

# KANSAS CITY WATER SERVICES OVERFLOW CONTROL PROGRAM

## 2014 SEMI-ANNUAL REPORT

*Reporting Period: January 1, 2014 through June 30, 2014*

## SEMI-ANNUAL REPORT

*Reporting Period: January 1, 2014 through June 30, 2014*

September 30, 2014

To the reader:

Please find enclosed the fourth semi-annual report related to Kansas City's Overflow Control Program. This report covers the semi-annual period from January 1, 2014 to June 30, 2014. Pursuant to the Consent Decree, this report has a required submittal date no later than September 30, 2014.

Additionally, and as required by the Consent Decree, any report, plan, or other submission that the City is required to submit, including reports, plans or other submissions as required by its Current NPDES Permits, shall be signed and certified by an official or authorized agent of the City.

By signing below, I certify under penalty of law that the document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted, and that 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.

Thank you for your participation and cooperation in this important program. If you have any questions, please contact the undersigned at (816) 513-0203.

Sincerely,

Terry Leeds

Director, Kansas City Water Services

cc: Troy Schulte, City Manager, City of Kansas City, Missouri  
Matthew J. Gigliotti, Assistant City Attorney, City of Kansas City, Missouri

## TABLE OF CONTENTS

I.	SEMI-ANNUAL REPORT PURPOSE AND SCOPE.....	4
II.	KANSAS CITY'S OVERFLOW CONTROL PROGRAM.....	4
III.	KANSAS CITY'S SEWER SYSTEM .....	5
IV.	REPORTING PERIOD ACTIVITIES .....	5
V.	PUBLIC OUTREACH .....	6
VI.	IMPLEMENTATION OF SEWER SYSTEM REMEDIAL MEASURES.....	7
VII.	COMBINED SEWER OVERFLOW CONTROL MEASURES – APPENDIX A.....	9
VIII.	SEPARATE SEWER OVERFLOW CONTROL MEASURES – APPENDIX A.....	14
IX.	SCHEDULED ACTIVITY FOR THE NEXT REPORTING PERIOD.....	17

## I. SEMI-ANNUAL REPORT PURPOSE AND SCOPE

On September 27, 2010, *U.S. vs. The City of Kansas City, Missouri - Consent Decree - Clean Water Act*, and its associated appendices went into effect. This Semi-Annual Report is submitted in accordance with Section IX.A. of the Consent Decree which states that Kansas City is required to submit this document to the Missouri Department of Natural Resources (MDNR), U.S. Department of Justice, and U.S. Environmental Protection Agency (USEPA). The report reflects the status of program implementation that has occurred between January 1, 2014 and June 30, 2014.

Pursuant to the Consent Decree, the Semi-Annual Report and Annual Report differ in content. While the Annual Report is used to update the regulatory agencies on all Consent Decree activity, this Semi-Annual Report only provides an update on the City's efforts to implement the Control Measures defined in Section VII and Appendix A of the Consent Decree.

## II. KANSAS CITY'S OVERFLOW CONTROL PROGRAM

Individual elements of the Overflow Control Program (OCP) became part of an enforceable document with the entry of a Consent Decree in United States District Court. The Consent Decree is a culmination of nearly a decade of negotiation between the City, USEPA and MDNR related to reducing overflows. The Consent Decree includes requirements targeted at capital construction, management, operations and maintenance of the City's sewer systems.

Kansas City's OCP was developed to reduce overflows from the combined sewer systems and prevent overflows from the separate sewer systems. The City and its regulatory partners have agreed to meet those objectives over a 25-year time period from 2010 through 2035. A planned list of improvements will be completed that target capturing for treatment 88 percent of combined sewer flows and eliminating sanitary sewer overflows during a five-year 24-hour rainfall event.

The discharge of combined sewer overflows is not uncommon in combined sewer systems and is authorized pursuant to the terms of a National Pollutant Discharge Elimination System (NPDES) permit. This permit is issued by MDNR to Kansas City and implemented by the Water Services Department.

