



Mayor – Sandy Sanders

City Administrator – Ray Gosack

City Clerk – Sherri Gard

Board of Directors

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Ward 2 – Andre' Good

Ward 3 – Mike Lorenz

Ward 4 – George Catsavis

At Large Position 5 – Tracy Pennartz

At Large Position 6 – Kevin Settle

At Large Position 7 – Don Hutchings

AGENDA
Fort Smith Board of Directors
STUDY SESSION
February 24, 2015 ~ 12:00 Noon
Fort Smith Public Library Community Room
3201 Rogers Avenue

CALL TO ORDER

1. Update regarding proposed regulations for mobile food trucks ~ *Discussed at the August 12, 2014 study session* ~
2. Discussion regarding wastewater consent decree implementation and sewer rate adjustments
3. Review preliminary agenda for the March 3, 2015 regular meeting

ADJOURN



Memorandum

To: Ray Gosack, City Administrator
From: Wally Bailey, Director of Development Services
Date: February 19, 2015
Subject: Mobile Food Truck Discussion

At the February 24, Board of Directors study session, we will be providing the Board an update on our efforts to prepare regulations regarding the operation of Mobile Food Trucks in the City of Fort Smith. This effort was initiated by a discussion of the Board of Directors regarding mobile food trucks downtown, a goal/policy/action (ED-1.1.1) in the Comprehensive Plan, and the planning staff's difficulty of administering the current regulations.

The current Ordinance allows mobile food trucks in Commercial 2 through 5 and I-1 zoning districts for up to 120-days at a specific location. The truck or trailer must then move unless the Board of Zoning Adjustment (Planning Commission) approves a variance extending the time. The mobile food trucks are not allowed in the C-6 (downtown) zoning district.

The planning staff has been researching ordinances from other communities, recommendations for mobile food truck ordinances from the National League of Cities, and developing a list of the important topics to be covered in a mobile food truck ordinance. The Planning Commission has been provided with this information as well as copies of Ordinances from comparable cities.

The important topics we found in the research include regulations concerning allowable zoning districts, permit expiration, products permitted, permit fees, types of vehicles allowed, relocation requirements, distance from bricks and mortar restaurants, mobile food courts, distance from schools, use of public property/streets, and some special requirements such as signage, tables, chairs, and distance from non-profit events that are selling food and beverage.

In addition to this research, we mailed survey forms to all property owners and restaurant owners located in the Commercial-6 (downtown) zoning district. This is the portion of downtown where mobile food trucks are currently not permitted. It is important for us to gauge the interest and identify any important issues for the downtown as the planning commission and staff proceed with drafting an ordinance. We continue to have surveys trickling into the office. The results of the survey will be presented at the study session. I have also met with the Central Business Improvement District Commission regarding this matter.

A public hearing of the Planning Commission is scheduled for Monday, February 23rd. Information obtained from that public hearing will be presented to the Board at the Tuesday, February 24th study session.

At the study session we will present information regarding the important points of the ordinance to be discussed, the downtown survey results, and information from the Planning Commission public hearing.

Please contact me if you have any questions regarding this subject.

**CITY OF FORT SMITH
MOBILE FOOD VENDING SURVEY**

1. Are you in favor of allowing mobile food vending, such as food trucks and food trailers, to operate in the Downtown Commercial-6 zoning district of the Central Business Improvement District?

YES NO

2. Do you believe that mobile food vendors, such as food trucks or trailers, should be required to maintain a specific distance from established "brick and mortar" restaurants?

YES NO

3. Would you be in favor of allowing mobile food vendors to vend from public parking spaces?

YES NO

4. In the space below, please add any other comments you may have regarding mobile food vending.

5. If you wish to be contacted regarding any future meetings regarding mobile food vending, please provide your contact information below:

Name: _____

Telephone Number: _____

E-mail Address: _____

THANK YOU FOR YOUR PARTICIPATION!

**FORT SMITH PLANNING DEPARTMENT
TELEPHONE: 479-784-2216
E-MAIL: PLANNING@FORTSMITHAR.GOV**



MEMORANDUM

February 20, 2015

TO: Mayor and Board of Directors

FROM: Ray Gosack, City Administrator

SUBJECT: Sanitary Sewer System Improvements

The sanitary sewer system consent decree approved in December sets forth a comprehensive plan for improving Fort Smith's sewer services over the next 12 years. The plan will bring Fort Smith into compliance with the federal Clean Water Act. The two principal elements of the plan are construction work and maintenance capabilities.

Over the last 14 years, Fort Smith has issued nearly \$201 million in sales tax bonds to finance construction work on the sewer system. This work has addressed 80% of the chronic wet weather overflow locations. The use of sales tax bonds has kept sewer rates lower for many years.

The city must now begin developing in-house maintenance capabilities to properly care for the sewer system. These will be recurring expenses that should be financed with an ongoing source of revenue. One-time sources such as sales tax bonds aren't advisable. The best revenue source is sewer user charges. User charges place the costs on the citizens who are using and benefitting from the services.

The utilities staff has worked with Burns & McDonnell Engineers to identify the best organizational structure to meet the consent decree requirements and the recommendations from the efficiency study. The analysis includes staffing, equipment, and facilities needs. The recommended plan is attached. The number of new positions is less than discussed in December.

We must also continue work to assess the condition of the sewer system and undertake needed construction projects. The attached report identifies these needs for the period 2016-2020.

Burns & McDonnell has completed a rate analysis to fund the ongoing operating costs and the capital construction needs through 2017. The next rate analysis would address 2018-2020. We estimate that in 2020, the board will be able to consider using an existing 3/4% sales tax to finance construction costs after 2020. If the sales tax is used, it would keep future rate adjustments lower.

Rate adjustments are never a popular topic. Fort Smith's last utility rate adjustments were made 4 years ago. The upcoming adjustments are less than was anticipated late last year. The city has been diligent in holding the line on rate adjustments. However, rate adjustments are now necessary to bring us into compliance with the Clean Water Act and the consent decree.

A handwritten signature in black ink, appearing to read "Ray", is positioned on the right side of the page. The signature is written in a cursive style with a horizontal line preceding the name.

Attachments

INTER-OFFICE MEMO**TO:** Ray Gosack, City Administrator**DATE:** February 18, 2015**FROM:** Steve Parke, Director of Utilities**SUBJECT:** Rate Recommendations and
Consent Decree Staffing Requirements

At Tuesday's study session, Burns & McDonnell and staff will present information focused on sewer rates for the next three-year period to address bond coverage requirements, capital expenses, operation and maintenance expenses and financial policies. Staffing needed to successfully implement the Consent Decree will also be presented. These items address the department's needs during the first three years of the Consent Decree.

The final Consent Decree presents an aggressive schedule comprising wastewater system improvements along with the development of capacity management operations and maintenance (CMOM) programs. Without question, the Consent Decree presents the city with significant challenges to successfully meet its requirements. The Consent Decree is estimated to cost \$480 million over its 12-year term and results in the addition of 75 positions to the utility department's staffing. However, it is important to note that the initial draft of the Consent Decree which the Department of Justice presented in 2008 was estimated to cost \$1.2 billion over a 10-year term and would have resulted in an additional 140 positions to staff. Over the following six-year period, the negotiation strategies undertaken by staff, city attorney, outside counsel and engineering consultants CDM Smith and RJN Group, provided significant reductions in cost and an increase in time for compliance which resulted in lower staffing levels.

Review of Rate Considerations and Recommendations:

The sewer rate recommendations to be presented are structured to address the Consent Decree costs for 2015, 2016 and 2017, with those costs to be incrementally adjusted across the three-year period. The Consent Decree costs include the planned capital costs and operation and maintenance expenses. The recommended rates are also being structured to address the financial policies as presented to the Board at a previous study session. The sewer rates are designed to fully support the sewer fund.

Final sewer rate analysis is still ongoing and the actual resultant rates are not available to be included with this memo. The proposed rates will be provided before the study session as soon as they become available.

Review of Staffing Needs:

With the finalization of the Consent Decree, staff began the assessment of the Decree's requirements against the utility department's current capabilities. Staffing and equipment needs for the years 2015 through 2017 were developed to identify the needed workforce for accomplishing that work. It is anticipated that no further adjustments to staffing levels would be needed until 2022 when the last of the contracted sewer system assessment work ends and

internal CMOM program for the continuing sewer system assessments takes over that effort.

