch basins and storm related assets. All staff time is therefore not fully available for sanitary sewer operations and maintenance. These two-utility operations are also required to be available to assist with any emergencies in the water system and are frequently redirected to assist, reducing available time for sanitary and storm operations and maintenance. Further discussions and evaluations determined that less than fifty percent of the available sanitary sewer designated staff are ever available for normal maintenance activities or condition assessment of the sanitary sewer assets (See City Staff Sewer Productivity in Appendix C).

As a result of the cleaning information and staff comments regarding grease issues related to spills, the team requested information supporting Element 7 of the SSMP regarding the FOG Control Program. Once the documents provided were reviewed, the Team conducted interviews with the Environmental staff and conducted a survey of surrounding and similar agencies FOG inspection programs. These discussions resulted in the understanding that the City previously had operated a FOG Control Program for Food Service Establishments (FSEs) through the Environmental Services Division but that due to staffing shortages in the Division and the pandemic, the food services establishments (FSE) inspection program was allowed to terminate during the pandemic and that it had been several years since FSE inspections had occurred. There was no actual inspections or compliance assessments to support the staff impressions and findings that there were significant grease problems in the downtown area warranting the frequent cleaning currently being experienced.

The last area assessed by the consulting Team involved the operations and maintenance of the City's eleven sewage lift stations and pressure force mains. Conversations with the Utility Maintenance Supervisor responsible for the stations, indicated that the staff regularly inspect the stations based on size and importance and conduct regular O&M maintenance and minor repairs. Some limited documentation for the inspections and maintenance were maintained at each station but generally no information was input to the CMMS work order system. Most maintenance relied on the memory of the staff and/or the limited maintenance reports at each station with no central record keeping. Major repairs, rehabilitations and all electrical maintenance is contracted by the City. The conversations also determined that the City staff does not have defined maintenance programs for any of the 5.45 miles of force mains from the eleven sewage lift stations. No major condition assessments of the lift stations were conducted relying solely on reactive responses to problems and concerns. The final concern identified for the lift station sites is that there was little concern for the vegetation and trees surrounding the stations. The stations are not managed for clearances and/or access, are not regularly inspected

and no actions taken to reduce outside access by the public or concerns for potential fire or vandalism.

The team also reviewed the handling of emergency response to utility issues and determined that the staff was fairly well trained and generally responded appropriately to sanitary sewage spills or other related program emergencies. Fortunately, the City has experienced very few spills and has an SSO Rate per 100 miles of pipe per year well below the San Francisco Bay Area and the State rates for all enrolled agencies.

The overall impression by the Team of the City sanitary sewer program from the background review of documents and interviews of the City sewer management staff was that there is not a properly defined O&M program and that it was significantly impacted by reactive efforts needed to support the water and storm utility operations. The program was based upon past concerns or performance, with very limited pump station O&M, and not based upon actual needs for each sanitary sewer asset.

The City has never conducted a full CCTV condition assessment of all pipes in the system, had no well-defined pumps station maintenance evaluations of stations and no program at all for the force mains. Without a comprehensive understanding of the condition of the assets under management, the City cannot establish a valid and cost-effective program to assure maximum asset life and assurances that any failures of the system are timely repaired and rehabilitated. The City program was not typical for an agency of the size and scope of Pleasanton's and definitely was not compliant with the requirements or expectations of the 2006 WDR or the 2013 MRP and especially its own Sewer System Management Plan (SSMP) procedures. Additionally, the reissued WDR requires a greater commitment to understanding and proactively managing the condition of the assets in the system and especially in areas with high consequence from sewer spills or conditions that might result in exfiltration that can reach waters of the State of California.

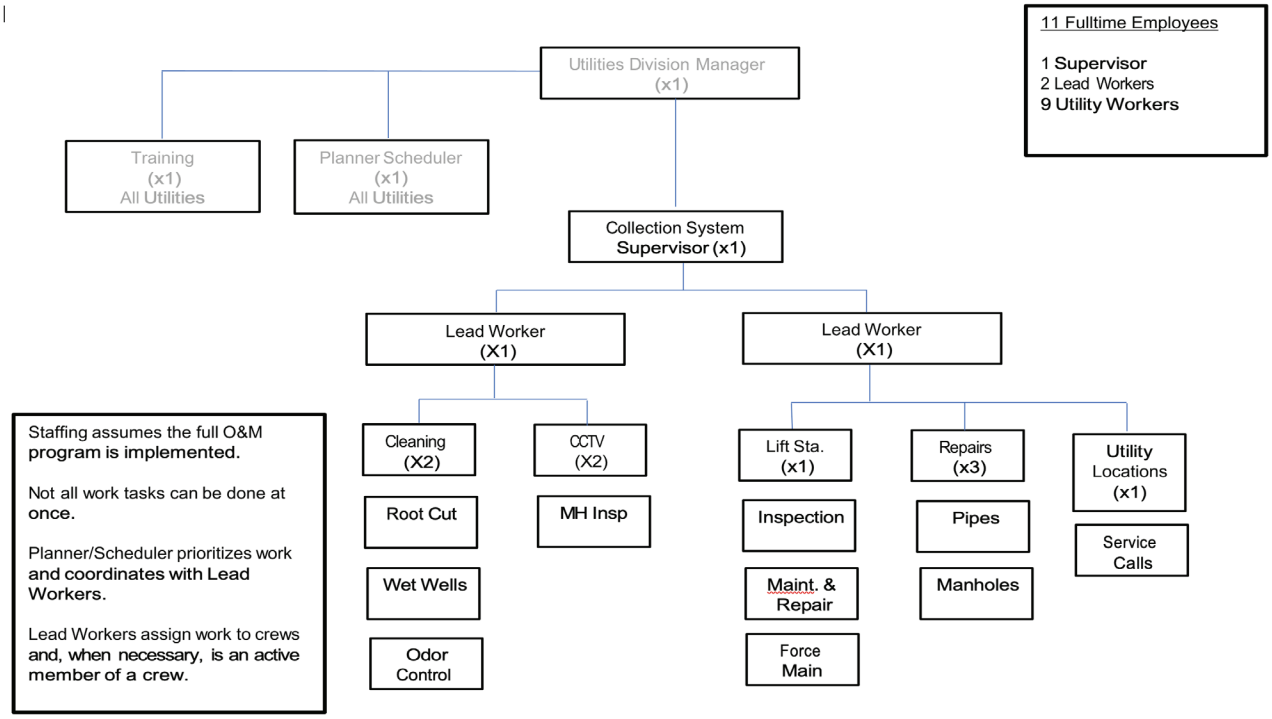
The City had no adequate knowledge to understand if they have an effective operations and maintenance program and no apparent intent to evaluate the needs for a full program based upon an actual comprehensive understanding of the assets under management. And staff has not established any broad program goals or metrics to evaluate program effectiveness or success and to regularly adapt the program based upon results available from a user-friendly CMMS system and condition assessments. Because there were few spills or backups into private property, and few customer complaints, the program was considered to be effective by City management. In addition, there is not strong commitment to the sewer program when management allows for the continuous reassignment of the staff to water related issues and needs. This translates to the fact that the overall utility operation does not have adequate staffing for a proper maintenance program in any of the three utility operations. The fact that all utility employees are cross trained and available for any operational activity without recognition of the true needs of the three utility programs, implies a City management philosophy that values the water system and devalues the sewer programs as a result. It also leads to reduced employee morale and increasing frustration when they are not able to accomplish the desired results for the program due to competing and ever-changing roles and responsibilities.