Consent Decree components include:

- Capital Projects targeted at reducing overflows through Combined Sewer Overflow (CSO) Control Measures and Separate Sewer Overflow (SSO) Control Measures;
- Nine Minimum Controls Plan targeted at operationally reducing and addressing combined sewer overflows through a series of minimum control efforts;
- Capacity Management Operation and Maintenance Plan targeted at reducing separate sewer overflows by adequately operating and maintaining the sewer system;
- Post Construction Monitoring Plan targeted at long-term monitoring and assessment of overflow reduction;
- Supplemental Environmental Project targeted at reducing septic system use in the sewered area; and
- Installation of disinfection technology at wastewater treatment plants.

### III. KANSAS CITY'S SEWER SYSTEM

More than 150 years ago Kansas City began building the basic sewer infrastructure that would allow the city to grow and prosper. Some of that infrastructure is still in use today.

Kansas City's overall sanitary sewer system comprises both combined and separate sewer systems totaling approximately 318 square miles. The combined sewer system consists of 58 square miles, primarily located in the oldest areas of the City. The combined sewer systems are not capable of carrying the large amounts of rainwater that run off from the urban landscape. During moderate to heavy rainfall events, the system will reach capacity, overflow, and discharge a mixture of wastewater and rainwater directly to the receiving streams and rivers. By implementing Control Measures in accordance with Kansas City's Consent Decree, these overflows will be reduced over time.

The remaining 260 square miles of Kansas City's sanitary sewer system are a separate system. A separate sanitary sewer system collects and conveys only wastewater. However, rainwater can enter the system through pipe joints, broken pipes, manholes, and unpermitted direct connections causing the system to overload during rainfall events. When this system exceeds its capacity, it too overflows a mixture of wastewater and rainwater. Kansas City does have one constructed sanitary sewer overflow (SSO) which will be eliminated as part of the Overflow Control Program.

### IV. REPORTING PERIOD ACTIVITIES

The following specific milestones, as laid forth in Consent Decree Appendices A and D were met during the reporting period from January 1, 2014 through June 30, 2014. In addition to these milestones, Water Services submitted the 2013 Annual Report to USEPA and MDNR on March 28, 2014. Work also continued on several other projects which began in previous reporting periods, including the continuation of inflow/infiltration reduction activities in areas north and south of the Missouri River.

#### a. Appendix A – Performance Measures

##### **Brush Creek Basin**

- Neighborhood Sewer Rehabilitation
  - Consent Decree Required Start Date- 2017
  - Actual Start Date – 2014

##### **Middle Blue River Basin**

- Sewer Consolidation Outfall 063
  - Consent Decree Required Start Date- 2016
  - Actual Start Date – 2014
- Sewer Separation: Outfall 067
  - Consent Decree Required Start Date- 2016

- Actual Start Date – 2014

#### **Northeast Industrial District**

- Sewer Separation: Diversion Structure 006
  - Consent Decree Required Start Date- 2016
  - Actual Start Date – 2013
- Green Infrastructure Pilot Project
  - Conceptual Proposal Due to USEPA – December 31, 2014

#### **Turkey Creek/Central Industrial District**

- In-line Gates at Santa Fe Pump Station (Storm Drainage Improvements)
  - Consent Decree Required Start Date- 2016
  - Actual Start Date – May 2014
- Green Infrastructure Pilot Project
  - Conceptual Proposal Due to USEPA – December 31, 2014

### **b. Appendix D – Post Construction Monitoring Program**

- Implement Flow Monitoring Program for the outfalls listed below. The Consent Decree required implementation date of 2014 was achieved with an actual implementation date of March 2014.
  - Outfall BR063 (2 flow meters)
  - Outfall BR066
  - Outfall BR067
  - Outfall BR031
  - Outfall BR076
  - Outfall W003
  - Outfall W002

## **V. PUBLIC OUTREACH**

A brief overview of public outreach activities for OCP is provided below for activities completed between January 1 and June 30, 2014.

- Made 22 presentations to more than 500 citizens and stakeholders about OCP.
- Mailed more than 125 letters in the spring of 2014 to neighborhood leaders requesting the opportunity for Water Services to present to their organizations an update on the progress of OCP.