To assist staff in assuring the appropriateness of its findings, Burns & McDonnell Engineering was retained to provide an independent analysis of staff's work. Burns & McDonnell's team brought together individuals who are currently providing Consent Decree related services to other cities as well as previous experience in the management of wastewater utilities and the provision of contract services related to sewer system assessment and repair. Furthermore, as all of their previous work experience with Fort Smith did not involve our wastewater systems, they could provide an unbiased review of our wastewater operations.

A copy of Burns & McDonnell's Consent Decree Staffing Study is attached for your review. Their report details their careful review of the Consent Decree requirements, engineering and construction deadlines, the timing for development and implementation of CMOM programs, and consequences of noncompliance. Their work utilized the earlier Water and Sewer Operations Efficiency Study performed by HDR Engineering for the board of directors; review of national operational characteristics of industry groups which included the Water Environment Research Foundation (WERF) 2012 Benchmarking for Wastewater Synthesis Report and the National Association of Clean Water Agencies (NACWA) 2011 Financial Survey; and, surveys which they prepared to provide the experience and profile of other utilities. Table 6.1, Preliminary Staffing Recommendations, within the report identifies the need for 75 additional full time positions and their year of hire.

Representatives from Burns & McDonnell and staff will present additional information as part of the study session and to provide more detailed discussion in response to questions. Should you or members of the Board have any questions or desire additional information, please let me know.

attachment

pc: Jeff Dingman



Report on the

Consent Decree Staffing Study



City of Fort Smith, Arkansas

Project No. 82458

February 2015

Consent Decree Staffing Study

prepared for

**City of Fort Smith, Arkansas
Fort Smith, Arkansas**

February 2015

Project No. 82458

prepared by

**Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri**

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INDEX AND CERTIFICATION

Consent Decree Staffing Study

Project No. 82458

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Certification

I hereby certify, as a Professional Engineer in the state of Arkansas, that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by the City of Fort Smith or others without specific verification or adaptation by the Engineer.



Dana Bruner
Dana Bruner, P.E. (Arkansas 16368)

Date: February 20, 2015
(Reproductions are not valid unless signed, dated, and embossed with Engineer's seal)

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1.0 INTRODUCTION

1.1 Purpose

The City of Fort Smith, on behalf of the Utility Department (Utility), has recently entered into a Consent Decree (CD) with the United States Environmental Protection Agency (EPA) and Arkansas Department of Environmental Quality (ADEQ) regarding its sanitary sewer collection system and wastewater treatment. The stated objective of the CD is to achieve and maintain full compliance with the Clean Water Act (CWA) and its regulations, and the Utility's National Pollutant Discharge Elimination System (NPDES) Permits, with a goal of eliminating all sanitary sewer overflows (SSOs). The CD has a twelve year span to achieve all of the stated objectives with additional interim deadlines as defined throughout.

The Utility has estimated the programs and projects required by the CD will total approximately \$397 million (2015 dollars) in capital costs over the next twelve years. This is the largest capital improvements program (CIP) that the Utility has ever undertaken. The CD also requires substantial operation, maintenance, and management activities that are in addition to the Utility's current practice. As a result, the Utility is evaluating additional staffing needed to fully comply with the CD. Burns & McDonnell (BMCD) is providing an independent evaluation of the requirements of the CD and the required staff.

1.2 Scope

The scope of this report includes the following:

- Review of existing organization and staff general work assignments. The purpose of this effort is not to look at the availability of existing staff but rather to understand the existing organizational structure and implications of additional staff.
- Review of internal staffing assessment to understand the key assumptions and methodology behind the preliminary staff projection.
- Review of available requested data. A data request was sent prior to scheduling of the kickoff meeting.
- Research and identification of comparable utilities.
- Analysis of the different work components required by the CD. For each of the components, an estimate was made of the full time equivalents (FTE) and general level of experience of each FTE needed to complete the task. FTE requirements were estimated based on CD performance requirements, existing Fort Smith production rates, other comparable utilities, wastewater and utility staffing assessment surveys and the professional judgment of Burns & McDonnell staff that are experienced in Utility operations.

2.0 CONSENT DECREE REQUIREMENTS

The Utility's CD is comprised of eight articles that detail the required assessments and programs that must be implemented throughout the twelve year duration of the CD. The ninth article outlines the financial circumstances for schedule reconsideration of the CD. This Section of the report will summarize the requirements of the first eight articles.

2.1 Article One: Sewer System Condition Assessment

The Utility must complete Sewer System Assessments (SSAs) for all gravity sewer lines and manholes by December 2022. The first activity that must be completed in each basin and sub-basin is flow monitoring of the discharge from that basin with concurrent rainfall measurements. The Utility may use flow and rainfall data that was gathered during January 2013 and later. In addition to completing all SSA activities by December 2022, it is stipulated that SSAs must be completed on a minimum of 40 miles of sewer per year with 150 miles of sewer being completed by December 2017, and 300 miles by December 2020. It should be noted that while cleaning of the gravity sewer lines is not specifically addressed in the CD requirements for SSA activities, it is necessary to clean the gravity sewer lines prior to completing SSAs for a specific area or basin.

SSAs for all small diameter, less than 24-inches, gravity sewer lines include the following:

- Smoke testing of all gravity lines and tributary private sewer lines;
- Closed circuit television (CCTV) of all non-plastic gravity sewer lines;
- Dyed water testing with concurrent CCTV of all parallel storm sewers proximate and above each pipe segment that test positive from smoke-testing;
- External visual inspection from the public right-of-way during smoke testing of buildings to attempt to ascertain the presence of downspouts and other private property storm water drains that are connected;
- Inspection of all manholes;
- CCTV inspection of all plastic gravity sewer lines constructed prior to 1995 and all other plastic gravity sewer lines where defects are suspected from previous SSA activities;
- All other small-diameter or private service line investigations necessary to locate inflow and infiltration (I/I) sources that contribute to SSOs and/or condition defects.

SSA activities for large-diameter, 24-inches and greater, gravity lines include the following:

- CCTV, 360-degree video, laser imaging or physical entry at Utility's option;
- Inspection of all manholes;

- All other gravity sewer or private service line investigations necessary to locate I/I sources that contribute to SSOs and/or condition defects.

2.2 Article Two: Condition Remedial Measures

The second article of the CD addresses remedial measures that must be undertaken resulting from the findings of SSA activities. Specifically, the Utility must remediate all defects in Basin 12 with a ranking of 4 or 5 – the remedial measures plan must be submitted with or before the first annual report due March 31, 2016, and all defects must be remediated by December 2026. For all other basins, the Remedial Measures Plan for defects ranked 4 or 5 must be submitted with the Annual Report of the second year following the discovery of the defect, and all defects must be remediated within four years of the discovery of the defect.

2.3 Article Three: Pump Station/Force Main Evaluation Report

The Utility has fifteen pump stations classified as Group One that have been reconstructed, are undergoing major reconstruction, are scheduled for reconstruction or were constructed since 2001. The Utility must complete an evaluation report for these pump stations utilizing information from existing engineering reports, contract documents, specifications, and submittals, and operations and maintenance (O&M) manuals.

The Utility has an additional seven pump stations classified as Group Two for which they must complete an evaluation report to determine what repairs or rehabilitation, if any, or if operational and maintenance changes may be warranted. The evaluation must determine the condition, capacity, and/or operating performance of each pump station.

The evaluations of all 22 pump stations must determine the actual firm capacities of each pump station through field measurement, the adequacy of each station's firm capacity to handle peak wet-weather flow conditions anticipated within the next five years, and the ability of maintenance personnel to take corrective actions within the critical response time calculated for each pump station.

The Utility must also perform an evaluation of all force mains, excluding the force main from Pump Station 2 which was done previously. These evaluations must include the normal operating pressure, maximum anticipated pressures which could occur due to pump shut-down or failure, valve failures, the past maintenance records, and visual inspections of the ground surface over the entire length of the force main. The Utility must also provide an inventory listing each force main indicating the pipe material, age or installation date, diameter, length, special corrosion protection measures, if any, and typical flow rates and operating pressures.

In addition to the Pump Station and Force Main Evaluation Reports, the Utility must provide dedicated alternative power supplies at all pump stations no later than December 31, 2018. The Utility has already provided dedicated alternative power supplies at 16 of its 22 pump stations.

