



City of Chattanooga

Mayor Andy Berke

January 29, 2018

VIA CERTIFIED MAIL

Ms. Sara Janovitz
Environmental Engineer
Clean Water Enforcement Branch
US EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

**Re: *United States of America et. al. v. City of Chattanooga, No. 1:12-cv-0024*
Semi-Annual Work Progress Report No. 9 – July 2017 to December 2017**

Dear Ms. Janovitz:

On behalf of the City of Chattanooga, Tennessee ("City"), and in accordance with the consent decree entered by the United States District Court for the Eastern District of Tennessee (Southern Division), on April 24, 2013, in the case styled the United States of America et. al. v. City of Chattanooga, No. 1:12-cv-0024 ("Consent Decree"), we are submitting to both the Environmental Protection Agency ("EPA") and the Tennessee Department of Environment and Conservation ("TDEC") the eighth semi-annual work progress report required pursuant to paragraph 39 of the Consent Decree. This report is also being submitted in accordance with the letter from Denise Diaz, dated September 16, 2013, establishing the dates for reporting under the Consent Decree.

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.

Ms. Sara Janovitz
January 29, 2018
Page Two

Please let me know if you have any questions regarding our submittal.

Sincerely,



Michael C. Patrick, P.E.
Director, Waste Resources Division

Enclosure

cc: Karl Fingerhood, Esq., US DOJ
Chief, Environmental Enforcement Section, US DOJ
Chief, Clean Water Enforcement Branch, US EPA Region 4
Bill Bush, Esq., US EPA
Sohnia Hong, Esq., Office of the Attorney General
Enforcement Coordinator, Water Pollution Control, TDEC
Shelby Ward, TN Clean Water Network
Adam Sowatzka, Esq., King & Spalding
Mike Marino, P.E., Jacobs



Semi-Annual Work Progress Report No. 9

July 1 – December 31, 2017

Prepared for

**Environmental Protection Agency and
Tennessee Department of Environment and
Conservation**

City of Chattanooga
Waste Resources Division
Consent Decree Program
Case No. 1:12-cv-00245

Prepared by

City of Chattanooga
Waste Resources Division

Submitted by

JACOBS®
Jacobs Engineering Group Inc.
Consent Decree Program Manager

Chattanooga, Tennessee

January 29, 2018

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Acronyms and Abbreviations

ARAP	Aquatic Resource Alteration Permit
CAP	Capacity Assurance Program
CD	Consent Decree
CIPP	Cured in Place Pipe
CMOM	Capacity, Management, Operations, and Management
CSO	Combined Sewer Overflow
CSOTF	Combined Sewer Overflow Treatment Facility
CSS	Combined Sewer System
EFT	Electronic Funds Transfer
EPA	Environmental Protection Agency
ESIP	Enterprise South Industrial Park
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
GIPP	Green Infrastructure Program Plan
GLPMP	Gravity Line Preventative Maintenance Program
HVAC	Heating, Ventilation, and Air Conditioning
IPS	Influent Pump Station
ISS	Interceptor Sewer System
LF	Linear Feet
LTCP	Long Term Control Plan
MBWWTP	Moccasin Bend Wastewater Treatment Plant
MCC	Motor Control Center
MGD	Million Gallons per Day
N/A	Not Applicable

NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NTP	Notice to Proceed
PCP	Process Controls Program
PCCMP	Post Construction Compliance Monitoring Program
PDR	Public Document Repository
PLC	Programmable Logic Controller
PS	Pump Station
PSOP	Pump Station Operations Program
PSPMP	Pump Station Preventive Maintenance Program
RDII	Rain-derived Infiltration and Inflow
RFQ	Request for Quotation
SCADA	Supervisory Control and Data Acquisition
SORP	Sewer Overflow Response Protocol
SRF	State Revolving Funds
SSES	Sanitary Sewer Evaluation Study
SSO	Sanitary Sewer Overflow
SUO	Sewer Use Ordinance
TCWN	Tennessee Clean Water Network
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
USDOJ	United States Department of Justice
VFD	Variable Frequency Drive
WCTS	Waste Collection and Transmission System
WRD	Waste Resources Division
WWTA	Wastewater Treatment Authority