4.0 Definition of the Future Sanitary Sewer O&M Program

The Teams, utilizing its extensive operations and maintenance experience at multiple public agencies, developed a regulatory compliant definition of a fully staffed, sanitary sewer program. In order to properly comply with the reissued WDR regulations, the City must establish a fully available sewer program staff to accomplish the required and proper operations and maintenance of all sewer assets to maximize asset life and assure effective operating program based upon continuous feedback loops and adaptive management for all sewer assets under management.

The first recommendation is that the City establish a separate Sewer division responsible for all operations and maintenance and emergency response activities related to all sanitary sewer assets – main lines, manholes, siphons, pump stations, force mains. The Division should employ appropriate staffing levels to assure proper operation of the system based upon regular condition assessment and operational results from the field and full-time availability of the necessary staffing level. The Team proposed a sewer program organization chart for the separate sewer divisions as shown in Figure 2 below.

Figure 2: Recommended Sewer Program Organization Chart and Staffing Levels



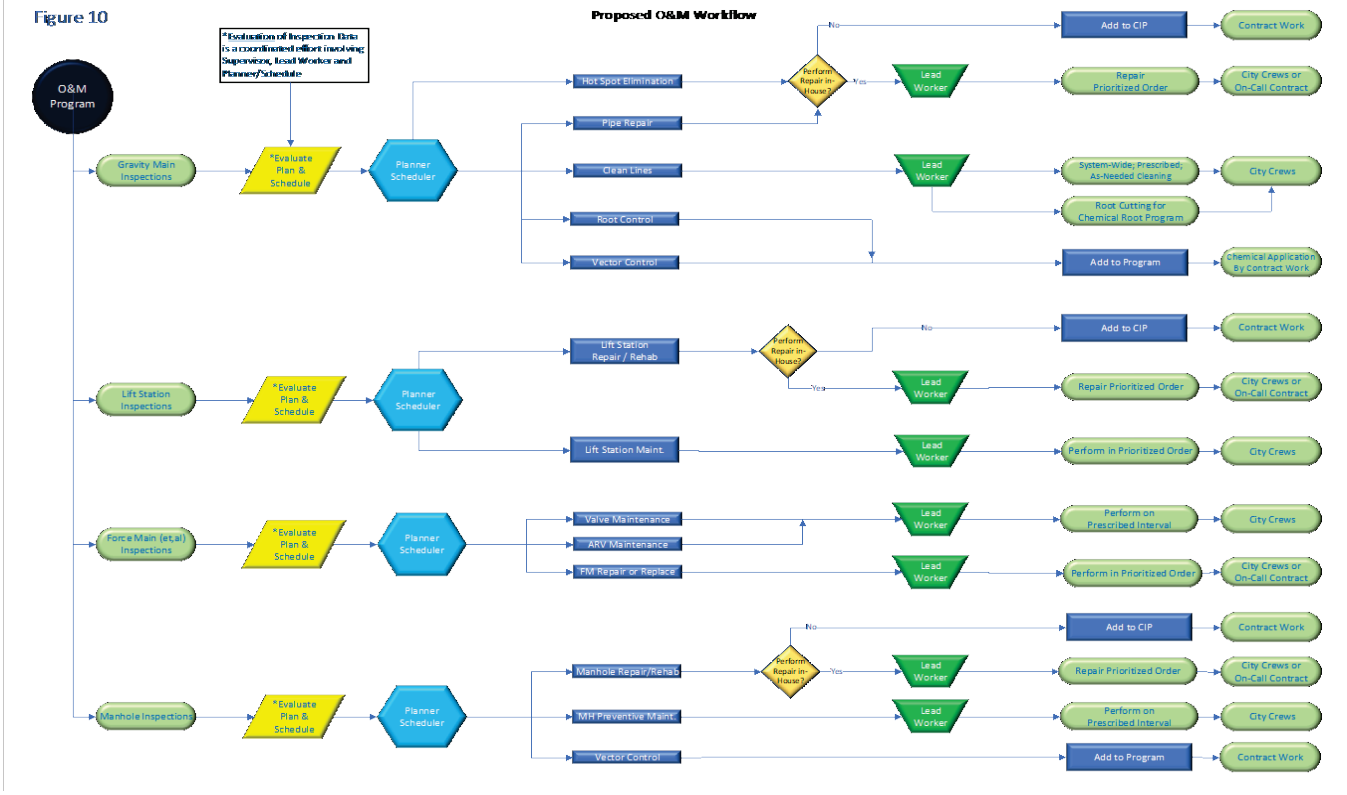
The second recommendation is that the City hire a new Planner/Schedule position whose full-time job is to craft and adapt the sewer maintenance program to assure that the staff only cleans and repairs or replaces sewer assets based on identified need. The new Planner/Scheduler position needs to be well defined, and the person selected, and the Collection System Supervisor should initially attend the two day Richard Palmer and Associates Maintenance Planning and Scheduling Workshop to assure proper understanding

and implementation of the new sewer program. Once the sanitary sewer program is fully defined from the initial condition assessments, this position can then be available to assist the water and storm program with similar program guidance and adaptive management. This new position will assure that the program maximizes asset life and least cost of operations for the rate payers and customers and also complies appropriately with the collection system operations requirements from the State of California. This will eliminate the cleaning of pipes that are clean and will allow for gravity pipe cleaning, and other maintenance tasks, based upon condition assessment, supplemented by field experience.