- Conducted four public meetings for two OCP projects, which are discussed in more detail later in this report.
- Participated in and presented at five conferences and workshops to raise awareness of projects in Kansas City.
- Developed eight articles for publication and had 11 news stories about OCP.
- Provided OCP information on the Kansas City Water Services website.

## VI. IMPLEMENTATION OF SEWER SYSTEM REMEDIAL MEASURES

### a. Post-Construction Monitoring Program

#### i. WATER QUALITY TESTING

Since April 2011, Water Services has conducted large river water quality monitoring of the Kansas River and the Missouri River at three locations. Additional sampling and field measurements were conducted by Water Services at 20 locations on Missouri River tributaries, including Brush Creek, Town Fork Creek, Blue River, Penn Valley Lake, Mill Creek, and Indian Creek. Laboratory analyses were conducted by the Water Services laboratory. All sampling and analyses were conducted according to the methods prescribed in the Water Quality Monitoring Program (LimnoTech, December 28, 2010) and the associated Quality Assurance Project Plan (LimnoTech, 2005, revised 2010).

Detailed location, sampling and measurement information for year 2013 was included in the City's annual report submitted to USEPA on March 28, 2014.

#### ii. FLOW MONITORING PROGRAM

##### 1. Short-Term Flow Monitoring

*Middle Blue River Pilot Project:* Flow monitoring was performed in the spring of 2014 to facilitate additional performance evaluation of the completed green infrastructure improvements. This additional monitoring included four flow meters in the pilot project area. Flow monitoring data submittal is expected in August 2014.

*Blue River South Inflow and Infiltration (I/I) Reduction Projects 1 and 2:* Additional flow and rainfall monitoring consisting of eight temporary flow meters and one rain gauge was conducted beginning in April 2014. Flow monitoring was performed for 90 days to provide additional data to supplement data obtained during the spring of 2013 for use in design of I/I reduction improvements.

*Round Grove:* Additional flow monitoring was conducted in Round Grove in the spring of 2014 to further estimate post -construction flow rates and quantify the amount of I/I removal.

*Various I/I Projects:* Pre-construction flow and rainfall monitoring was performed in the spring of 2014 for 90 days. Monitoring occurred in five I/I project areas to provide information for the identification and quantification of I/I sources. Monitoring was performed for Line Creek/Rock Creek Basins Area 1 Project, Blue River South Area 3 Project, Blue River Central Areas 1 and 2 Projects, and the Blue River North Project. Eight rain gauges were also installed in the project areas to supplement coverage provided by the City's existing ALERT gauging system.

2. Long-Term Flow Monitoring

Long-term flow monitoring continued at multiple locations within the combined sewer system. As of June 30, 2014, flow monitoring was conducted at 18 combined sewer outfall locations. **Table 1** summarizes the long-term monitoring sites. Flow data is submitted on a quarterly basis to Water Services.

Table 1: Current Long-Term Monitoring Locations					
Site ID	Project Area	Manhole Number	Monitored Line	Year Implemented	# of Sensors
BR069 (1)	Middle Blue River	S128-356	Incoming/outgoing main lines at diversion structure	2011	3
BR069 (2)	Middle Blue River	S128-056	Incoming	2011	1
BR059 (1)	Middle Blue River	S147-011	Incoming/outgoing main lines at diversion structure	2011	2
BR059 (2)	Middle Blue River	S147-013	Incoming	2011	1
BR061	Middle Blue River	S097-005	Outgoing overflow	2012	1
BR062 (1)	Middle Blue River	S106-032	Incoming dry weather	2012	1
BR062 (2)	Middle Blue River	S106-034	Incoming combined sewer flow	2012	1
BR064	Middle Blue River	S122-206	Outgoing overflow	2012	1
BR071	NEID	S028-035	Outgoing overflow	2013	1
BR072	NEID	S028-077	Incoming	2013	1
BR073	NEID	S028-954	Outgoing overflow	2013	1
BR074	NEID	S027-860	Outgoing overflow	2013	1
BR075	NEID	S009-017	Outgoing overflow	2013	1
BR077	NEID	S028-955	Outgoing overflow	2013	1