1.0 Executive Summary

On April 24, 2013, the City of Chattanooga (“City”) entered into a consent decree with the United States and the State of Tennessee, in the case styled *United States of America et. al. v. City of Chattanooga, No. 1:12-cv-00245* (“CD”). This Semi-Annual Work Progress Report (Report) has been prepared pursuant to the requirements of paragraph 39 of the CD. In accordance with the CD, this Report presents the major milestones achieved in the last 6 months, and also provides projections for activities anticipated to be completed in the following 6 months. This Report presents milestones achieved from July 1, 2017 through December 31, 2017 (“Report Period”), and the projections cover the period of January 1, 2018 through June 30, 2018.

The City met all of the deadlines for this Report Period. During the Report Period, the City developed and submitted the deliverables that are listed in Table 1-1 to the Environmental Protection Agency (“EPA”) and the Tennessee Department of Environment and Conservation (“TDEC”) for review and approval. This information is also presented in Gantt chart format in Appendix A.

Table 1-1

Completed Projects and Submitted Consent Decree Deliverables for the Current Reporting Period

CD Projects and Deliverables	CD Reference	CD Deadline	Submittal Date/Completion Date
Quarterly Report No. 16	Section IX., para 38	7/31/2017	7/26/2017
Quarterly Report No. 17	Section IX., para 38	10/31/2017	10/25/2017
Semi-Annual Work Progress Report No. 8	Section IX., para 39	7/31/2017	7/26/2017
Highland Park Sewer Rehabilitation	Section VI, para 22	4/24/2018	11/28/2017
MBWWTP Telemetry and Supervisory Control And Data Acquisition (“SCADA”) Upgrades	Section VI, para 22	4/24/2018	11/28/2017
Long Term Control Plan (“LTCP”)-Additional Operational Plan	Section VI, para 24	10/24/2017*	10/24/2017

* Based on extension letter from EPA dated February 9, 2017

Table 1-2 lists the projects and deliverables that the City expects to complete during the upcoming semi-annual period of January 1, 2018 through June 30, 2018. This information is also available in Gantt chart format in Appendix A.

Table 1-2

Anticipated Completed Projects and Consent Decree Deliverables for the Next Reporting Period

CD Projects and Deliverables	CD Reference	CD Deadline	Anticipated Submittal/Completion Date
Focused Sanitary Sewer Evaluation Services (“SSES”) and Rehab – Chattanooga Creek 4	Section VI, para 21	7/24/2020	4/18/2018
Focused SSES and Rehab – Dobb’s Branch 3	Section VI, para 21	7/24/2020	3/30/2018
Focused SSES and Rehab – South Chickamauga Creek 1-Phase 1	Section VI, para 21	7/24/2020	3/30/2018
Focused SSES and Rehab – South Chickamauga Creek 5	Section VI, para 21	7/24/2020	3/17/2018
DuPont Pump Station (“PS”) and Basin Improvements – Phase 1	Section VI, para 22	4/24/2018	1/31/2018
East Brainerd PS Rehabilitation	Section VI, para 22	4/24/2018	3/28/2018
Orchard Knob PS Improvements	Section VI, para 22	4/24/2018	3/31/2018
Friars Branch Basin Improvements	Section VI, para 22	4/24/2018	3/3/2018
Agawela Drive Stream Restoration – Supplemental Environmental Project (“SEP”)	Section VIII, para 31	4/24/2018	4/14/2018
Citico PS and CSOTF Upgrades**	Section IX, para 39(c)	N/A	2/21/2018
South Chick PS Phase II and Spring Creek PS Upgrades**	Section IX, para 39(c)	N/A	2/28/2018

** Additional project per paragraph 39(c) of CD

2.0 Introduction

2.1 Purpose

Pursuant to Section IX, paragraph 39, of the CD, the City is required to submit work progress reports on a semi-annual basis to the EPA and TDEC. Chattanooga has prepared this Report to satisfy this reporting requirement.