The Team recommends that the future sanitary sewer operations and maintenance program be based upon regular inspections and condition assessment of all assets types (gravity and pressure pipes, manholes, pump stations and appurtenances) using well-defined asset rating system(s)., (See Appendix D, Wastewater Collection System O&M Program Narrative.) This demands that the City implement a work order management systems capable of providing scheduling and detailed historical maintenance results of all field operations so that the Planner/Scheduler can establish the needed maintenance, repair, and replacement of all sewer program assets. The management system should also be used to ensure staff is properly and consistently assessing and managing all assets in the program. Finally, the City should establish performance goals for the sewer program that are adaptive as the program grows and matures. These goals and performance metrics should be established with the input from the field staff and should be reviewed and updated regularly based upon information and data supplied by the Planner/Scheduler from the new work order system. The Team provided a draft list of typical performance goals to assist the City sewer staff in defining future City goals. These draft goals are contained in Appendix A to the Report.

The Team prepared a comprehensive sewer O&M program flow chart for the future implementation and adaptive operation of the program outlined in Figure 3 below.

Figure 3: Proposed O&M Workflow



In addition, the Team provided detailed descriptions and flow charts for each of the O&M program elements in the central flow chart to the sewer program staff. These element descriptions and flow charts were separately provided to staff and included the following:

List if Work Program Descriptions

- (Proposed) Collection System Department Organizational Chart
- CCTV Inspection Program
- Gravity Main Condition Assessment Program
- Gravity Main Cleaning Program
- Criteria to Establish Hot Spots
- Hot Spot Elimination Program
- Manhole Inspection Program
- Manhole Condition Assessment Program
- Manhole Repair-Rehab Program

- Lift Station Inspection Program
- Lift Station Maintenance Program
- Lift Station Condition Assessment Program
- Force Main Inspection Program
- Pipe Repair Program
- Root Control Program
- Odor Control Program
- Vector Control Program

Flow Charts and Decision Trees

- Figure 1 – CCTV Inspection Return Interval
- Figure 2 – Manhole Inspection Return Interval
- Figure 3 – Force Main Inspection Return Interval
- Figure 4 – Chemical Root Control Return Interval
- Figure 5 – Gravity Main Cleaning Return Interval
- Figure 6 – CCTV Inspection Priorities
- Figure 7 – Pleasanton Proposed CS Org Chart
- Figure 8 – Lift Station Inspection Return Interval
- Collection System O&M Workflow

Because the City has never completed a full condition assessment of the sewer system piping assets and therefore do not know what the system cleaning needs are, the third recommendation is that the City spend three years completing a full condition assessment and condition rating of all gravity system pipes and manholes and use the resulting information to develop a needs-based gravity pipe cleaning and maintenance program from the results. This would include definitions for both bad spot maintenance and root control. And regular manhole inspection frequencies. In addition, the City should also conduct condition assessments of each of the sewer force mains from the eleven lift stations during this three-year period. This would include both internal pipe inspections and external alignment assessments along with assessment of the manholes where the pressure mains discharge to the gravity system. Finally, the City should define a schedule for the regular, on-going condition

assessment of the 6000 plus manhole assets in the system along with gravity pipe assessments above.

This recommended initial condition assessment of all sewer system pipes and manholes, once completed will allow management and the new Planner/Scheduler to define the operations and maintenance program for the future based upon actual conditions/needs and in compliance with the reissued WDR. It should also allow for regular adaptation of the program based upon findings of operations, maintenance, and regular assessment of the sewer assets. This management program should result in a program that optimizes resources and is cost effective and responsive to the needs of the City customers and will assure extension of asset life for the longest possible periods.

These changes in sewer program policy and philosophy will also provide the City with the necessary information to establish a properly prioritized capital renewal and replacement program based upon condition, risk and consequences of failure, potential impacts to Waters of the State and important background information for regular sewer program master planning and evaluations and well justified rates and charges based upon actual need. This change is consistent with the newly reissued WDR and will replace a program that has been deficient as an operation and maintenance program historically.

The final O&M program at the end of the three-year assessment period should include the following individual program elements for a fully compliant operation that is managed and funded based upon actual asset conditions and needs and regularly adapted from this information.

1. Regular asset condition assessment based upon a nationally recognized rating philosophy.
    a. Pipeline
    b. Manholes
    c. Pump stations
    d. Force mains
    e. Appurtenances
2. Pipeline Cleaning Program is based upon need not past historical performance.
    a. Preventative (Bad Spot) cleaning
    b. Corrective cleaning
    c. Lines 15 inch and great in diameter
    d. Siphon cleaning

e. Manhole maintenance

f. Root control program

g. Odor management

3. Pump station

    a. Checklists

    b. Operations and maintenance

    c. Emergency management

    d. Other

4. Force main program – While the scope for the project did not include the development of or assessment of the 5.45 miles of this type of asset, the WDR requirements both old and new requires that the City include proper operations, maintenance and condition assessment of all sewer program assets including the pressure pipes. This program should be developed as part of the three-year full system condition assessment program resulting in the definition of a future O&M program for these important assets prioritized for the consequences of a failure of these assets

5. Chemical root control program should be based upon results of regular condition assessments to evaluate and determine actual needs in the system.

6. Blockage Control Program (Old FOG Inspection Program) – the City several years ago eliminated the FOG Control Program due to staffing issues and few reported grease related spills. The reissued WDR requires that the City establish a blockage control plan and the centerpiece of this plan relates to grease discharges and food service establishments. The survey conducted by the Team found that all the surveyed agencies, have, for many years, had FSE inspection and compliance programs. In addition, staff comments received during the program indicated that many grease involved spills in the downtown area were the major cause even though the CIWQS data does not support this. The City, following completion of the initial comprehensive condition assessment project, should reevaluate and estimate the cost and value of a well-defined inspection and compliance program for the City's almost 300 existing FSEs that complies with the new Sewer Pipe Blockage Control Plan requirements for Element 7 of the SSMP. This plan must prioritize areas prone or vulnerable to blockages that could result in spills especially to waters of the state from FOG or other blockage materials in the sewer program assets.

7. Sewer system master planning – Regular condition assessment and documented field conditions from the new CMMS system should support and assist regular comprehensive master planning efforts about every five years for all sewer program assets. These efforts should include extensive evaluations of the conditions and needs of the lift stations and the force mains. This also allows for the identification of necessary funding required by

the WDR for asset renewal and replacement as well as system expansion needs to properly manage and operate the sewer assets. This will also assure that the SSMP remain current and adaptive with the changes identified both from the field and from the comprehensive assessments of the assets by outside consultants.

8. Program SOP Management and Update – This element is required to assure that all operating procedures remain current and useful for operations staff and for proper training of the staff in the sewer program.

9. Regular Staff Training – Implementation and management of staff training to assure all staff have the knowledge, skills, and abilities to properly and safely conduct their level of responsibilities and comply with all regulatory requirements from the State and other sewer program regulators. This program should be managed, coordinated, scheduled, and tracked by the Training and Emergency Services Manager.