**Table 1: Current Long-Term Monitoring Locations**

Site ID	Project Area	Manhole Number	Monitored Line	Year Implemented	# of Sensors
W003	Turkey Creek/CID	S029-820	Incoming	2014	1
W002	Turkey Creek/CID	S029-058	Outgoing overflow	2014	1
BR031	NEID	S012-047	Outgoing overflow	2014	1
BR063 (1)	Middle Blue River	S122-397	Outgoing overflow	2014	1
BR063 (2)	Middle Blue River	S122-420	Outgoing overflow	2014	1
BR066	Middle Blue River	S148-039	Outgoing overflow	2014	1
BR067	Middle Blue River	S148-051	Outgoing overflow	2014	1
BR076	NEID	S006-801	Outgoing overflow	2014	1

*Note: (1) and (2) indicates multiple meters at the outfall site.*

## b. Green Infrastructure

Preliminary site selection work began during the reporting period for an additional green infrastructure pilot project in Kansas City’s 3rd Council District. The exact location for the project is yet to be determined, but up to three sites are being considered.

Water Services also began development of conceptual designs for two additional green infrastructure pilot projects. These projects were prescribed by the Consent Decree for areas of the Northeast Industrial District and the Turkey Creek/Central Industrial District. Conceptual design reports for both of these projects will be submitted to USEPA by December 31, 2014 for approval.

## VII. COMBINED SEWER OVERFLOW CONTROL MEASURES – APPENDIX A

About 58 square miles within Kansas City are served by combined sewer systems (CSS). This area is generally bounded by the Missouri/Kansas state line on the west, 85th Street on the south, the Blue River on the east, and the Missouri River on the north. The area served by the CSS is subdivided into six principal basins: Brush Creek, Lower Blue River, Middle Blue River, Northeast Industrial District, Town Fork Creek, and Turkey Creek/Central Industrial District.

Field investigation activities for two neighborhood sewer rehabilitation projects will be coordinated through a citywide sewer cleaning and closed circuit television (CCTV) inspection contract. The works will consist of cleaning and CCTV inspection of sanitary sewers in the Brush Creek and Town Fork Creek combined sewer system basins. Field investigation activities will also be completed for seven I/I projects in the separate sewer system basins discussed later in this document. All field investigation activities are expected to be completed by December 2015.

## a. Brush Creek

### i. NEIGHBORHOOD SEWER REHABILITATION

During the reporting period, scoping documents for engineering professional services were initiated for the Brush Creek Neighborhood Sewer Rehabilitation Project. The RFQ/P is expected to be advertised in early 2015.

## b. Middle Blue River

### i. DISTRIBUTED STORAGE OUTFALL 069

The design professional for this project is tasked with designing green infrastructure solutions to reduce combined sewer overflows at Outfall 069. During the reporting period, the design team worked to finalize the basis of design memorandum, revising and outlining the final design concepts and preliminary design.

On May 24, 2014 a public meeting was held to provide area residents with an update on the project and allow them to provide feedback on the preliminary designs completed to-date. Participants also learned how they can make improvements on their own property to help improve water quality. A combined public meeting for this project and the Distributed Storage Outfall 059 project was held on June 24, 2014 with a total of 55 attendees. Moving forward, public outreach activities will be combined to provide information about both distributed storage projects.

Approximately 40% of the design work was completed by June 30, 2014. Construction of the project is required to be completed by December 31, 2017.

### ii. DISTRIBUTED STORAGE OUTFALL 059

The design professional for this project is tasked with designing green infrastructure solutions to reduce combined sewer overflows at Outfall 059 and evaluating whether improved flood protection could be part of the project. During the reporting period, the design team worked to finalize the basis of design memorandum, defining the planned improvements including flood mitigation elements. Property acquisition discussions needed for project implementation took place during the reporting period and will continue over the next several months. A partial Phase 2 environmental site assessment was performed at the site of a former dry cleaner to determine if there are any site contamination concerns.