2.4 Article Four: Capacity Assessment and Hydraulic Modeling

The Utility has previously undertaken several projects to address wet-weather SSOs in its collection system. Additionally, the Utility has identified five projects that have been included in the Utility's CIP to be completed through 2016. There are also 21 capacity improvements projects that have been identified by the Utility through its past hydraulic modeling evaluations of the collection system.

The CD requires the Utility to update its hydraulic model by December 2015, to further assess any locations where wet-weather SSOs are still expected to occur and identify capacity improvements projects necessary to eliminate wet-weather SSOs from the collection system.

2.5 Article Five: Capacity Remedial Measures Plan

Following the completion of the hydraulic model updates and the Capacity Assessment Report, the Utility must submit a Capacity Remedial Measures Plan to the EPA and ADEQ for review and approval on or before March 31, 2019. This plan must identify which of the 21 previously identified capacity improvements projects it will construct, and what, if any, additional projects it will construct in order to comply with all CWA regulations and eliminate SSOs from its system.

2.6 Article Six: Capacity-Related Remedial Measures Projects Identified in Appendices E1 and E2

The Utility must complete the five projects currently included in the Utility's CIP by the end of the year stated in Appendix E1 of the CD. The Utility must also complete the 21 capacity improvements projects identified in Appendix E2, unless specifically identified as unnecessary through SSA or hydraulic modeling activities by the year identified, or as modified through activities in Articles Four and Five.

2.7 Article Seven: Development of a Capacity, Management, Operation and Maintenance Program

Article Seven of the CD details the development and implementation requirements of a Capacity, Management, Operation and Maintenance (CMOM) Program. This includes the development of a Fats, Oils, and Grease (FOG) Control Program, Root Control Program, Information Management System, and Inventory Management System. It also includes the continuation of gravity sewer line cleaning, SSAs, pump station and force main evaluations, and capacity assurance programs that have been described in

Articles One through Six. The development of the CMOM Program must be completed and submitted to EPA for review and approval by December 2016, or as noted for each of the required Programs described throughout Section 2.7.

2.7.1 FOG Control Program

FOG is one of the leading contributing factors to SSOs, particularly dry weather SSOs. The Utility has determined that approximately 80 percent of its dry weather SSOs are caused in part by FOG, root intrusion, or the combination of FOG and root intrusion in the sanitary sewer collection system. While the Utility has a substantial Industrial Pretreatment Program, it does not currently have a FOG Control Program. As a result, the CD requires the Utility to develop a FOG Control Program for review and approval by the EPA by December 2016. The FOG Control Program must identify all FOG generators, which typically consist of restaurants and other establishments that process foods. The FOG Control Program must include:

1. Standards for the sizing and installation of FOG Control Devices;
2. FOG Control Device management, operations and maintenance standards that address operation, record-keeping requirements, cleaning frequencies, cleaning standards, and disposal of captured FOG;
3. FOG Control Device installation inspection protocols;
4. Periodic unannounced sampling and inspections of all FOG Control Devices. This shall include tiered sampling/inspection frequencies for those FOG generators with higher generation rates and/or a history of FOG violations. The inspection period shall be no less than once every two years;
5. Requirements that FOG generators keep records regarding transportation, storage, and disposal of all collected FOG materials;
6. An enforcement program directed at achieving FOG generator's compliance with the FOG Control Program;
7. A compliance assistance program to facilitate training in the proper operation of FOG Control Devices;
8. A public education program directed at reducing the amount of FOG entering the sanitary sewer collection system from FOG generators and residences, including single and multi-family homes and apartments including:
 - a. Distribution of informational FOG door hangers to residents living upstream of a FOG-related SSO event;
 - b. Annually preparing and distributing FOG information or inserts with sewer bills;

- c. Preparing and maintaining a FOG education information page on the Utility website; and
 - d. Implementing the most appropriate method of educating high density residential dwelling occupants of the impacts of FOG on the sewer system.
9. Demonstration that industrial users that generate FOG are adequately monitored and inspected to confirm that industrial users comply with their pre-treatment permits;
 10. Coordination by the Utility to confirm that all FOG generators and industrial pretreatment participants are monitored; and
 11. Establish performance indicators that will be used by the Utility to measure the effectiveness of the FOG Control Program.

2.7.2 Root Control Program

As mentioned in the previous section, root intrusion is a leading contributor to SSOs. As is the case with FOG, the Utility currently does not have a Root Control Program. Therefore, the Utility must develop a Root Control Program for review and approval of the EPA by December 2015. The Root Control Program must include, at a minimum:

1. Methods for identifying when roots are a contributing cause of an SSO and a reactive plan to address the contributing root intrusion;
2. A plan for proactively preventing root intrusion through chemical or physical means, particularly in areas where root intrusions have been identified in the past;
3. A plan for repairing or replacing sewer lines that have been damaged by roots; and
4. A plan for notifying private property owners when root intrusion in a private service line has been identified as a cause of an SSO.

2.7.3 Gravity Sewer Line Cleaning

The Utility must develop a Gravity Sewer Line Cleaning Program and submit to EPA for review and approval by December 2015. Cleaning activities must commence at a regular frequency as defined in the Program following the SSA activities that must be completed by the end of 2022. The Cleaning Program must address the removal of FOG, debris, roots, and other obstructions that may contribute to SSOs. The Cleaning Program must include:

1. Targeted Sewer Cleaning: The Utility must continue cleaning areas of the collection system with recurring SSOs. The Utility currently has about 15 miles of gravity sewer lines that are on weekly, bi-weekly, or monthly cleaning schedules.

2. **Small-Diameter Gravity Sewer Cleaning:** The Utility must implement a system-wide proactive cleaning program requiring cleaning of the entire system once every eight years, and at a minimum must clean ten percent of the system in any given year. This averages 59.4 miles every year.
3. **Large-Diameter Gravity Sewer Cleaning:** The Utility must clean all large-diameter once every ten years, or approximately 2.5 miles per year.

2.7.4 Continuing Sewer System Assessment (CSSA) Program

The Utility must submit its program by December 2016. The CSSA Program shall commence after the completion of SSA activities performed according to Article One of the CD. The CSSA Program must include, at a minimum:

1. CCTV of all non-plastic small-diameter gravity sewer lines every twelve years;
2. CCTV of all plastic small-diameter, fully CIPP-lined non-plastic small-diameter, and all large diameter gravity sewer lines once every 20 years; and
3. Visual inspection of all manholes every eight years, approximately 1,505 manholes per year.

2.7.5 Continuing Pump Station and Force Main Evaluation and Maintenance Program

The Utility must submit its Continuing Pump Station and Force Main Evaluation and Preventative Maintenance Program by December 2016. This program must be conducted at least once every five years beginning in 2023. The program must include, at a minimum:

1. Continuing evaluation of Pump Station performance and capacity;
2. Daily inspection and record keeping for Pump Stations greater than 5 MGD;
3. Twice weekly inspection and record keeping for Pump Stations less than 5 MGD;
4. Records must be incorporated into the Utility's Information Management System (IMS);
5. Development of an Emergency Pump Station Operations Program;
6. Establish standard procedures for monitoring performance and schedules preventative maintenance and equipment replacement;
7. Evaluation of dry-weather and wet-weather Critical Response Times for each Pump Station and the staffing and equipment required to prevent an SSO;
8. Evaluation of the general condition of each Pump Station based upon physical inspection and recent operating/mechanical failure history over not less than the previous three years; and

9. Evaluation of the adequacy of Pump Station design for peak wet-weather flows anticipated within the next five years.

2.7.6 Continuing Capacity Assurance Program

The Utility must submit its plan for Continuing Capacity Assurance (CCA) by December 2016. The CCA Program must be completed once every five years, beginning in 2025. The Program consists of updating the hydraulic model for capacity and remedial measures improvements. The Utility is to utilize the Pump Station and Force Main Evaluation results and anticipated population growth for the next ten years, as well as any history of SSOs and citizen complaints.

2.7.7 SSO Reporting

The Utility must submit its plan for SSO documentation and reporting to ADEQ and EPA for approval by December 2015. The Utility must report all SSOs within the system using ADEQ's online reporting system within 24 hours of becoming aware of the SSO event as well as continuing to provide monthly discharge monitoring reports (DMRs) to the EPA and submitting a yearly report summarizing all SSOs for that calendar year.

