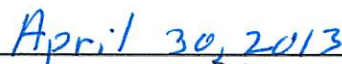


City of Memphis

Semi-Annual Report October 1, 2012 through March 31, 2013

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


Bobby D. Allen, P.E.


Date

Section 1

Introduction

On September 20, 2012, the United States District Court for the Western District of Tennessee entered a Consent Decree between the City of Memphis (the City) and the United States, the State of Tennessee, and the Tennessee Clean Water Network.

To fulfill the reporting requirements defined in Paragraph VIII.25. of the Consent Decree, the City has prepared this Semi-Annual Report, which includes the following information:

- A description of projects and activities completed and milestones achieved during the previous six month period pursuant to the requirements of the Consent Decree.
- A summary of significant projects and activities anticipated to be performed, and milestones anticipated to be achieved, in the next six month period pursuant to the requirements of the Consent Decree.
- Any additional information determined to be appropriate to demonstrate implementation of the remedial actions required under the Consent Decree.

This report is organized into four sections:

- **Section 1** provides an introduction.
- **Section 2** documents recent progress and anticipated continuing activities related to development and implementation of the Management, Operations, and Maintenance (MOM) Programs noted in the Consent Decree.
- **Section 3** identifies recent progress and anticipated continuing activities related to the Priority Rehabilitation Projects noted in the Consent Decree.
- **Section 4** provides a summary of additional actions that the City has recently completed and anticipates completing over the next six months to maintain compliance with the Consent Decree.

Section 2

Management, Operations, and Maintenance Programs

As defined in Paragraph V.10 of the Consent Decree, the City shall develop and implement specific MOM Programs. These MOM Programs are listed below along with a summary of activities completed in the previous six months and activities anticipated to be performed during the upcoming six months. A chart showing the status of compliance is presented as **Figure 2-1**. All MOM Programs activities are currently in compliance.

2.1 Sewer Overflow Response Plan

Activities Completed During This Reporting Period

The City submitted a Sewer Overflow Response Plan (SORP) to the U.S. Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation (TDEC) on March 11, 2011, before the Consent Decree was entered. A copy of the SORP is included in Appendix B of the Consent Decree. During this reporting period, the City continued to operate under the processes described in the SORP.

Activities Anticipated to be Performed During the Next Reporting Period

The City will continue to operate under the approved SORP. The City will review the SORP to determine if any changes are necessary.

2.2 Fats, Oil, and Grease Management Program

Activities Completed During This Reporting Period

The City submitted an updated Fats, Oil, and Grease (FOG) Management Program to EPA and TDEC on March 11, 2011, before the Consent Decree was entered. A copy of the FOG Management Program is included in Appendix C of the Consent Decree. During this reporting period, the City continued to operate under the processes described in the FOG Management Program.

Activities Anticipated to be Performed During the Next Reporting Period

The City will continue to operate under the approved FOG Management Program.

2.3 Lift Station and Force Main O&M Program

Activities Completed During This Reporting Period

The City, in conjunction with CDM Smith Inc., began development of the Lift Station and Force Main Operations and Maintenance (O&M) Program, as required in Paragraph V.10.c of the Consent Decree. The City also completed the installation of Supervisory Control and Data Acquisition (SCADA) systems at all active lift stations identified in Appendix D of the Consent Decree.

**Figure 2-1
MOM Programs Progress**

Program	CD Reference	CD Milestone	Progress Last Six Months						Anticipated Activities Next Six Months					
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Sewer Overflow Response Program	V.10.a	-	Previously submitted. Memphis is implementing.											
Fats, Oils, and Grease Management Program	V.10.b	-	Previously submitted. Memphis is implementing.											
Lift Station & Force Main O&M Program	V.10.c	9/20/2013	Under development						Will be completed and submitted to EPA and TDEC on or before 9/20/13					
SCADA installation at lift stations	V.10.c.iii	3/19/2013	Completed Prior to Milestone Date											
Gravity Sewer System O&M Program	V.10.d	9/20/2013	Under development						Will be completed and submitted to EPA and TDEC on or before 9/20/13					
Inter-Jurisdictional Agreement Program	V.10.e	3/19/2013	Submitted on 3/18/2013											
Continuing Sewer Assessment Program	V.10.f	9/20/2013	Under development						Will be completed and submitted to EPA and TDEC on or before 9/20/13					
Infrastructure Rehabilitation Program	V.10.g	Within 180 days of EPA approval of CSAP	Under development						Development will continue					

Activities Anticipated to be Performed During the Next Reporting Period

During the upcoming reporting period, it is anticipated that the Lift Station and Force Main O&M Program will be completed, and the document will be submitted to the Public Documents Repository (PDR) for a 30-day public comment period. Upon addressing any public comments, it is anticipated that the document will be submitted to EPA and TDEC for review on or before the Consent Decree milestone.