5.0 Emergency Response and Standard Operating Procedure Development

The Team was tasked with the development of a comprehensive emergency response plans for compliance with spill event notification, monitoring, reporting, and recordkeeping. These plans were required to be compliant with both the 2006 WDR and 2013 MRP requirements until the reissued requirements were effective on June 5, 2023. The scope also included revising the initial emergency response plans as required by the reissued WDR. This ultimately require that Team to prepare and assist with the preparation and implementation of a new Spill Emergency Response Plan (SERP) by the WDR effective date.

The project scope also included the development of Pump Station Emergency Response Plans (PSERP) for each of the eleven lift stations. In addition, the project also required the development of new or revised standard operating procedures for consistent staff operations and training.

Finally, the project included competency evaluations of staff to determine level of core competencies in the sewer program. These competency evaluations were for development of both a prioritized listing of standard operating procedures and a well-defined training program based upon sewer program job classifications. The project scope included the preparation of an SOP management template and to initiate the preparation of a limited number of the highest priority SOPs.

5.1 Overflow Emergency Response and Water Quality Monitoring Plans

The project included the development of City specific Overflow Emergency Response Plan (OERP) and Water Quality Monitoring Plan (WQMP) composed of narratives and a separate SSO Response Workbook to be used in the field to document actions and activities related to City response to spill events and a plan that complies with spill sampling procedures for spills greater than 50,000 gallons. The Team utilizing standard OERP and WQMP models developed by DKF Solutions Group used across the State of California and used by almost

200 other enrolled agencies. The development of the City OERP and WQMP involved staff interviews that provided City specific procedures for emergency response. This was an early requirement of the project and resulted in approved OERP and WQMP in November 2022. The OERP and WQMP replaced all old City SSO procedures and guidelines for SSO responses, reporting, and recordkeeping.

Following the adoption of the reissued WDR in December 2022, the Consulting Team was required to revise the OERP as a Spill Emergency Response Plan (SERP) and modify the OERP procedures to comply with the new event response and recordkeeping requirements. The WDR no longer required a separate WQMP, and this information was added to the SERP as a Sampling and Testing Procedure. The revisions and the new SERP were required to be in place not later than the WDR effective date of June 5, 2023, for all spill events after that date. A preliminary SERP was completed on May 10, 2023, in order to allow for staff training on the new requirements. The preliminary SERP was prepared assuming the new CIWQS reporting requirements that the State would require. Following the State's completion of the new reporting requirements in CIWQS, a final copy of the SERP was prepared and submitted to the City on July 10, 2023. The major changes required by the reissued WDR included the use of new terms especially for spills, a new spill category 4 for spills less than 50 gallons, spills from owner owned/operated laterals, new reporting requirements for these two new spill categories, updated requirements for sampling of spill equal to or greater than 50,000 gallons to be conducted within 18 hours of becoming aware of the spill. The WDR also now requires that Post Spill Assessments be conducted on all spills and requires that the City annually review, update, and certify that the SERP is current, and that the O&M staff provided input to the annual review.

The City requested additional copies of the SERP Workbooks to be available to the City emergency response personnel. The City staff is now utilizing the SERP for all event compliance and recordkeeping for full documentation of all spills from the City sanitary sewer system.

5.2 Core Competency Evaluations

The Team was tasked with evaluating and defining in priority order the core competencies by job classification of a sewer employee with the City of Pleasanton. The core competencies were determined for the following City sewer program job classifications and the program was initiated early in the project following review of the sewer program documents provided.

- Utility System Chief Operator
- Senior Utility System Operator
- Lead Utilities System Operator
- Utilities System Operator
- Utility Maintenance Supervisor

- Utilities System Maintenance Worker

The core competencies evaluation utilized the DKF Solutions Group, Inc. Job Competencies Builder a web-based application designed as a working tool for managing classification core competencies to assure employees in each classification have the knowledge, skills, and abilities to perform properly and safely their work for the City sewer program. Using the Job Competencies Builder, Mr. Morrison conducted interviews with representatives of each classification to determine the City core competencies required for each position (sewer only). This information was then used to identify supporting standard operating procedures and to formulate the City Sewer Program Training Plan. This Training Plan will ultimately be included in the broader training program developed for the City.

The Job Competencies Builder contains a long list of sewer program competencies necessary for well trained and competent sewer employees. This computer-based application was developed by DKF Solutions based upon evaluations of many sewer program classifications across California. As a result of the field interviews, fifty-seven core competencies for sewer operations were determined to apply at various levels for the six City job classification. The competencies identified from the interviews are required competencies for new employees to long term employees at each classification level. The work resulted in a formal Job Competencies Training Plan and Assessment Worksheets dated September 2022. The Assessment Worksheets developed and included in the Report are used to evaluate and assess individual employee competencies to assure that the employee assessed has the required knowledge, skills, and abilities to properly perform his/her role in the organization at the employee's classification level.

The competency evaluations evaluated and prioritized the importance of each of the competencies utilizing several specific criteria including:

- Frequency of task
- Risk to the employee
- Risk to Co-workers
- Risk to agency property
- Risk to private property
- Regulatory non-compliance

The results of the effort provided a risk-based score for each selected competency that was used to develop and prioritize a list of the standard operating procedures (See Appendix B attached) development and was used to identify both a training standard to be used for the competency and the frequency of refresher training for each competency. The final listing was then used to establish a new employee training program for the orientation of a new employee in each classification.

The final list of sewer program competencies identified were as follows:

- Air Relief Valve Maintenance
- Basic Carpentry
- Basic Electrical Maintenance
- Basic Shop Safety
- Bucket Truck
- Bypass Pumping
- Chainsaw Operation
- Communicating with the Public
- Concrete Saw
- Confined Space Entry
- Crane Operation
- Crew Truck Operation
- Defensive Driving
- Documentation
- Dump Truck Operation
- Dye Testing
- Easement Maintenance
- Ergonomics
- Excavation
- Fall Protection
- Fire Extinguisher use
- First Aid/CPR
- Flow Meter Installation

- FOG Program Management
- Forklift Operator
- Gas Detector Calibration
- Generator Functional Testing
- Generator Inspection
- Haz Mat/Waste Handling
- Hydro-excavating
- Injury & Illness Prevention Program (IIPP)
- Job Competency/Training Oversight
- Lift Station Operation
- Manhole Raising
- Manhole Safety
- Multi Meter Operation
- Overhead Hoist Operation
- Planning/Scheduling
- Plugging a Sewer Line
- Pressure Washers
- Programmable Logic Controllers9
- Purchasing
- Sanitary Sewer Overflow (SSO)
- SCADA Use
- Service Call
- Sewer Force Main Repair
- Sewer Line Vacuum/Jet Rodding

- Skid Steer Loader (SSL) Operation
- Smoke Testing
- Spot Repair
- Televising a Sewer Line
- Temporary Traffic Control/Flagger
- Tractor Loader Backhoe (TLB) Operator
- Trailer Safety
- Underground Service Alerts (USA)
- Underground Utility Locating
- Welding, Plasma Cutter, and Torches

The Competencies Training Plan by Classification included the training standard to be used, the resources for training, the development dates for the supporting procedure and competency refresher training frequency by classification titles. It also provided an outline by classification of the training required for a new employee in the first 24 months of employment.