2.7.8 SSO Emergency Response Program

The Utility must submit its Overflow Emergency Response Program (OERP) for approval by December 2015. The goal of the OERP is respond to SSOs as rapidly as possible, mitigate the human health and environmental impacts, prevent SSOs, and result in timely reporting. The OERP must include:

1. Methodology for estimating the volume of SSOs;
2. Methodology for notifying the public or government agency, when applicable, of an SSO occurrence;
3. Descriptions of steps to minimize the volume and duration of an SSO;
4. Descriptions of the Utility's follow-up process for SSO cleanup;
5. Description of Utility's efforts to determine the cause of an SSO no later than seven days following the cessation of an SSO event;
6. Response procedures for SSOs that occur at Pump Stations or Force Mains;
7. Maintenance of SSO records on all SSOs for a minimum of ten years after the occurrence; and
8. A detailed plan for the Utility's response to a building or private property backup.

2.7.9 Information Management System

The Utility's CMOM must include enhancements to its Information Management System (IMS) in an effort to comply with the objections of the CD primarily eliminating SSOs. The Utility must submit its plan for modifying its IMS by December 2016, and functionally complete the integration of the work order system and its geographical information system (GIS) with the IMS by December 2019. The IMS must be capable of the following:

1. Service requests;
2. Customer complaints;
3. Work orders by location and type of work;
4. CMOM related investigations;
5. SSAs; and
6. Private service line defects, repairs, and enforcement.

Once fully functional, the Utility's IMS can be utilized for tracking and producing information required for annual reporting purposes.

2.7.10 Standard Operating Procedures

The Utility must provide a plan and schedule for creating standard operating procedures (SOPs) for general operation and maintenance (O&M) of all components of the collection system and submit its plan for approval by June 2016. This includes: gravity sewers, manholes, pump stations, force mains, and SSA investigation activities.

2.7.11 Private Service Line Defect Remediation Program

The Utility must submit a plan to encourage private service line owners to remediate any defects identified through SSA activities that contribute to I/I or SSOs by December 2016. The program must include:

1. Establish legal authority to require owners to take appropriate action in remediating defects in private service line contributing to I/I;
2. Escalating notification process and penalty system to encourage owner to remediate defects including the right to discontinue sewer/water service for failure to comply; and
3. Requirement that remediation of defects be required within 30 months after the discovery of the defect.

2.7.12 Comprehensive Training Program

The Utility must submit its plan for a Comprehensive Training Program by June 2016. The program must be focused on technical and skills training for operations and maintenance personnel for the purpose of responding to and preventing SSOs. Training may include: sewer cleaning, FOG inspection, collection system inspection, collection system repair, replacement and rehabilitation techniques, data collection, information management, reporting and record keeping necessary to implement the Utility's CMOM Program.

2.7.13 Inventory Management System

The CMOM Program must include an Inventory Management System for all spare parts and equipment components required for the prevention of SSOs and continued operational viability of collection and treatment systems. The Utility must submit a written demonstration of its completed Inventory Management System by December 2016. The Inventory Management System must include:

1. Tracking spare parts usage, prioritizing spare parts purchase and stockpiling, and generating reports on spare parts inventory control;
2. System for vehicle and fleet preventative maintenance and replacement that maximizes the availability of Utility vehicles and equipment for collection system operation and maintenance activities; and
3. Listing of sources for rental and loaner vehicles and equipment available for Utility use during times of emergency or when Utility vehicles and/or equipment are out of service.

2.8 Article Eight: Assessment and Remediation Plan for Effluent Limit Exceedances at the Massard WWTP and P Street WWTP

The Utility experienced exceedances of its NPDES Permits at the Massard and P Street Wastewater Treatment Plants (WWTPs) from 2011 through June 2014. The Utility is to identify the root cause of the exceedances and determine and implement the appropriate remedial measures to correct the exceedances. The remedial action plan for each WWTP must be submitted to EPA and ADEQ for review and comment by June 2016. The Utility must then implement all operational changes identified in the remedial action plans no later than six months after submission of the plans, and complete any recommended remedial actions at the P Street WWTP and any interim remedial actions at the Massard WWTP within two years after submission of the plan, and no later than June 2018. Any long term remedial actions required at the Massard WWTP to meet NPDES permit limits must be completed by December 2021.

3.0 LEGAL IMPLICATIONS

The Utility has operated under some form of enforcement action, consent order, and administrative order for more than 30 years, and thus has a long history with ADEQ regarding compliance with the Clean Water Act. While the Utility has been in the process of negotiating the current CD for more than eight years, it has taken meaningful steps to address its wet-weather capacity issues. Despite these efforts, the Utility still experiences approximately 200 SSO occurrences each year, and typical preventative maintenance such as root control and FOG programs have not been implemented. The approved CD requires a substantial increase in the amount of reinvestment in the system, with capital improvements valued in 2015 dollars at \$397 million. As described in Section 2.0, CMOM and administrative program requirements include several functions that are new or substantially different from current Utility operations.

The CD is an enforceable legal document that the Utility has entered into and has been lodged with the United States District Court of Arkansas. This agreement includes stipulated penalties for failing to complete the various tasks set forth in the CD and as previously summarized. Table 3.1 illustrates the various levels of fines for the different components of the CD ranging from \$500 per day to \$12,000 per day. Perhaps the largest and most impactful fine is the failure to submit a complete Annual Report on time, as the fine begins at \$2,000 per day and escalates to \$12,000 per day. Additionally, the same fine applies to incomplete or missing items from the Annual Report, and is applied on a per component basis. As the Annual Report compiles a minimum of eleven separate task items, the total fine can be range from \$22,000 per day to \$132,000 per day.

Table 3.1 also illustrates the fines for continued SSOs in the Utility's collection system. If the Utility continues to experience approximately 150 SSO events each year, this fine can range from \$52,500 to \$75,000 per year depending on the impact of the SSO.

The risk in failing to comply in whole or in part with the requirements of the CD can be quite costly for the Utility, ranging from thousands of dollars to several million dollars each year. If the Utility continually fails to comply with the requirements of the CD, the regulatory agencies may seek further enforcement actions or litigation.

Table 3.1: Summary of Stipulated Penalties

Stipulated Penalty	1st to 30th Day	31st to 60th Day	61st Day and Beyond
Failure to Submit Timely and/or Complete Deliverables	\$500	\$1,250	\$2,000
Failure to Submit Annual Report	\$2,000	\$6,000	\$12,000
Failure to Submit a Required Component of the Annual Report (each Component)	\$2,000	\$6,000	\$12,000
Failure to Meet Deadline for Completion of Remedial Requirements (per Appendix E1 and E2, or as E2 is revised)	\$750	\$1,500	\$3,000
Failing to Meet Mileage Targets for SSA Activities in Accordance with Article One	\$1,000	\$2,000	\$3,500
Failure to Timely Meet SEP Requirements	\$500	\$1,000	\$2,000
	Calendar Years 2015-2020	Calendar Years 2021-2025	Calendar Years 2026 and Beyond
SSOs that Reach Water of the United States or Arkansas	\$500	\$1,500	\$3,000
SSOs that Do Not Reach Waters of the United States or Arkansas	\$350	\$750	\$1,500
Failure to Timely and/or Completely Report SSOs	\$2,000		
Exceeding NPDES Weekly Effluent Limits ²	\$1,000		
Exceeding NPDES Monthly Effluent Limits ²	\$1,000		

Notes:

1. All Penalties are per Violation per Day, except as otherwise noted.
2. NPDES Effluent Permit Violations are per Violation per Week or per Month, as appropriate.

4.0 EXISTING UTILITY PROFILE

The Utility provides both water and wastewater service, with some staff directly dedicated to either water or wastewater duties, while others perform tasks in support of both utilities. The Utility evaluates the allocation of its personnel between water and wastewater operations periodically and recently completed the analysis for 2014.