2.4 Gravity Sewer System O&M Program

Activities Completed During This Reporting Period

The City, in conjunction with CDM Smith, began development of the Gravity Sewer System O&M Program, as required in Paragraph V.10.d of the Consent Decree.

Activities Anticipated to be Performed During the Next Reporting Period

During the upcoming reporting period, it is anticipated that the Gravity Sewer O&M Program will be completed, and the document will be submitted to the PDR for a 30-day public comment period. Upon addressing any public comments, it is anticipated that the document will be submitted to EPA and TDEC for review on or before the Consent Decree milestone.

2.5 Inter-Jurisdictional Agreement Program

Activities Completed During This Reporting Period

As provided for in Paragraph V.10.e of the Consent Decree, the City submitted the Inter-Jurisdictional Agreement Program (IJAP) to the PDR for public comment on February 12, 2013. No comments were received, and the IJAP was subsequently submitted to EPA and TDEC for review on March 18, 2013. As this was the first submission of a MOM program element under the Consent Decree, the City did not have an established process in place yet regarding the PDR and various versions of the documents. The only change to the public noticed IJAP to that submitted to EPA/TDEC was a change in the header from “Feb. 11, 2013, Draft: Subject to Public Comment” to “Pursuant to ¶10(e) of the Consent Decree.” This was the start of implementing an approach, should it be necessary, to distinguish between differing substantive versions. Such approach turned out to be unnecessary in this instance. Also, on April 18, 2013, the City included a copy of the document submitted to EPA and TDEC in the PDR and sent notice to TCWN regarding the document availability in the PDR.

Activities Anticipated to be Performed During the Next Reporting Period

It is anticipated during the next reporting period that EPA, after consultation with TDEC, will provide the City comments on the IJAP or approve the IJAP as submitted. Section 14 of the Consent Decree generally envisions up to a 120-day period for EPA comments on deliverables. The City will respond to comments received from EPA, if any, and will revise the IJAP, as appropriate. Once approved, the City will follow the IJAP for new agreements and renewal of existing agreements related to the collection, conveyance, and treatment of sewage by the City from municipal satellite sewer systems.

2.6 Continuing Sewer Assessment Program

Activities Completed During This Reporting Period

The City, in conjunction with CDM Smith, began development of the Continuing Sewer Assessment Program (CSAP), as required in Paragraph V.10.f of the Consent Decree.

Activities Anticipated to be Performed During the Next Reporting Period

During the upcoming reporting period, it is anticipated that the CSAP will be completed, and the document will be submitted to the PDR for a 30-day public comment period. Upon addressing any public comments, it is anticipated that it will be submitted to EPA and TDEC for review on or before the Consent Decree milestone.

2.7 Infrastructure Rehabilitation Program

Activities Completed During This Reporting Period

The City, in conjunction with CDM Smith, began preliminary activities to support the development of the Infrastructure Rehabilitation Program (IRP), as required in Paragraph V.10.g of the Consent Decree.

Activities Anticipated to be Performed During the Next Reporting Period

During the next reporting period, it is anticipated that preliminary work on the IRP will continue. It is anticipated that this program will not be submitted to the PDR, EPA, or TDEC until after EPA approval of the CSAP.

Section 3

Priority Rehabilitation Projects

As defined in Paragraph V.11 of the Consent Decree, the City shall complete various Priority Rehabilitation Projects. These projects are listed below along with a summary of activities completed in the previous six months and activities anticipated to be performed during the upcoming six months. A chart showing the status of compliance is presented as **Figure 3-1**. All Priority Rehabilitation Project activities are currently in compliance with some of the critical infrastructure area projects significantly ahead of schedule.

3.1 Priority Areas Projects

Activities Completed During This Reporting Period

Paragraph V.11.a of the Consent Decree identifies several areas of the City's wastewater collection and transmission system (WCTS) that should be assessed during the first and second years following approval of the CSAP. These areas are shown in Appendix E and F of the Consent Decree, respectively. Additionally, a subset of those areas, as shown in Appendix G of the Consent Decree, is identified as a priority during implementation of the IRP.

Because work in these priority areas is tied to approval of the CSAP and IRP, no activities have been completed. It is anticipated that, consistent with the terms of the Consent Decree, assessment of the areas shown in Appendix E and F of the Consent Decree will be completed during the first and second years, respectively, following approval of the CSAP. It is further anticipated, consistent with the terms of the Consent Decree, that rehabilitation projects within the areas shown in Appendix G of the Consent Decree shall be completed within six years and seven months after EPA's approval of the IRP. Additional compliance dates are shown on Figure 3-1.