The Job Competency Builder will also allow City staff to revise, amend and add or delete competencies as the sewer program matures and grows in the future.

5.3 Standard Operating Procedures Development

The project effort anticipated the development of both a Standard Management SOP used by management to assure that SOPs remain up-to-date, and the preparation of 5 to 7 City designated high priority SOPs based upon the competency evaluation results, the risk level, the frequency of the procedure. The Management SOP provides the management format for any SOP including regular review and update schedules, and assigned responsibilities for the management of the SOP. The final step was to create electronic SOPs utilizing the SMART SOP webpage developed and housed by DKF Solutions.

The Team, after review of the standard operating procedures previously prepared by the City, determined that new and updated SOPs were warranted. Upon completion of the competency evaluations, the Team outlined and prioritized areas for potential SOPs, which were provided to the sewer management team for review and comment. The City revised the priority listing and after discussions with the Team, determined the top 7 SOPs to be drafted and upon completion, made available to City staff for management implementation and use. The Consulting Team identified 57 potential SOPs for development in priority order from the Competency Builder.

The seven SOPs chosen by City staff for drafting, submittal and implementation included the following (See Appendix B for the complete list of SOPs):

1. Sewer Line Jet Rodding and Vacuum Operations
2. Underground Utility Locating
3. Manhole Safety
4. Plugging a Sewer Line
5. CCTV
6. Gravity main repair
7. Bypass Pumping

The final documents provided to the City included a pdf of each SOP, training checklists and training gap analysis forms. In addition, each SOP has a computer-based training module available on SMART SOP. This later vehicle allows an employee to access the SOP either in the office or on tablets available in the field.

Subsequent to the completion of the above original high priority SOPs, the City requested the Team to prepare five additional SOPs from the priority listing including a specific update of Vacuum/Jet Rodder for new equipment purchased by the City.

1. Update the Sewer Line Vacuum/Jet Rodding to incorporate newly purchased vehicle.
2. Hydro-excavating (this would cover both water and sewer)
3. Generator functional testing (this would cover both water and sewer)
4. Generator inspection (this would cover both water and sewer)
5. Sewer Pump Stations Inspections and Maintenance

5.4 Pump Station Emergency Response Plans (PSERP)

The project scope provided for the development of eleven individual pump station emergency response plans. The Team began the effort with review of current pump station maintenance documents, meetings with City staff responsible for sewer pump stations, force main operations and field visits to the five largest stations in the City system. These inspections established the basic information and background for each station necessary to begin the drafting of PSERPs. The first draft completed for station S-6 was submitted for staff review and comment and to set the content and formatting standards for the remaining ten stations. While the staff was reviewing the S-6 draft, the Team began preparing five additional drafts and ultimately submitted additional PSERPs for stations S-2, S-5, S-7, S-8 and S-10.

As a result of the staff review and concerns with the scope and detail in the S-6 PSERP, it was determined by City management that staff were not yet prepared or adequately trained to be able to utilize the information and procedures that were being included in the PSERP. As a result, the Team scope of work was revised and limited to the preparation and submittal of the additional five completed drafts and the remaining scope was revised to provide comprehensive pump station checklists for the operations and maintenance of each of the pump stations. These checklists were to be used as training and for the development of well-defined understanding of each pump station operations and maintenance requirements by staff before implementing PSERPs.

Ultimately, the Team produced draft and final EXCEL Pump Station Inspection Worksheet for the eleven stations were produced, field evaluated and modified to allow City staff the ability to create consistent and complete O&M checklists for various time periods from daily through annual. Each checklist in the EXCEL Worksheet can be tailored for the specific station based upon the actual location and assets associated with the station by the City field staff. The City was also provided with the directions and procedures for managing, modifying, and printing checklist reports to be used at the stations and to support historical operating procedure adaptation in the future.

Ultimately, once staff has reached a more complete understanding and comfort operating these assets, the City should prepare, complete and implement emergency response plans for each station formatted similarly to the six drafts provided.

6.0 Staff Training

The project required a broad range of staff training opportunities for the City sewer and spill emergency response staff. The specific training opportunities conducted by Team members included.

1. WDR basic training for both the old WDR requirements and the reissued WDR requirements.

2. OERP and WQMP training, assessments, and field exercises.

3. SERP classroom and field exercises, including the new compliant documents and forms.

4. Sewer Spill sampling and testing training, field exercises and assessments.

5. Training on the use and access to the City Computer Based Training (CBT) for SOPs and training modules.

All classroom trainings were conducted in the City Remillard Room and included PowerPoint presentations and active interaction with those in attendance. Sessions were conducted generally in two separate two-to-four-hour sessions to allow for the continuity of sewer program activities during training. Field exercises were conducted at the Maintenance Services Center for spill emergency response and in the field near a water body for the sampling and testing field training. In addition, the Consulting Team also conducted

individual training assessments of those attending the OERP, SERP and sampling training and field exercises. The results of these assessments determined areas for additional training for specific weaknesses or issues identified. These assessments resulted in additional classroom directed training sessions to further enhance attendee understanding and implementation of the City's new operational requirements.

The project scope included the development of a Pleasanton Training Plan for Sewer Operations (Plan) in coordination with the City's Training and Emergency Services Manager. The purpose of the Plan is to provide knowledge, to develop the skills and abilities of Utilities staff to ensure competent performance and adherence to safe and efficient work practices, and to set performance expectations for new and existing employees. This Plan is intended to provide all required and desired training needs for employees from new employee orientation through regular ongoing required training to assure employees have complete knowledge, skills, and abilities necessary for the classification and responsibilities assigned in the sewer program. The Plan was developed utilizing the results of the Job Competencies evaluations and sewer program job classification to establish the needed training and the frequency required for the training. The Plan identifies the steps necessary for the proper orientation of a new employees and identifies the training standard necessary to be considered competent for the job classification. The refresher training frequency for all sewer employees was also stated and is to be managed by the City's Training and Emergency Services Manager.