4.1 Efficiency Study

In February 2013 HDR Engineering completed the “Water and Sewer Operations Efficiency Study” (Efficiency Study). The Efficiency Study determined the Utility is generally well managed and operated and found no areas where significant and immediate cost savings could be realized. The Efficiency Study identified a number of areas with deficiencies as compared to best utility management practices including:

1. Staff engineers are overloaded and insufficient in numbers to manage current and pending projects;
2. Succession planning of key management positions has not been completed;
3. Asset management system cannot function properly without a larger emphasis on data collection and entry;
4. CMOM program appears to be understaffed;
5. CMOM program is lacking FOG and root control programs;
6. CMOM program is lacking preventative and routine maintenance and cleaning, existing maintenance staff is consumed with targeted cleaning and mitigation of SSOs;
7. The GIS system does not have enough resources to be developed and maintained to integrate with the Utility’s Lucity system for general O&M of the Utility;
8. The Utility is generally providing good customer service; however, staffing is insufficient to handle the quantity and diversity of customer calls; and most importantly
9. The Utility appears to be significantly under-funding the maintenance and capital improvements financed with rates.

Following the completion of the Efficiency Study, the Utility has continued to operate at its existing capacity.

The Board and Staff are to be commended for undertaking the Efficiency Study because it sets a base line as to the Utilities’ current position. By understanding the current strong and weak areas of any organization, resources then can be distributed to improve the overall operation and efficiency of the

organization. It is important to note that the Efficiency Study's conclusions were based on Utility operations prior to signing the CD.

The CD greatly increases the quantity, quality, and complexity of utility management and operations. To date the Utility has agreed to additional work but has not assigned the resources to accomplish the goal. Annual capital improvements are increasing from an average of approximately \$12 million per year to \$30 million annually. The Utility is undertaking over a dozen additional operation and maintenance work assignments. And all of this done with an aggressive schedule and reporting complexities, backed by substantial fines for non-compliance.

4.2 Treatment Plant Review

The 2014 average wastewater flows measured at both the "P" Street and Massard WWTPs are 7.6 MGD and 7.3 MGD, respectively, with peak flows exceeding 30.0 MGD and 19.7 MGD. These flows include wastewater collected from the nearby City of Arkoma, Oklahoma. The treatment system had higher than normal violations at the treatment plants according to the Efficiency Study. A review of monthly NPDES compliance reports suggests performance improvements at the WWTPs, although weather can influence these results. In 2014 there were only five effluent violations recorded at the Massard WWTP related to ammonia and zero violations recorded at the P Street WWTP. The current NPDES permits for the Utility's WWTPs have warm weather ammonia limits and do not have nutrient limits, only requiring monitoring and reporting, for total nitrogen or phosphorus. As the NPDES permits are renewed in 2017 and 2020, more stringent permit limits may be established and enforced.

4.3 Collection System Review

The Utility currently operates and maintains approximately 549 miles of sanitary sewers. This includes 500 miles of gravity sewer, 49 miles of forcemain, 22 lift stations and 12,040 manholes. The Utility currently owns sewer maintenance and repair equipment to perform reactive and targeted sewer cleaning, televising of sewer mains and remediation repairs for sewer mains and manholes. The Utility currently does not perform any routine and preventative system wide maintenance or cleaning.

Recently, the Utility has identified up to 1,300 commercial customers that may be considered as FOG generators. Although, the Utility currently does not have an official FOG Program to address these generators, they do have an established industrial pretreatment program with 38 participants.

As previously mentioned, the Utility currently has 22 lift stations. Each lift station is routinely inspected on a daily basis.

Over the past year, the Utility has recorded 176 dry weather sanitary sewer overflows (SSOs), down from 310 in 2010 and 240 in 2011 as presented in the Efficiency Study. This decrease may be in part to the rehabilitation projects that the Utility has been performing, as well as, the cleaning of the sewer mains as part of the on-going sanitary sewer assessment program.

4.4 Existing Deficiencies prior to the Consent Decree

As previously stated, the Utility is experiencing substantial peak wet weather flows at the WWTPs, as well as sanitary sewer overflows within the collection system during dry weather conditions. This is an indication of both wet weather flows entering the system as well as maintenance items, such as debris, roots and grease in sewer mains that should be addressed in the collection system.

Based on the requirements of the CD, the Utility must develop and implement a gravity sewer line cleaning program, continue their on-going sewer assessment, pump station and force main evaluation, maintenance programs, and develop a FOG program. Following these initial projects, the Utility will be required to continue their programs as part of the CMOM requirements. It is anticipated that with the SSA's and the increased routine maintenance efforts, additional repairs will be identified and remediated as required as part of Article Two. Table 4.1 provides a comparison of current annual operations of the Utility to the CD and CMOM requirements.

Table 4.1: Summary of Sewer Maintenance Practices and CMOM Requirements

	Current Practices	CMOM
Routine Cleaning of Sewers	0	60 miles annually
Routine Television Inspection of Sewers	0	45 miles annually
Targeted Cleaning	15 miles	15 miles
Routine Manhole Inspections	0	1,500 manholes annually
FOG Inspections	0	650 annually

4.5 Information Management

The Utility began using the Lucity program in 2005 as its Work Management System software. Lucity has the ability to integrate with the Utility's GIS information to track its assets, condition of those assets, work order status, customer complaints, aged work orders, and inventory of spare parts. The Utility has not been able to capitalize on the full potential of the Lucity software and is primarily using it for the generation of work orders for water and sewer line maintenance. The Efficiency Study recognized that the Utility does not have an existing GIS database and additional staff resources would be required to convert the Utility's existing methods of managing utility data in AutoCAD to an ESRI GIS based data management system.

5.0 REVIEW OF STAFFING NEEDS

5.1 General Approach

Staffing needs were evaluated through a combination of techniques, including the following:

- A review of the Utility's assumptions regarding level of effort;
- A review of national surveys;
- A small survey of other utilities;
- Production rates for certain activities; and
- The professional judgment and experience of Burns & McDonnell.

Research was conducted to understand how other utilities may have been impacted by consent decrees based on two approaches. The first approach included a review of national operational characteristics compiled by industry groups, and included reports from the Water Environment Research Foundation (WERF) 2014 Utility Benchmarking for Wastewater Synthesis Report and the National Association of Clean Water Agencies (NACWA) 2011 Financial Survey. The second approach included research into the experience and profile of ten other utilities, five of which participated with varying degrees of survey responses. The surveyed cities included combined water and wastewater utilities as well as dedicated wastewater-only utilities that are under a consent decree or other form of administrative order regarding sewer system performance and compliance. During the review of participant responses, it became apparent that each utility and its circumstances are unique, and this is especially true regarding the depth and breadth of adopted consent decrees.

The uniqueness of CDs creates issues in comparing operating measures either to national survey reports such as WERF or NACWA or to individual cities. In general, the scope and implementation timeframe of the Utility's CD differs from surveyed utilities. These differences also make comparisons to the WERF and NACWA survey reports more challenging due to the wide variability of consent decrees and the reality that some utilities in the national surveys are not currently subject to such orders.

As the Utility is preparing to develop and implement all of the programs and requirements of the CD, it must first evaluate its capacity to perform and manage the tasks. The tasks required by the CD vary from actions that must be taken one time (such as initial SSA evaluations) to tasks that must be repeated and maintained beyond the twelve year term of the CD. As a general strategy, the Utility is intending to contract the majority of the work that is a one-time component of the CD, while it plans to add staff and resources to perform those items that will continue following the twelve years of the CD period. This

strategy is appropriate in that efforts and costs that need only be performed one time lend themselves well to be served by outside consultants and contractors, while efforts and costs that must be regularly performed are more suitable to permanent staff.

The primary components that will continue after the completion of the CD period are those tasks described in Article Seven relating to the CMOM Program and include both direct labor and administrative support. The CMOM Program focuses on routine cleaning, maintenance, and rehabilitation of the Utility's sanitary sewer collection and treatment systems in order to continue compliance with all CWA regulations. As previously stated in this report, the Utility currently does not perform much of the expected proactive and routine maintenance for a collection system. In agreeing to the CD, the Utility must perform this work throughout the duration of the CD and thereafter.

5.2 FOG Program

The Utility has placed a high priority on developing and implementing a FOG Program by December 2015 as opposed to the December 2016 CD deadline. The Utility believes it can greatly reduce the number of future SSOs, and the risk of resulting fines, by implementing a successful FOG Program quickly. The Utility has estimated there are between 900 and 1,300 FOG generators based on a sampling of its commercial customer base. As previously described, the FOG Program requires periodic inspection of all FOG control devices at least once every two years. Additional focus must be placed on FOG generators who have a history of noncompliance. These "higher risk" FOG generators require more frequent inspections based on the severity of the situation, which may require inspection intervals as frequent as monthly. Thus at a minimum, the Utility must visually inspect 650 FOG control devices per year. In addition to the inspection component of the program, the Utility has significant public education, record keeping, and reporting components.