Activities Anticipated to be Performed During the Next Reporting Period

During the upcoming reporting period, it is anticipated that the City's program management team will initiate discussions with firms qualified to conduct assessment activities and that condition assessment activities will begin in a portion of the area shown in Appendix E of the Consent Decree. This condition assessment work is anticipated to serve as a pilot area to test the procedures being established through the CSAP.

3.2 Critical Infrastructure Areas Projects

Activities Completed During This Reporting Period

As discussed in Paragraph V.11.b of the Consent Decree, three areas within the WCTS were identified to receive prioritized rehabilitation due to the critical nature of the infrastructure and the potential consequences of large SSO volumes in the event of a failure. A map showing the locations of these areas is included as Appendix H of the Consent Decree.

Figure 3-1
Priority Rehabilitation Projects Progress

Project	CD Reference	CD Milestone	Progress Last Six Months						Anticipated Activities Next Six Months					
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Priority Area Projects	V.11.a													
Assess areas identified in Appendix E		Within one year of EPA approval of CSAP	No work this period						Pilot assessment area will be selected to test procedures in draft CSAP.					
Prioritize areas identified in Appendix G		Via implementation of IRP	No work this period						No work anticipated. Areas will be prioritized during final development of the IRP.					
Complete Appendix G rehabilitation projects		Six years and seven months after EPA approval of IRP	No work this period						No work anticipated until approval of the IRP					
Interim Priority Areas Project Report		Within 27 months of EPA approval of IRP	No work this period						No work anticipated until IRP has been approved and rehabilitation projects are underway					
Final Priority Areas Project Report		Within six months of rehabilitation projects completion	No work this period						No work anticipated until rehabilitation projects are complete					
Critical Infrastructure Areas Projects	V.11.b													
Complete Appendix H rehabilitation projects		9/20/2017	Rehabilitation completed in First and Third Critical Areas						No work anticipated					
Final Critical Areas Project Report		Within six months of rehabilitation projects completion	No work this period						No work anticipated until rehabilitation projects are complete					
Prior Assessment Areas Projects	V.11.c													
		9/20/2016	Nonconnah Interceptor was rehabilitated, and 31 of 64 manholes were rehabilitated from Buchart-Horn study						Rehabilitate remaining manholes from Buchart-Horn study					

Rehabilitation work has been completed in two of those areas significantly ahead of schedule. The first critical area, which included approximately 1,000 linear feet of the 42- to 48-inch Wolf River Interceptor, was rehabilitated via cured-in-place pipe (CIPP). This project was completed in August 2012. The third critical area, which included approximately 540 linear feet of the 84-inch interceptor located where McLean Boulevard crosses the Wolf River and Interstate 40, was also rehabilitated via CIPP. This project was completed in November 2012.

Activities Anticipated to be Performed During the Next Reporting Period

No additional activities are anticipated to be completed during the upcoming reporting period. It is anticipated that work associated with the second critical area, which is a portion of the 96-inch interceptor at the entrance/exit ramp located at mile 51 of Interstate 240, will be completed in compliance with the timeframe established in the Consent Decree.

3.3 Prior Assessment Areas Projects

Activities Completed During This Reporting Period

As discussed in Paragraph V.11.c of the Consent Decree, four additional rehabilitation projects have been identified based on previous inspection and assessment activities to be completed within four years from the effective date of the Consent Decree.

The work described in Paragraph V.11.c.(i) was completed in November 2012. This included rehabilitation of approximately 4,000 feet of the Nonconnah Interceptor between manholes N06-119 and N06-127 via CIPP.

A portion of the work described in Paragraph V.11.c.(iii) has also been completed. The 64 manholes identified for rehabilitation in the June 6, 2006 Buchart-Horn study report were divided into two project groups. Of the 32 manholes in the first group, 31 were rehabilitated during the reporting period.

Activities Anticipated to be Performed During the Next Reporting Period

During the upcoming reporting period, it is anticipated that the remaining manhole in the first project group will be rehabilitated. Additionally, it is anticipated that plans and specifications will be completed, and bid packages prepared to solicit bidders to rehabilitate the remaining 32 manholes, as discussed in Paragraph V.11.c.(iii).

Work associated with the remaining activities is anticipated to be completed within the timeframes established in the Consent Decree.

Section 4

Additional Measures to Maintain Compliance

In addition to the projects and activities described in the previous sections, the measures described below are related to the City's ongoing Consent Decree compliance.