Finally, the scope also included the development of computer-based training modules to support the Sanitary Sewer Training Plan and the Standard Operating Procedures. The Team developed a separate Pleasanton specific SERP and sampling CBT sessions on DKF Solutions' TrainingLink platform. The SOP training modules are available to City staff through SMART SOP and can be accessed individually by employees for each of the high priority SOPs stated in the previous section of this report. The system tracks individual training by employee on individual SOPs.

7.0 Coordination with Other City Sewer Development Programs

The project scope provided funding necessary for the coordination and consultation with other City sewer related consulting efforts in parallel with the O&M development project. The only coordination effort required during the term of the project was for providing input and limited early coordination with the new Mainstar computer maintenance management system development. The Consulting Team provided input on the required fields and data that should be included in the new work order system including discussions of the inclusion of both new and historical condition assessment information and video formats. Finally, Mr. Morrison was requested to identify additional competencies required for the operations and maintenance of the City's potable water system.

8.0 Program Management

The project management task provided for the regular meetings and project management of the work effort. These included monthly Consulting Team meetings, regular update on the project with the City Project Manager and regular contract administration, project management coordination and monthly invoicing and billing.

9.0 Conclusions

The City has since 2006 operated a substandard, non-compliant sewer operation and maintenance program that has always been subservient to the more pressing water program needs. The sewer program has not complied with the SWRCB requirements for operations and maintenance of the entire sanitary sewer systems even though the program has not experienced significant sewage spills that have warranted formal compliance actions with the WDR. In recognizing this lack of a properly defined program, the City hired the Consulting Team of Causey Consulting to assist with the development of a comprehensive operations and maintenance program for this City function that will not expose the City to risk and liability from a regulatory deficient sewer program.

In addition, the Team has evaluated the current City staff levels in the program and found that they fall short of the levels described in Figure 1 earlier in this Report. This finding is true even if the sewer program is fully staffed and has traditionally been pulled away from sewer operations for water or storm related issues or emergencies. It appears that the water program may not be properly staffed to meet all of that utility's needs. The Team has recommended that the City establish a separate sewer division that is self-contained and not impacted by the short staffing in other utility divisions.

The Team has outlined and provided the format for a sewer program that if implemented following the initial three-year assessment process and properly staffed will create a program that is based upon need and should provide a cost effective and continually adapting program based upon actual experience from the field and adapted from regular, ongoing condition assessments. The program philosophy should be to only conduct operations and maintenance on system assets when needed, not because of historical beliefs. This program, when fully implemented, should assure that assets reach or exceed their useful life, are timely repaired and/or replaced and limit and reduce impacts from sewage spills from the assets. The formal program definition can only be accomplished following a period of full condition assessment of all sewer program assets to assure a broad understanding of need from both historical experience and actual conditions in the field. These results and future assessments should be used to drive the future sewer program operations and maintenance program.

It is imperative that the City end the continuous use of staff in other utility programs. They must commit to the success of the new sewer division if they are to properly comply with the reissued WDR requirements and that cannot happen with a staff that is only available less than 50%. This requires that City management either expand staff in other utility programs or stop the practice of using sewer employees in the other utility programs. The establishment of a separate Sewer Division fully funded and supported to comply with the regulations will

significantly reduce the City risk and liability for the current management philosophy. The Team believes that the current staffing levels are mostly inadequate for sanitary sewer operations even with the addition of a Planner/Scheduler who must be responsible the adaptive management of the sewer program. It has been found by other agencies that a position such as this can cost effectively implement pipeline maintenance to only as needed.

The State's reissued WDR effective June 5, 2023, has significantly expanded the States expectations for spill reduction, effective sewer system maintenance, assessments, asset management and protection of Waters of the State including exfiltration from sewer pipe assets to groundwater. No longer can the City ignore 97% of the gravity pipes and 100% of the pressure pipe in the system. These issues alone place the City in great jeopardy for enforcement or litigation for failure to comply with the State requirements. Failure of enrolled agencies to comply in the past with the old WDR regulations have cost agencies from $50,000 to $6,500,000 dollars in enforcement or litigation settlement amounts. These figures do not include actual staff and legal support efforts required to reach settlement amounts. The reissued WDR requirement now make most things a requirement not an optional implementation issue. It is expected that programs such as the current Pleasanton program will be ripe for enforcement or for litigation from the environmental community if the sewer program is not improved and expanded as outline as stated herein.

The Team wishes to thank the City staff for their commitment to the project and for the time and effort required to assist in explaining and coordinating the many interviews, training and exercise events throughout the past year plus. The Team believes that the sewer program staff is fully committed to developing and implementing a fully compliant best-in-class program as outlined in this Sanitary Sewer Operations and Maintenance Development Plan.

10.0 Appendices/Attachments

Appendix A: Sample Program Goals

Goals per Calendar Year	Target
Regulatory Compliance	
o Number of Spills	?
o Spill Reports Completed on Time	100%
o Annual Report Completed on Time	100%
o SSMP Audit Completed on Time	100%
o SSMP Update Completed on Time	100%
Spill Response	
Response Time (receipt of call to arrival at site)	
o During Business Hours	Less than 30 min 95% of the time
o After Business Hours	Less than 60 min 95% of the time
Spill Recovery Volume	75%
Spill Reduction	
Number of Repeat Spills	0
Maintenance	
o Gravity Mains Inspection (Linear Feet)	Initial = 1/3 the system Future = 1/5 the system
o Maintenance Hole Inspection (Number)	1/X the system
o Lift Station Interval Inspections Completed	X%
o Force Main Interval Inspections Completed	X%
o Open vs. Total Work Orders	X%

Appendix B: Summary of Standard Operating Procedures from Competency Assessments

City of Pleasanton
Summary of Standard Operating Procedures
Priority Order
October 2022