Based on our review from the surveyed utilities, a single FOG inspection including review of paperwork and disposal records is estimated to take two to three hours. Based on approximately 235 working days per year, where one day per week is dedicated to administrative duties and four days for inspections, and two FOG inspections per day, four full-time inspectors are estimated to be required. Administrative duties included in this program require coordination and planning, additional lab testing, record keeping and analysis, and additional actions such as upstream outreach for every future SSO resulting from FOG. Based on the potential to reduce the likelihood of future SSOs, the experience of surveyed communities, and our professional judgment, a total staffing need of seven full-time equivalents (FTEs) is recommended, to include one FOG Coordinator, four FOG inspectors, one lab analyst, and one supervisor.

5.3 Root Control Program

Root control is a specialized technique, and as such, the Utility plans to continue contracting the required root control as part of its continuing CMOM efforts.

5.4 Gravity Sewer Line Cleaning

As discussed previously, the Utility is not currently able to perform any routine proactive cleaning with existing staff and resources; however, the Utility performs targeted cleaning and reactive cleaning resulting from SSOs in the most problematic sewersheds. Following the completion of the initial SSA activities performed by December 2022, the Utility must implement a routine cleaning program resulting in cleaning of the entire 500 miles of the collection system every eight years in addition to the targeted cleaning program. This program interval results in approximately 60 miles of sewer per year of additional routine cleaning that must be performed. It is assumed that the Utility's existing cleaning crews continues to perform its targeted cleaning, but that additional cleaning crews will be required to perform the 60 miles of routine cleaning. Generally speaking, cleaning production rates of approximately 57 miles per crew per year are anticipated, reflecting 235 working days per year, fifteen percent equipment downtime and weather days, and 1,500 feet per day of cleaning. As a result the Utility will need one additional cleaning crew of two FTEs and one jet/vacuum combination truck to perform the cleaning required by the CMOM Program. As the initial round of SSAs are completed, the Utility may discover additional areas where more frequent cleaning is needed to reduce the risk of continued SSOs, which has the potential to increase the workload on the existing and proposed crews.

5.5 Continuing Sewer System Assessment Program

As part of the Continuing SSA efforts, the Utility is required to CCTV all non-plastic small diameter gravity sewer lines every twelve years, and all large diameter gravity sewer lines and plastic small diameter gravity sewer lines once every 20 years – based on the characteristics of the Utility's system, this equates to approximately 40 miles of CCTV per year. Additionally the Utility must visually inspect all manholes on an eight year cycle, or approximately 1,505 manholes per year. Burns & McDonnell believes the majority of manhole inspections can be performed in conjunction with routing sewer cleaning and CCTV activities. The Utility currently has one existing CCTV crew that primarily responds to the Utility's problem areas and does not have a routine proactive CCTV program. This reactive crew currently achieves about 16 miles per year. Efficiency can be improved for proactive rather than reactive CCTV functions, and as such Burns & McDonnell believes production rates of a CCTV crew may average approximately 35 miles per year, reflecting 235 working days per year, fifteen percent downtime and weather days, and 900 feet per day of CCTV. In order to achieve the 40 miles of proactive CCTV per

year, the Utility will need one additional CCTV crew of 2 FTEs and an additional CCTV truck. The CCTV crews will work in conjunction with the new jet cleaning crew recommended in Section 5.5 for cleaning of the sewer mains prior to CCTV activities. It is possible that as the collection system is improved throughout the course of the CD and the CMOM Program is implemented, the additional five miles per year may be absorbed by the Utility's existing CCTV crew. It is also possible the Utility's existing crew and one additional CCTV crew may not be able to complete 40 miles of CCTV per year. Therefore, it may be necessary to supplement these crews with contractors for the remaining miles.

5.6 Continuing Pump Station and Force Main Evaluation and Maintenance Program

The primary goal of the Continuing Pump Station and Force Main Evaluation and Maintenance Program is to improve maintenance and performance of the pump stations thereby reducing SSOs. The Utility's current maintenance personnel are responsible for the Pump Stations as well as the WWTPs. An increased maintenance effort at the pump stations, coupled with the need for continued and improved WWTP compliance will also affect staffing levels. As the Utility has been working to address and eliminate wet weather SSOs, several remote holding basins have been constructed within the collection system. Additionally, standby generators or alternative power sources have been added at the pump stations, as well as new high rate treatment trains at the P Street WWTP. In doing so, the Utility has added numerous new assets that it must now maintain, which has been absorbed to date by existing maintenance staff. The Programs required by Article Eight and the Continuing Pump Station Maintenance Program will result in additional routine and preventative maintenance of the Utility's 22 Pump Stations along with continued efforts at the WWTPs. Burns & McDonnell conservatively estimates this could amount to an increased workload of about 40 percent. There are currently sixteen mechanics and electricians/controls FTEs dedicated to the sewer facilities. If required maintenance increases by approximately 40 percent, incremental resources amounting to six additional FTEs are recommended.

5.7 Continuing Capacity Assurance Program

The Utility plans to continue contracting the updates to its hydraulic model as required by the Continuing Capacity Assurance Program.

5.8 SSO Emergency Response Program

The Utility currently has two backhoe crews dedicated to reactive remediation repairs of the collection system and one backhoe crew dedicated to new services, totaling eleven FTEs. As the SSA activities progress, system defects will be identified and ranked in severity of 1 through 5, with 5 being most severe. The Utility is obligated under the CD to remediate all rated 4 and 5 defects, which will create

additional work for the backhoe crews. Additionally, the Utility must provide improved emergency response to future SSO occurrences requiring investigation of the cause of the SSO within seven days of the occurrence. Typical investigation procedures include CCTV and cleaning of the area surrounding the SSO. The Utility currently has a significant backlog in addressing its known defects, with approximately 160 outstanding work orders. In order to catch up on the existing backlog, and address the newly found defects two additional backhoe crews totaling eight FTEs are recommended. Failure to comply timely with emergency SSO responses or 4- and 5-rated defect remediation exposes the Utility to penalties ranging up to \$3,000 per occurrence.

5.9 Information Management System

As the Utility makes the transitions to its Information Management System that will be required to comply with the CD, there are two primary stages in staffing. The first stage is the initial system and data setup phases. This phase requires a large staffing effort, and is an opportunity for contract support as there are a number of tasks that are one-time tasks or processes that will not need to be consistently repeated during the overall operations and maintenance of the systems and do not require long term staffing within the Utility. It is critical for the Utility to bring on key technology staff during the initial system setup so that they may participate in the system design and implementation process. It is estimated that up to three FTEs of contract support may be necessary during the system development and implementation phase.

Following the initial system development phase, the Utility must manage and continue to update its GIS and IMS in accordance with the CD and CMOM Programs. The IMS is capable of assisting the Utility in managing its service requests, customer complaints, work orders, CMOM related investigations, SSAs, private service line defects, and overall system assets. Based on Burns & McDonnell's experience, four FTEs will be needed to edit and manage the Utility's GIS while three additional FTEs will be needed to manage the work order system of the IMS.

5.10 Private Service Line Defect Remediation Program

The Utility must establish a Private Service Line Defect Remediation Program. Responsibilities will include program management, public outreach and communication, and management of the Supplemental Environmental Program (SEP) funds that are available to assist low income customers with service line repairs. All elements of this program represent an entirely new service that the Utility does not currently provide. Based on our professional judgment, Burns & McDonnell anticipates program implementation and ongoing management to require a minimum of two FTEs, including one program coordinator to

manage the SEP fund and enforcement of the program, and a construction inspector to confirm proper remediation of the defects.

5.11 Comprehensive Training Program

The Utility currently has one FTE dedicated to the Utility's Training and Safety Program. The increased training and reporting requirements required by the CMOM Program will require additional staffing to comply with the CD. Additionally, as the Utility's O&M staff grows to meet the cleaning, sewer inspections, repair, and rehabilitation, the number of staff that must continually be trained will also increase. Based on our experience, it is reasonable to assume two additional resources will be required to implement and manage the Comprehensive Training Program, including one FTE to manage the program and one FTE to support the program and the reporting requirements.