4.1 M.C. Stiles WWTP Foam Study and Outfall Improvements

As described in Paragraph V.12 of the Consent Decree, the City is required to implement the M.C. Stiles Wastewater Treatment Plant (WWTP) Foam Study and Outfall Improvements Work Plan that was included as Appendix I of the Consent Decree.

Activities Completed During This Reporting Period

During the reporting period, the City contracted with CDM Smith to design modifications to the WWTP outfall that will reduce foam. During the past six months, design activities were initiated.

Activities Anticipated to be Performed During the Next Reporting Period

It is anticipated that design activities will continue during the upcoming reporting period.

4.2 State Projects

As described in Appendix J of the Consent Decree, the City is required to implement two state projects. Activities associated with these projects are described in the following subsections.

4.2.1 State Project A – Color Study

As described in Appendix J of the Consent Decree, the City is required to undertake a color study to assist TDEC in the development of a numerical color permit limit.

Activities Completed During This Reporting Period

The City has entered into a contract with the University of Memphis to conduct the color study. The plan of study was submitted to TDEC on September 14, 2012, and approval from TDEC was obtained on September 19, 2012. The University began implementing the study during this reporting period.

Activities Anticipated to be Performed During the Next Reporting Period

It is anticipated that the study will continue to be implemented during the upcoming reporting period.

4.2.2 State Project B – Geographic Information System

As described in Appendix J of the Consent Decree, the City will begin implementing the transition of its sanitary sewer record information, primarily on paper maps, into an electronic Geographic Information System (GIS).

Activities Completed During This Reporting Period

During the reporting period, the City has continued discussions with the University of Memphis Center for Partnerships in Geographic Information Systems regarding the conversion of the City's

sewer records into a GIS. Prior to lodging of the Consent Decree, basic information associated with the initial assessment areas, shown as Appendix E of the Consent Decree, was converted from paper maps into GIS.

Activities Anticipated to be Performed During the Next Reporting Period

During the next reporting period, it is anticipated that the City will continue discussions with the University of Memphis Center for Partnerships in Geographic Information Systems regarding the GIS data for the WCTS. It is also anticipated that the preliminary GIS data for the Appendix E area will be reviewed and updated to conform with the nomenclature and standards of the GIS being developed by the University of Memphis. Additional activities associated with the data conversion are anticipated to begin once the program management team, led by Black & Veatch, is in place.

4.3 Program Administration Activities

Since entering into the Consent Decree, the City has conducted several administrative activities to prepare for the implementation of the Consent Decree program.

Activities Completed During This Reporting Period

- Elected officials and employees whose duties might reasonably include compliance with the Consent Decree were notified via electronic mail that a copy of the Consent Decree is available on the City's website.
- The PDR for program documents was established. This includes a publicly-accessible website (<http://www.memphistn.gov/Government/PublicWorks/ConsentDecree.aspx>) and the City of Memphis Public library located at 3030 Poplar Avenue.
- The City negotiated a contract with Black & Veatch to serve as the overall program and construction manager for Consent Decree implementation.

Activities Anticipated to be Performed During the Next Reporting Period

- The contract between the City and Black & Veatch for program and construction management is expected to be executed.
- It is expected that Black & Veatch will engage a firm to conduct initial field assessment work, which may include smoke testing, manhole inspections, dye studies, and CCTV inspections. However, this work is not required until approval of the CSAP is obtained.
- The City plans to develop a minority/woman business enterprise (MWBE) program to train MWBEs and encourage their participation in the Consent Decree program.

4.4 Snowden Assessment and Rehabilitation

Although not required by the Consent Decree (except to the extent that there is some minor overlap with the Appendix E and Appendix F areas), the City is undertaking assessment and rehabilitation work in the Snowden area.

Activities Completed During This Reporting Period

The City engaged Jacobs Engineering Group, Inc. to conduct an assessment of the Snowden sanitary sewer system. Approximately 87,400 linear feet of pipe were assessed by closed-circuit television (CCTV) inspection and approximately 251 manholes were inspected during the summer and fall of

2011. Based upon the results of this assessment, recommendations for repair and rehabilitation were identified in this area, including approximately 56 point repairs, 64,500 linear feet of CIPP lining, 7,700 linear feet of sewer replacement via pipe bursting, additional CCTV inspection, manhole rehabilitation, and replacement of some service connections to the property line.

In December 2012, the City contracted with a sewer assessment/rehabilitation company to complete the recommended rehabilitation work, which has continued throughout the reporting period.

Activities Anticipated to be Performed During the Next Reporting Period

The rehabilitation work in the Snowden area is anticipated to continue during the upcoming reporting period.