			Job Competencies								
Job Competency	SOP (or Written Program/Policy) Exists?	SOP User	Risk to Employee (1-3)	Risk to Coworkers (1-3)	Risk to Agency Property (1-3)	Risk to Private Property (1-3)	Regulatory Non-Compliance Risk (1-3)	Total Risk Score	Frequency of Task	Frequency Weighted Risk Score	Critical for New Hires?
Hydro-excavating	N	UTL	3	3	2	2	3	13	4	52	Y
Sewer Lift Station Operation	N	SEW	2	2	3	3	3	13	4	52	N
Temporary Traffic Control/Flagger	P	OSD	3	3	2	2	3	13	4	52	Y
Tractor Loader Backhoe (TLB) Operator	N	OSD	3	3	2	2	3	13	4	52	N
Defensive Driving	P	OSD	2	2	3	3	2	12	4	48	Y
Excavation	N	OSD	3	3	1	1	3	11	4	44	Y
Pressure Main Repair (formerly forcemain)	N	UTL	3	3	2	0	3	11	4	44	N
Sewer Line Vacuum/Jet Rodding	N	SEW	2	2	3	1	3	11	4	44	Y
Underground Service Alerts (USA)	N	OSD	2	0	3	3	3	11	4	44	N
Fall Protection	Y	OSD	3	3	1	0	3	10	4	40	Y
Service Call	N	UTL	2	2	2	2	2	10	4	40	N
Trailer Safety	P	OSD	2	2	2	2	2	10	4	40	Y
Underground Utility Locating	N	UTL	2	1	2	2	3	10	4	40	N
Dump Truck Operation	N	OSD	2	2	2	1	2	9	4	36	Y
Gas Detector Calibration	Y	OSD	3	3	1	0	2	9	4	36	Y
Manhole Safety	N	SEW	3	2	1	1	2	9	4	36	Y
Plugging a Sewer Line	N	SEW	3	3	2	2	2	12	3	36	Y
Televising a Sewer Line	N	SEW	2	2	2	0	3	9	4	36	Y
Forklift Operator	P	OSD	2	3	2	1	2	10	3	30	Y
Skid Steer Loader (SSL) Operation	N	OSD	2	3	2	1	2	10	3	30	N
Concrete Saw	N	OSD	2	1	1	1	2	7	4	28	Y
Ergonomics	N	OSD	3	0	3	0	1	7	4	28	Y
Basic Electrical Maintenance	N	OSD	3	2	2	0	2	9	3	27	N
Chainsaw Operation	N	OSD	3	2	1	1	2	9	3	27	Y
Confined Space Entry	Y	OSD	3	2	1	0	3	9	3	27	Y
Mobile Crane Operation	P	OSD	2	2	2	1	2	9	3	27	N
Welding, Plasma Cutter and Torches	N	OSD	3	2	2	0	2	9	3	27	N
Basic Shop Safety	N	OSD	2	2	1	0	1	6	4	24	Y
Injury & Illness Prevention Program (IIPP)	Y	OSD	2	1	0	0	3	6	4	24	Y

City of Pleasanton
Summary of Standard Operating Procedures
Priority Order
October 2022

Job Competency	SOP (or Written Program/Policy) Exists?	SOP User	Risk to Employee (1-3)	Risk to Coworkers (1-3)	Risk to Agency Property (1-3)	Risk to Private Property (1-3)	Regulatory Non-Compliance Risk (1-3)	Total Risk Score	Frequency of Task	Frequency Weighted Risk Score	Critical for New Hires?
Gravity Main Repair	N	SEW	3	3	2	1	2	11	2	22	N
Sanitary Sewer Overflow	P	SEW	2	2	2	2	3	11	2	22	Y
Generator Functional Testing	N	UTL	1	1	2	1	2	7	3	21	N
Generator Inspection	N	UTL	1	1	2	1	2	7	3	21	N
Multi Meter Operation	N	OSD	2	2	1	0	2	7	3	21	N
Planning/Scheduling	N	OSD	1	1	1	1	1	5	4	20	N
Bucket Truck	N	OSD	2	2	2	1	2	9	2	18	N
Basic Carpentry	N	OSD	2	2	1	0	1	6	3	18	N
Pressure Washers	N	OSD	2	2	1	0	1	6	3	18	Y
Crew Truck Operation	N	OSD	1	1	1	0	1	4	4	16	Y
FOG Program Management	N	SEW	1	1	2	1	3	8	2	16	N
Air Relief Valve Maintenance	N	UTL	2	1	1	1	2	7	2	14	N
Haz Mat/Waste Handling	N	OSD	2	2	1	0	2	7	2	14	Y
Manhole Raising	N	SEW	2	2	1	1	1	7	2	14	N
Communicating with the Public	N	OSD	1	0	2	0	0	3	4	12	Y
Job Competency/Training Management	N	OSD	1	1	2	0	2	6	2	12	N
Overhead Hoist Operation	N	OSD	2	2	1	0	1	6	2	12	N
SCADA Use	N	UTL	0	0	1	1	1	3	4	12	N
Sewer Collection System Bypass Pumping	N	SEW	2	2	2	2	3	11	1	11	N
Sewer Lift Station Emergency Response	P	SEW	2	2	2	2	3	11	1	11	N
Documentation	N	OSD	1	1	1	1	1	5	2	10	N
Easement Maintenance	N	UTL	2	1	1	2	1	7	1	7	N
Fire Extinguisher use	Y	OSD	1	1	1	0	1	4	1	4	Y
First Aid/CPR	Y	OSD	0	1	0	0	1	2	2	4	Y
Progammable Logic Controllers	N	UTL	0	0	1	0	1	2	2	4	N
Purchasing	Y	OSD	0	0	1	0	0	1	4	4	N
Flow Meter Installation	N	UTL	1	1	0	0	1	3	1	3	N
Smoke Testing	N	SEW	1	1	1	0	0	3	1	3	N
Dye Testing	N	UTL	0	0	0	1	0	1	2	2	N

Appendix C: Assessment of Staff Sewer Productivity

Utilities Division Staffing

Utilities Division Field Staff [1]	Chief Systems Utilities Operator		Utilities Maintenance Supervisor		Total
	Sewer and Storm O&M	Field Services & Standby	Water System Maintenance	Distribution	
Lead Utilities System Operator	1	1	1	1	4
Utilities System Operator II (To become Seniors Utility Operator)	1	3	4	2	10
Utilities System Operator I (To become Utility Operator)	2	1	0	1	4
Utility System Maintenance Worker	1	1	0	2	4
Total	5	6	5	6	22

Notes:

1. Table reflects current number of Utilities Division field staff including vacancies. Staffing distibution is shown as is utilized by management/supervisors under ideal conditions (i.e. all staff available).