In May, two public meetings were held for this project. One meeting involved businesses and business owners along Troost Avenue. The second meeting

involved a targeted area in a neighborhood just north of a parcel of land that is expected to have significant improvements.

Approximately 35% of the design work for the project was completed by June 30, 2014. Construction of the project is required to be completed by December 31, 2017.

**iii. NEIGHBORHOOD SEWER REHABILITATION**

The Neighborhood Sewer Rehabilitation Project in the Middle Blue River Basin is being implemented to reduce basement backups and improve the reliability and performance of the combined sewer collection system. This project involves field investigations to identify and quantify sewer system defects and the preparation of two sets of construction contract documents to rehabilitate sewer pipes 12-inch and smaller within the collection system.

During the reporting period, most of the field investigations were completed. This work included collection system characterization, manhole inspections, smoke testing, sewer pipe CCTV inspections, and data analysis. Rehabilitation design was completed for Area 1 (covering the area tributary to Outfalls 059 and 069) and the project was bid on July 1, 2014. A construction contract is expected to be awarded for Area 1 by September 2014. The design for the remainder of the Middle Blue River Basin is expected to be completed in December 2014.

As of June 30, 2014, approximately 44 percent of the design work was completed. The construction of neighborhood sewer rehabilitation work is required to be completed in the entire Middle Blue River basin by December 31, 2017.

**iv. SEWER CONSOLIDATION OUTFALL 063**

This sewer consolidation project involves the construction of consolidation piping, disconnection of inlets from the combined sewer system, and elimination of 15 of 18 diversion structures located in the project area. The purpose of the project is to eliminate overflows at Outfall 063.

Contract negotiations for professional design services are currently underway and a notice to proceed is expected in October 2014. Construction is expected to begin in January 2016 and be completed by September 2017, ahead of the December 31, 2017 Consent Decree deadline.

**v. SEWER SEPARATION: OUTFALL 067**

This sewer separation project involves the separation of approximately 270 acres of the combined system and elimination of combined sewer outfall 067 by removing the existing diversion structure.

An RFQ/P for design professional services was developed in early 2014 and was advertised in June 2014. The design consultant selection process will occur in August 2014, and a notice to proceed is anticipated in October 2014.

## c. Northeast Industrial District

### i. SEWER SEPARATION: DIVERSION STRUCTURE 006

This sewer separation project involves professional engineering services necessary to perform an engineering study, preliminary design, and the preparation of construction contract documents. The project involves the separation of approximately 260 acres of the combined sewer system, construction of approximately 13,000 linear feet of sanitary sewer pipe, and elimination of the diversion structure 006 in the Northeast Industrial District Basin.

An RFQ/P for design professional services was developed in early 2014 and was advertised in March 2014. After an interview process, a design professional was selected in May. Contract negotiations are expected to be completed and a notice to proceed issued in September 2014.

### ii. GREEN INFRASTRUCTURE PILOT PROJECT

Conceptual planning is currently underway by Water Services for the green infrastructure pilot project in the Northeast Industrial District. A conceptual proposal for development must be submitted to USEPA by December 31, 2014 for approval before design can begin. This project has a required consent decree completion date of December 31, 2020.

### iii. GOOSENECK CREEK ARCH SEWER GATES AND PUMP STATION IMPROVEMENTS

Preliminary planning is currently underway to develop scope of work and RFQ/P documents for the Gooseneck Creek Arch Sewer In-Line Gates and Pump Station Improvements project. The project is expected to be advertised in the next reporting period, ahead of the 2018 start date defined in the Consent Decree for the selection of a design professional.

## d. Town Fork Creek

### i. NEIGHBORHOOD SEWER REHABILITATION

The Neighborhood Sewer Rehabilitation Project in the Town Fork Creek Basin is being implemented to reduce basement backups and improve the reliability and performance of the sewer collection system. This project will involve field investigations to identify and quantify sewer system defects and the preparation of construction contract documents to rehabilitate sewer pipes 12-inch and smaller.

Water Services' OCP Team performed system characterization and surface and internal inspections of manholes in the Town Fork Creek Basin. The system

characterization and inspection data will be provided to the design professionals for their use during performance of rehabilitation design.