5.12 Inventory Management System

The Utility must implement a new Inventory Management System for its existing fleet, equipment, and spare parts. As previously discussed, the Utility's fleet and equipment must increase in order to comply with requirements of the CMOM Program and the overall objective of the CD to eliminate the occurrence of SSOs. Burns & McDonnell understands the City's internal auditor has expressed concerns over the unstaffed remote store location and has requested improvements to the Utility's current Inventory Management System and recommends the system to act as a point of sale to prevent the loss of spare parts and equipment. Based on the additional requirements of the CD, an additional three FTEs may be required to maintain the Inventory Management System. Two of these additional resources would be directed to the Utility's central warehouse to both improve controls and accommodate additional parts resulting from CD activities. The remaining FTE is intended to address similar issues at remote sites.

5.13 Additional Operations and Maintenance Requirements

In addition to the explicit responsibilities required by the CD and CMOM Programs previously discussed, the Utility must provide additional support to its growing O&M programs.

5.13.1 Garage Maintenance

One of these functions is the O&M of its fleet vehicles and large equipment such as the backhoes, cleaning vehicle and CCTV trucks. The additional O&M of the collection system results in expanding the fleet and large equipment by nearly 40 percent. In order to support these vehicles, it is reasonable to assume the capacity of its garage maintenance staff must also increase accordingly, resulting in one additional FTE.

5.13.2 WWTP Operations

Currently, the Massard and P Street WWTPs have a shared supervisor. These two WWTPs are on opposite ends of town, and have a team of twelve to fifteen FTEs at each facility. Burns & McDonnell believes one supervisor for both WWTPs and 27 FTEs creates operational risk, and can contribute to difficulties achieving NPDES compliance. The addition of a dedicated supervisor at the Massard WWTP is expected to lead to higher productivity and improved compliance, reducing the fines paid by the Utility, and ultimately the rate-payers, on an annual basis.

5.13.3 Site Restoration

The Utility currently contracts site restoration such as seeding, sodding, and fence repair when Utility personnel make defect repairs within the utility easement. The Utility receives complaints that site restoration does not happen in a timely fashion and some repairs are not satisfactory. Performing this task in house allows the Utility to improve its control of the timeline and quality with which site restoration is performed. As CD activities and SSAs progress, the number of defects that must be remediated will increase greatly, requiring site restoration beyond the Utility's current capabilities. It is expected that two additional FTEs may be required to improve existing site restoration performance and meet the increased demand for site restoration resulting from CD repairs. The staffing required for site restoration is not likely immediate and should be evaluated as CD activities commence in order to balance the costs of performing site restoration in-house compared to the Utility's current practice of contracting this function.

5.13.4 Traffic Safety

The Utility currently handles traffic safety, including barricades, signs, flashing signs, and other equipment, separately from its cleaning, CCTV, and defect remediation crews. As CMOM Programs begin, the frequency of activities requiring traffic safety will increase. Additionally, the Utility must expand its public safety protection during and following an SSO event. With these additional responsibilities, it is estimated that one additional FTE be dedicated to the Utility's traffic safety staff.

5.13.5 Operations Management and Clerical Support

As O&M staff increases to address CD requirements, additional management and clerical support will be required. Typical span of control for municipal water and wastewater utilities ranges from 3:1 to 10:1 depending on the type of activities in various departments. An overall average of 5:1 or 6:1 is generally anticipated. Based on the additional O&M staff recommended to comply with the CD, Burns & McDonnell estimates an additional three managers/supervisors will be needed to properly manage and oversee additional staff. It is also reasonable to assume additional clerical staff will be needed to support

the expanded organization, although opportunities may exist for clerical staff to support more than one department or division. One to two FTEs may be adequate in this regard, and can be evaluated over time.

5.14 Engineering and Planning

The Utility currently has approximately 2.5 FTEs dedicated to Engineering and Planning for the wastewater functions of the Utility, this includes the Utility's project management responsibilities as well as information management staff. In the past three years, the Utility capital projects have ranged from \$12 to \$23 million per year that must be managed by the engineering staff. The Utility will now be undertaking approximately \$30 million annually in capital projects as a result of the CD. As identified in the Efficiency Study, the Utility's existing engineering staff does not have the capacity to manage its existing capital projects. It is typical for a project engineer to manage \$7 to \$8 million in annual capital projects, depending on the quantity of projects; several small projects totaling \$7 to \$8 million requires more management time than one or two larger projects of the same total value. In order to manage the \$30 million in capital projects, a total of five engineers are needed. The Utility currently has approximately two FTEs dedicated to managing capital projects, resulting in a net need of three engineers and an additional engineering tech to support the projects and confirm survey information. Additionally, as with the higher management staff, the Utility's senior project engineer is expected to retire within the next five years making the necessity for adding engineering staff early in the CD period an even greater necessity.

The Utility adopts water and gravity sewer lines constructed as part of development within the City. Currently, there is no method for inspection of the water and gravity sewer lines prior to incorporation into the Utility's system, introducing the risk of subpar assets being transferred to the Utility that in turn must now be maintained by the Utility. Adding construction inspectors to the Utility's staff will help eliminate the incorporation of subpar assets that contribute to maintenance items and potential SSOs. Additionally, the Utility typically contracts construction inspection duties for its capital projects. With the number of smaller capital projects focused on remediation of sanitary sewer defects and capacity improvements as part of the CD, it is likely not practical or cost effective to contract all construction inspection duties. The addition of two to three FTEs for construction inspection of ongoing development and capital improvements projects will enable the Utility to control the quality of its assets and reduce future maintenance needs.

The Utility has a property manager that works with property owners when acquiring easements as well as managing the Utility's rental properties and recreation areas at the Lee Creek Reservoir. The Utility is currently supplementing its efforts with contract help. As the SSA work gets underway and additional

defect remediation is required, access to right-of-way and easements will increase, resulting in the need for an additional FTE dedicated to easements and right-of-way analysis.

Based on the additional engineering staff recommended to comply with the CD, Burns & McDonnell estimates one additional manager will be needed to properly manage and oversee additional staff. It is also reasonable to assume additional clerical staff will be needed to support the expanded organization, although opportunities may exist for clerical staff to support more than one department or division. One FTE may be adequate in this regard, and can be evaluated over time.

5.15 Higher Management and Administration

The CD and CMOM Program requirements previously discussed in Section 5.2 resulted in a recommendation of an additional 35 FTEs that are dedicated to specific CMOM Programs and are primarily O&M positions and 14 FTEs for the Engineering and Planning department. Along with the O&M requirements, there will be significant requirements for management, engineering, and administrative positions to handle the additional workload. The Efficiency Study identified several areas of administrative positions that are currently understaffed. Additionally, the WERF Benchmark provides a breakdown of typical wastewater utility staffing for management, administrative, engineering, O&M, and laboratory positions. Table 5.1 compares the typical distribution of wastewater utility staff by category according to the WERF Benchmark and the existing breakdown of the Utility's wastewater staff. As shown in Table 5.1, nearly 80 percent of existing staff is dedicated to O&M compared to approximately 50 percent according to the WERF Benchmark average profile. Additionally the maximum O&M percentage reported by a wastewater utility included in the WERF Benchmark was approximately 67 percent of its staff. Findings from the Efficiency Study and our experience with other utilities indicates O&M activities currently performed by the sewer utility are highly reactive, with little to no proactive maintenance being performed. Despite the relatively heavy weighting to operating personnel in the Utility's current structure, O&M resources are not adequate to meet current and future CD requirements. The WERF Benchmark data also suggests the Utility is currently understaffed in its management, administration, and engineering positions.

Table 5.1: WERF Benchmark Staff Breakdown

WERF Resource Allocation		Current Utility	
Staffing Category	Average	FTE	% of Total
Higher Mgmt and Administration	34.9%	9.5	9.7%
Engineering & Planning	9.7%	2.5	2.5%
O&M	50.6%	78.0	79.3%
Lab	4.8%	8.3	8.4%
Total Staff	100.0%	98.3	100.0%

The WERF Benchmark classifies Higher Management as “directors, central administration, strategic planning, marketing and communications, legal affairs, environmental management, and business development.” Administration includes, but is not limited to, human resources, finance, customer service, training, occupational safety, and public outreach/education. According to the WERF Benchmark profile, nearly 35 percent of utility resources are typically allocated to these functions.