Utilities Division Sewer Staff Availability

Sewer Staff	Calendar Hours (Hrs/Year)	Time Off [1] (Hrs/Year)	Sick [2] (Hrs/Year)	Other [3] (Hrs/Year)	CTO [4] (Hrs/Year)	Working Hours (Hrs/Year)	% Working Hours (vs. Calendar)	Non-Core Work [5] (Hrs/Year)	Storm Work [6]	Sewer Working Hours (Hrs/Year)	% Sewer Working Hours (vs. Working)	% Sewer Working Hours (vs. Calendar)
Lead Utilities System Operator	2080	321	122	107	3	1,526	73%	384	240	902	59%	43%
Utilities System Operator II (To become Seniors Utility Operator)	2080	254	93	41	44	1,648	79%	240	240	1,168	71%	56%
Utilities System Operator I (To become Utility Operator)	2080	292	133	55	4	1,597	77%	240	240	1,117	70%	54%
Utilities System Operator I (To become Utility Operator)	2080	292	133	55	4	1,597	77%	240	240	1,117	70%	54%
Utility System Maintenance Worker	2080	142	53	109	41	1,734	83%	240	240	1,254	72%	60%
Total	10400	1303	533	367	95	8102	78%	1344	1200	5,558	69%	53%
Average	2080	261	107	73	19	1620	78%	269	240	1112	69%	53%

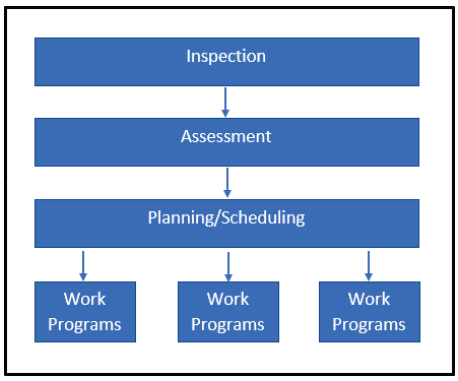
Notes:
1. Time Off = Vacation, Floating Holiday, Holiday, City Manager Granted. Values based on average of actuals from Nov 21 to Nov 22.
2. Sick = Sick Leave. Values based on average of actuals from Nov 21 to Nov 22.
3. Other = Workers Comp, COVID, Jury Duty, Bereavement, Misc Leave, Leave Without Pay. Values based on average of actuals from Nov 21 to Nov 22.
4. CTO = Compensatory Time Off. Values based on average of actuals from Nov 21 to Nov 22.
5. Non-Core = Includes Meetings, Trainings, Vehicle/Equipment/Shop Maintenance, City Events, Etc. Assumes 32 hrs/month for Lead and 20 hrs/month for remaining field staff.

6. Storm Work = Storm related field activities including storm inlet inspection/cleaning, open-channel/V-ditch/detention pond inspection/cleaning/weed abatement, storm patrol and response. Storm line preventive maintenance flushing and CCTV assumed to not occur and not included. Assumed total hours ~1,200 hours/year.

Appendix D: Wastewater Collection System O&M Program Narrative

This Operations and Maintenance program is based on a "maintenance-by-inspection" paradigm. It involves a process of performing inspections, assessing the findings, planning, and scheduling, and taking action to address problems.

1. Inspections are performed to regularly identify maintenance and repair needs.
    a. Pinpoint problems
    b. Produce critical performance data
    c. Ensure maintenance personnel are doing their best
2. Condition Assessments are performed to evaluate inspection findings.
    a. Rate the severity of the findings
    b. Prioritize work to be performed.
    c. Determine best course of action to address problem



3. Planning/Scheduling takes place to:
    a. Identifying the tasks and timelines for completion
    b. Setting goals
    c. Coordinating efforts and resources
    d. Monitoring goals
4. Work Programs are the actions taken to address the problems.
    a. Maintain proper function of assets
    b. Provide a standard process for completing maintenance tasks
    c. Identify staffing and equipment needs Intended outcomes of the O&M Program include:
        i. Ensure proper function of assets
        ii. Maintain or increase the expected life of the assets
        iii. Reduce maintenance costs
        iv. Optimize resources

The work programs are dependent upon consistent and timely inspections and assessments. The inspections and assessments will initially be at prescribed intervals that may be adjusted based on performance. Some Work Programs will be on prescribed schedules while others will be on performance-based schedules, which will vary depending on inspection findings and priorities. This process helps to optimize resources and reduce maintenance costs. Concept: Do only the work that needs to be done and do it when it needs to be done.

Most Work Programs have not yet been established. Initial inspection findings will determine work to be done and programs will grow from this process. For example: As gravity mains are inspected, pipes with

root intrusion are identified and placed into the Root Control Program; Manhole inspections may lead to a Vector Control program. Some Work Programs will be completed by City staff, some by contracted services and others by a combination of the two.

Staff training is included in the O&M program because efficient and safe performance of work is key to the success of the program. The training topics and the time it takes for training are programmed into the Annual Work Plan.

Planning and scheduling are important components of any effective O&M program. Planning is required to identify the tasks that need to be completed and for setting goals to complete the tasks. Scheduling brings specific dates and timelines into the mix.

All utilities field personnel (x18) are cross-trained and perform work across all disciplines. Currently, the work is planned and scheduled by staff that hold the position of Lead Worker (x4). The division of responsibilities are:

1. Sewer / Storm systems
2. Water Operations and Maintenance
3. Dig Crew
4. Field Services

Planning based on a narrow focus is one thing but planning for an entire agency with multiple departments or disciplines can be a challenge. It is significantly more involved to coordinate efforts between multiple supervisors who are coordinating efforts of the same staff. This process is best served by assigning planning and scheduling responsibilities to a single person who can ensure efficient coordination of efforts across all utilities served and help keep staff on the same page, enabling them to stay focused on meeting goals.

The Planner/Scheduler does not have direct reports and the related responsibilities of providing, direction, mentoring, teaching, administering discipline, performance evaluations, etc., which makes it easier to keep focused on the big picture.

An important and valuable component to the O&M program is the annual review of each program.

1. Ensure implementation as prescribed
2. Evaluate goals/effectiveness
3. Solicit operator feedback
4. Update the program as needed
5. Ensure compliance with the State Water Board, 2022 General Waste Discharge Requirements

The Sewer Collection System O&M program is comprised of the individual programs listed below. Each program describes "what to do." Standard Operating procedures describe "how to do it."

Inspection Programs Include:

- CCTV Inspections (Pipes)
- Manhole Inspection
- Lift Station Inspection
- Force Main Inspection

Condition Assessment Programs include:

- Condition Assessment – Pipes
- Condition Assessment – Manholes
- Condition Assessment – Lift Stations

Work Programs include:

- Pipe Repair
- Root Control
- Vector Control
- Gravity Main Cleaning (Hydro-Jetting)
- High Frequency (Hot Spot) Elimination
- Manhole Repair/Rehab.
- Odor Control

- Lift Station Repair/Rehab.
- Lift Station Maintenance
- Air Release Valve Maintenance

(Other) Programs

- Spill Response Program/Customer Service Calls
- Utility Locating (USA North Program)
- Lift Station Emergency Response Program
- Staff Training Program/On Boarding

NOTE 1: The City does not have Easement Maintenance responsibilities.

NOTE 2: The Utilities division is not responsible for Mapping and GIS.

NOTE 3: The Utility Location program includes all utilities owned and operated by the City.