The project design professionals' scope of work includes inspection of the public sanitary sewer pipes 12-inch and smaller and related manholes in the area, the review of the CCTV inspection data previously collected by Water Services, design of sewer system rehabilitation improvements for inflow source removal, and the preparation of construction contract documents for implementation of recommended system rehabilitation improvements.

Contract negotiations have been completed and a notice to proceed is expected to be issued in July 2014; construction is expected to begin in September 2016 and be completed by August 2018, ahead of the December 31, 2018 Consent Decree deadline.

## e. Turkey Creek/Central Industrial District

### i. TURKEY CREEK PUMP STATION REHABILITATION

This construction project involves upgrades at the existing pump station including the removal of existing pumps, installation of new pumping units, replacement and installation of new pump control/discharge valves, and installation of new transformers and disconnects for pumps. The project also includes a variety of electrical, instrumentation and control equipment modifications and structural and architectural modifications.

A notice to proceed was issued to the construction contractor in February 2014. Approximately 10% percent of the construction work was completed by the end of June 2014. This project is required to be completed by December 31, 2016.

### ii. IN-LINE GATES AT SANTA FE PUMP STATION (STORM DRAINAGE IMPROVEMENTS)

This pump station project involves modifying or replacing existing sluice gates at the Santa Fe Pump Station as necessary to facilitate the storage of wet weather flows in the existing upstream collection sewer system and to reduce the number of combined sewer overflows from Outfall 003 to the Missouri River.

The project includes assessment and modeling of combined sewer system improvements to determine the maximum potential storage without adverse impacts, and the preparation of design document and construction bidding documents for modification or replacement of the in-line gates, including the addition of real-time SCADA control capabilities and establishment of gate operational criteria.

An RFQ/P for design professional services was developed in 2013 and was advertised in December 2013. Proposals were received in January 2014 and the design professional was selected in February 2014. The design professionals' scope of work and compensation were negotiated in May 2014 and a notice to proceed is expected in September 2014.

**iii. GREEN INFRASTRUCTURE PILOT PROJECT**

Conceptual planning is currently underway by Water Services for the green infrastructure pilot project in the Turkey Creek/Central Industrial District basin. A conceptual proposal for development will be submitted to USEPA by December 31, 2014 for approval before design can begin. This project has a required consent decree completion date of December 31, 2020.

## **VIII. SEPARATE SEWER OVERFLOW CONTROL MEASURES – APPENDIX A**

Kansas City's Separate Sanitary Sewer (SSS) system comprises nine drainage basins covering 260 square miles of the City. The four SSS basins north of the Missouri River are the Northern and Northwestern watersheds and the Line Creek/Rock Creek and Birmingham/Shoal Creek basins. The five SSS system basins south of the Missouri River are the Blue River North, Round Grove, Blue River Central, Blue River South and Little Blue River basins.

Much of the early projects and program strategy in the separate sanitary sewer basins relate to reducing the amount of rainwater and inflow/infiltration (I/I) entering the sanitary sewer system to prevent overflows from the system. This reduction in rainwater entering the system is a combination of reducing or eliminating points of direct rainwater inflow into the system and reducing rainwater infiltration through collection system defects. A combination of wet weather storage and treatment will be utilized to address system needs as outlined in the City's Overflow Control Plan.

As was mentioned previously, field investigation activities are being coordinated for I/I projects in the following separate sewer system basins: Blue River North, Blue River Central, Blue River South, and Line Creek/Rock Creek. All field investigation activities are expected to be completed by December 2015.

### **a. Private Inflow/Infiltration Reduction Program**

In late 2013, Water Services began developing a private I/I reduction program to be implemented in conjunction with public sewer I/I reduction projects. The focus of the program will be on disconnecting private I/I sources only when cost-effective to do so. To help establish a private I/I reduction program that reflects the needs and desires of Kansas City ratepayers, Water Services worked with the City Mayor's office during this reporting period to identify residents to participate in a Community Advisory Group. This group will assist with defining the program's implementation strategies. Water Services will recommend a private I/I reduction program implementation plan based on the input received and present it to the mayor and city council for approval. The 12-member Community Advisory Group is expected to have a minimum of four meetings beginning in July 2014.