Some municipal utilities receive support and service for higher management and administrative functions from other city departments, and the Utility is served in this manner with respect to legal and finance functions, among others. As such, the WERF Benchmark data should not be interpreted as prescriptive regarding the need for additional higher management and administrative staff at the Utility. However, it does provide meaningful context, as it is estimated less than 10 percent of the current Utility staff are allocated to higher management and administrative functions.

An additional concern is that the Utility’s current senior leadership team is approaching retirement age with no apparent succession planning in place. The Utility is bearing some risk in its ability to manage succession planning with the relatively lean higher management leadership team.

The following recommendations regarding higher management and administration are offered to implement the CD and address succession management risks:

- Five FTE dedicated to higher management positions. These positions include three deputy directors and two administrative/clerical support staff. These positions will provide strategic management and oversight for both legacy and new sewer utility operations.
- Two FTE for public outreach. As the Utility begins the vast number of programs and sewer investigations, public outreach and education can go a long way in teaching the community about aspects of the program that may be new, and at times alarming, such as smoke testing and dye testing of the sewer system. Other components of the CD and CMOM detail very clear public

outreach requirements such as the FOG Program and Private Service Line Defect Remediation Program. The Utility recently conducted a customer satisfaction survey in which 97.4 percent of the 472 respondents provided a satisfactory service rating for the Utility's sanitary sewer service. The addition of two dedicated public outreach staff will be a key component of maintaining that level of satisfaction throughout the duration of the CD.

- Nine FTE for finance, customer service, clerical and other duties. These positions include two business finance positions which will provide financial planning, four positions supporting the Utility's customer service call center and SCADA activities, two managers and one shared clerical position.

5.16 Summary and Benchmark Comparison

Burns & McDonnell recommends a total staffing increase of 75 FTEs to support the CD and CMOM Programs. Table 5.2 summarizes these recommendations and compares them to the existing Utility organization and the WERF Benchmark. Overall the distribution of resources in the proposed Utility organization aligns more closely with the WERF average than the existing organization.

Table 5.2: BMcD Staff Recommendation Summary

WERF Resource Allocation		Current Utility		BMcD Evaluation		
Staffing Category	Average	FTE	% of Total	FTE Add	Total FTE	% of Total
Higher Mgmt and Administration	34.9%	9.5	9.7%	26.0	35.5	20.5%
Engineering & Planning	9.7%	2.5	2.5%	14.0	16.5	9.5%
O&M	50.6%	78.0	79.3%	28.0	106.0	61.2%
Lab	4.8%	8.3	8.4%	7.0	15.3	8.8%
Total Staff	100.0%	98.3	100.0%	75.0	173.3	100.0%

The additional 75 FTEs have been estimated based on a number of methods reflecting the complete implementation of all programs. Burns & McDonnell does not anticipate that all 75 staff are needed in year one. Staff phasing recommendations are presented in Section 6.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The CD requires the largest CIP undertaken in Utility history, totaling approximately \$397 million (2015 dollars). The Utility must develop and implement a significant CMOM Program requiring substantial operation, maintenance, and management activities that far exceed the Utility's current practice. The CMOM Program requires continuous O&M activities that do not end at the conclusion of the 12 year implementation period. The Utility and Burns & McDonnell have evaluated the various tasks required by the CD and CMOM Programs to estimate staffing levels necessary to achieve milestones that meet CD guidelines and minimize the risk of non-compliance and penalties. Staffing levels were estimated based on a review of the Utility's assumptions regarding level of effort, a review of national surveys, a small survey of other utilities, production rates for certain activities; and the professional judgment and experience of Burns & McDonnell.

While the Utility plans to supplement its existing resources with consultants and contractors to perform the one-time requirements of the CD, it plans to bring on additional staff necessary to perform the continuing tasks of the CD and CMOM Programs. Several circumstances make the initial phase of the CD very critical, including the wide variety of new programs that must be developed and implemented, a substantial improvement required of the Utility's information management systems and capabilities, extensive reporting requirements, and the risk associated with managing through extensive organizational change. Additionally, the potential loss of substantial institutional knowledge and experience due to retirements may further compound the Utility's challenge to implement the CD requirements.

The CD is an enforceable legal document with stipulated penalties for failing to complete its requirements in a timely fashion. The short implementation period, breadth of required new programs and activities, and risk of penalties for non-compliance lends itself to cautious estimates to mitigate the risk of failure. There are many unknowns that could be encountered as programs are developed and implemented, and as assets are evaluated and conditions are determined, that could have a significant impact on workloads estimated and judgments made herein. The Utility must continually evaluate its ability to comply with the CD deliverables and deadlines.

As noted at the conclusion of Section 5, Burns & McDonnell believes the full staffing need of 75 incremental FTE may be phased in over time as programs are developed and prepared for execution. Table 6.1 summarizes the staffing needs by position/function previously described in this report. It also stages the staffing recommendations in a three year phased hiring approach. 2015 represents the initial development and implementation of the various CMOM Programs and CD requirements. 2016 includes

additional staffing to continue executing the programs once they have matured beyond initial development and implementation. 2017 represents additional staffing that should be evaluated as needed to meet all of the compliance requirements and timelines.

The phasing recommendations have taken into account several key factors in successfully achieving the goals and requirements of the CD, including:

- The Utility must get its key leadership in place to initiate programs with critical positions engaged at program inception.
- The Efficiency Study previously identified deficiencies in high risk compliance areas such as FOG, SSO emergency response, and routine and preventative cleaning and maintenance of the collection system.
- Program development and submission deadlines ranging from the first December 2015 to December 2016.
- There is a significant financial risk to the Utility and its rate-payers for failing to provide the resources necessary to comply with the CD, with individual fines ranging from \$500 per day to \$12,000 per day.

Table 6.1: Staffing Recommendations

	<u>Total FTEs</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Higher Management (Division 0)	5	5	-	-
<u>ADMIN (Divisions 1 & 2)</u>				
<u>Division 1: Business & Finance</u>				
Administrative Coordinator	1	1	-	-
Division Manager	1	1	-	-
Inventory Management	3	1	2	-
Business/Finance	2	1	1	-
Information Management System	3	3	-	-
Division 1 Subtotal	10	7	3	-
<u>Division 2: Communications & Training</u>				
Division Manager	1	1	-	-
Private Service Line Defect Remediation Program	2	1	1	-
Public Outreach/Education	2	2	-	-
Training / Safety	2	-	2	-
SCADA/Call Center	4	3	1	-
Division 2 Subtotal	11	7	4	-

Table 6.1 Cont: Staffing Recommendations

<u>Engineering/Engineering Technology (Division 3)</u>	<u>Total FTEs</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
GIS	4	2	2	-
Engineers	4	1	1	2
Construction Inspection	3	1	1	1
Division Manager	1	1	-	-
Administrative Coordinator	1	1	-	-
Right Of Way	1	-	1	-
Division 3 Subtotal	14	6	5	3
<u>O&M (Divisions 4, 6 & 8)</u>				
<u>Division 4: Water and Sewer Treatment Operations</u>				
Massard WWTP Supervisor	1	1	-	-
<u>Division 6: Fleet, Building & Station Maintenance</u>				
Mechanic/Electrician/Controls Maintenance	6	5	-	1
Garage Mechanic	1	-	1	-
Division Manager	1	1	-	-
Division 6 Subtotal	8	6	1	1
<u>Division 8: Sewer System Maintenance</u>				
Traffic Safety	1	1	-	-
Site Restoration	2	-	-	2
Cleaning	2	-	2	-
CCTV	2	-	2	-
Backhoe	9	5	4	-
Manager/Supervisor	2	2	-	-
Accounting Tech	1	1	-	-
Division 8 Subtotal	19	9	8	2
<u>Lab (Division 5)</u>				
FOG Inspectors	4	1	1	2
FOG Coordinator	1	1	-	-
Supervisor	1	1	-	-
Lab Analyst	1	1	-	-
Division 5 Subtotal	7	4	1	2
Total Staffing Needs (FTEs)	75	45	22	8

The phased staffing recommendations in Table 6.1 are initial estimates and the Utility should reevaluate its staffing needs every year throughout the CD. Continuing to evaluate the staffing needs will help the Utility to position itself for a successful CMOM Program and compliance with the CD.



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