### **b. North of the Missouri River Separate Sewer System**

**i. LINE CREEK/ROCK CREEK I/I REDUCTION PROJECTS**

Two I/I reduction projects are underway in the Line Creek/Rock Creek basins and are further defined as Area 1 and Area 2. The projects involve design professional services to perform field investigations and gather collection system condition information to identify and quantify structural deficiencies, develop rehabilitation recommendations, and prepare construction contract documents to improve reliability and performance of the separate sanitary sewer system.

Water Services' OCP Team performed system characterization and surface and internal inspections of manholes in the Town Fork Creek Basin. The system characterization and inspection data will be provided to the design professionals for their use during performance of I/I reduction design.

Design professional services include the inspection of public sanitary sewers, related manholes in the area, and review of CCTV inspection data previously collected by Water Services. The targeted amount of I/I reduction in the Line Creek/Rock Creek basins is 35 percent.

Contract negotiations are currently underway and a notice to proceed is expected in August 2014 for Area 1 and by April 2015 for Area 2.

These I/I reduction projects are part of Water Services' efforts to reduce the amount of I/I flows in the City's separate sanitary sewer system north of the Missouri River. This work is required to be completed by December 31, 2023.

**c. South of the Missouri River Separate Sewer System**

**i. BLUE RIVER SOUTH I/I REDUCTION AREAS 1 AND 2 PROJECT**

Design professional services for an I/I reduction project in Areas 1 and 2 of the Blue River South basin began in 2013. The design professional's scope of work includes preconstruction flow monitoring and data analysis; public sewer cleaning; CCTV data analysis; smoke and dye testing to assess the condition of the separate sewer system and identify I/I sources; manhole inspections; design of sewer system rehabilitation improvements for I/I source removal; and the preparation of construction contract documents for implementation of recommended system rehabilitation improvements.

During the reporting period, field investigations, including public sewer cleaning and CCTV data analysis and smoke and dye testing were completed. Design is now underway throughout the entire project area and bid packages are expected to be completed by January 2015. Through the end of June 2014, design professional services were approximately 70 percent complete.

Construction is expected to be completed by November 2016 and post-construction flow monitoring is expected to occur through the end of 2017 to estimate the amount of I/I reduction achieved. The targeted amount of I/I reduction in this basin (including all five sub-basins) is 45 percent.

This I/I reduction project is part of Water Services' efforts to reduce the amount of I/I flows in the City's separate sanitary sewer system south of the Missouri River. This work is required to be completed by December 31, 2021.

**ii. ADDITIONAL BLUE RIVER SOUTH I/I REDUCTION PROJECTS**

Three additional I/I reduction projects are underway in the Blue River South basin and are further defined as Area 3, Area 4 and Area 5.

Project scope elements to be performed by the design professionals include project management, analysis of flow monitoring data, and analysis of manhole inspections and CCTV inspection data.

A combined RFQ/P for design professional services for all I/I reduction projects was developed and advertised in April 2014. Design professional consultants were selected in June 2014 after a project selection process. Contract negotiations are currently underway and a notice to proceed is expected in October 2014 for Area 3 and by April 2015 for Area 4 and Area 5.

These I/I reduction projects are part of Water Services' efforts to reduce the amount of I/I flows in the City's separate sanitary sewer system south of the Missouri River. This work is required to be completed by December 31, 2021.

**iii. BLUE RIVER CENTRAL I/I REDUCTION AREA 1 PROJECT**

Two I/I reduction projects are planned in the Blue River Central basin and are being identified as Area 1 and Area 2. The project involves similar design professional services as what will be conducted for the Blue River South I/I Reduction Projects.

Project scope elements include project management, analysis of CCTV inspection data, evaluation of field data gathered from flow meters, and analysis of data for manhole inspections, smoke testing and dyed water testing. The targeted amount of I/I reduction in the entire Blue River Central basin is 30 percent.

These projects were advertised as part of the combined I/I reduction project RFQ/P in April 2014. After a project selection process, design professional consultants were selected in June 2014. Contract negotiations are currently underway and a notice to proceed is expected in October 2014 for both project areas.

These I/I reduction projects are part of Water Services' efforts to reduce the amount of I/I flows in the City's separate sanitary sewer system south of the Missouri River. This work is required to be completed by December 31, 2021.

**iv. BLUE RIVER NORTH I/I REDUCTION AREA 1 PROJECT**



The Blue River North I/I Reduction Area 1 Project involves similar design professional services as what will be conducted for the Blue River South I/I Reduction Projects.

Project scope elements for this specific project include design professional services for the review of CCTV, flow metering, and manhole inspection data, field investigations to gather the necessary sanitary sewer collection system information to identify and quantify structural deficiencies, development of rehabilitation recommendations, and preparation of construction contract drawings and limited technical specifications to implement rehabilitation recommendations.

This project was advertised as part of the combined I/I reduction project RFQ/P in April 2014. After a project selection process, a design professional consultant was selected in June 2014. Contract negotiations are currently underway and a notice to proceed is expected in October 2014. The targeted amount of I/I reduction in the entire Blue River North basin is 30 percent.

This I/I reduction project is part of Water Services' efforts to reduce the amount of I/I flows in the City's separate sanitary sewer system south of the Missouri River. This work is required to be completed by December 31, 2021.

**v. 87<sup>TH</sup> STREET PUMP STATION REHABILITATION**

The project includes rehabilitation of the existing 87<sup>th</sup> Street Pump Station, including the replacement of duty pumping units, to improve the station's reliability of existing pumping capacity.

A design professional services agreement was executed by Water Services in December 2013 which includes professional services for preliminary and detailed design, development of construction contract documents, bidding assistance, construction phase office and field support, resident project representative field services, and control system configuration and programming.

In June 2014, 60 percent complete design documents were submitted to the City for review. Currently design is scheduled to be completed in early 2015 with construction expected to be completed by the Consent Decree deadline of December 2016.

## **IX. SCHEDULED ACTIVITY FOR THE NEXT REPORTING PERIOD**

From July 1, 2014 to December 31, 2014, the following activities are expected to take place; however, this list should not be construed as an explanation of all activities that will be occurring in the last half of 2014. Certain Consent Decree and OCP activities, such as NMC; Capacity, Management, Operations and Maintenance (CMOM); Public Participation; Project Planning; and Data Management, will continue for the duration of the Consent Decree, but are not specifically discussed in this section.

- Request for Qualifications/Proposals for the following OCP projects will be developed and advertised for selection of a design professional:
  - Gooseneck Creek Arch Sewer Gates and Pump Station Improvements – NEID basin
  - Neighborhood Sewer Rehabilitation – Brush Creek Basin
  - Additional green infrastructure pilot projects
- Water Services will begin contracts with design professional consultants for several contracts that are currently being advertised or are undergoing contract negotiations:
  - Town Fork Creek Basin Neighborhood Sewer Rehabilitation
  - Sewer Pipe Consolidation at Outfall 063
  - Sewer Separation at Diversion Structure 006
  - Sewer Separation at Outfall 067
  - I/I reduction projects south of the Missouri River in the Blue River South, Blue River Central and Blue River North basins
  - I/I reduction project north of the Missouri River in the Line Creek/Rock Creek basin
  - In-line Gates at Santa Fe Pump Station
- Work will continue on the following existing projects:
  - Blue River South I/I Reduction Areas 1 and 2 Project
  - Middle Blue River Basin Neighborhood Sewer Rehabilitation
  - Distributed Storage at Outfall 059
  - Distributed Storage at Outfall 069
  - 87<sup>th</sup> Street Pump Station Rehabilitation Improvements
  - Construction of Turkey Creek Pump Station Modifications
  - Long-term flow monitoring at 18 outfall locations
- The Private I/I Reduction Plan will continue to be developed with input from a community advisory group.
- A conceptual proposal for development of two green infrastructure pilot projects in the Northeast Industrial District and the Turkey Creek/CID Basins will be prepared and submitted to USEPA by December 31, 2014 for approval.