2.2 Requirements

As detailed in Section IX of the CD, the City is required to report the following information concerning compliance with the remedial actions set forth under the CD:

1. A description of projects and activities completed and milestones achieved during the previous 6-month period pursuant to the requirements of the CD, in Gantt chart or similar format, including a description of compliance or non-compliance with the requirements of the CD and, if applicable, the reasons for non-compliance;
2. A summary of significant projects and activities anticipated to be performed, and milestones anticipated to be achieved, in the successive 6-month period to comply with the requirements of the CD, in Gantt chart or similar format; and
3. Any additional information the City determines is appropriate to demonstrate that the City is implementing the remedial actions required under the CD in an adequate and timely manner.

2.3 Report Structure

Work progress is presented in the body of the Report in a narrative format. This narrative includes a brief description of each CD project, as well as any activities completed or milestones that were achieved or are anticipated to be completed. In addition to these descriptions, a detailed schedule containing each of the projects in Gantt format is provided in Appendix A.

3.0 Work Progress

3.1 Capacity, Management, Operations and Management (“CMOM”) Programs

3.1.1 CMOM-Sewer Overflow Response Protocol (“SORP”) (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016.

3.1.2 CMOM-Emergency Response Plan (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016.

3.1.3 CMOM-FOG Mgmt. Plan (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016. A revised FOG Plan was submitted to the EPA on September 28, 2016 and approved on December 7, 2016.

3.1.4 CMOM-Gravity Line Preventive Maintenance Program (“GLPMP”) (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016.

3.1.5 CMOM-PS Operations Program (“PSOP”) (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016.

3.1.6 CMOM-PS Preventive Maintenance Program (“PSPMP”) (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016.

3.1.7 CMOM-Hydraulic Model Development (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016.

3.1.8 CMOM-CAP (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 7 submitted January 25, 2017.

3.1.9 CMOM-Inter-Jurisdictional Agreement Program (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 4 submitted July 24, 2015.

3.2 Sanitary Sewer Evaluation Study (“SSES”) Work Plan (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016. As part of the implementation of the plan, the following Phase I rehabilitation projects are being executed as described below.

3.2.1 Focused SSES and Rehabilitation-Chattanooga Creek 4

This project represents 1 of the 5 Phase I priority sewer sub-basins and is being executed in accordance with Paragraph 21 of the CD. The Chattanooga Creek 4 sewer sub-basin consists of approximately 69,504 linear feet (“LF”) of sanitary sewer piping, ranging from 6-inch to 48-inch diameter. The Notice to Proceed (“NTP”) for professional services was issued April 19, 2013, and SSES investigations were completed on approximately 61,567 LF of sewer by April 2014. The Preliminary Engineering Report (“PER”) was submitted November 5, 2014 and approved November 7, 2014. Approximately 42,930 LF of sanitary sewer were designated for rehabilitation. The final design was submitted to TDEC for review on March 28, 2016 and approval was received on July 8, 2016. Bidding began on July 9, 2016 and construction began March 2, 2017. Construction is scheduled to be complete in the first half of 2018.

3.2.2 Focused SSES and Rehabilitation-Dobbs Branch 3

This project represents 1 of the 5 Phase I priority sewer sub-basins and is being executed in accordance with Paragraph 21 of the CD. The Dobbs Branch 3 sewer sub-basin consists of approximately 47,381 LF of sanitary sewer piping, ranging from 6-inch to 24-inch diameter. The NTP for professional services was issued April 19, 2013, and SSES investigations were completed for approximately 44,740 LF of sewer by October 4, 2013. The PER was submitted to the City on May 15, 2014 and approved May 16, 2014. Approximately 32,225 LF of sanitary sewer were designated for rehabilitation. The design was completed and submitted to TDEC on October 6, 2015 and approval was received from TDEC on October 28, 2015. Bidding began on October 29, 2015, and NTP for construction was issued March 14, 2016. Final completion of the original contract was met on May 7, 2017. Additional work added to the contract included cleaning approximately 1,980 LF of 78” sewer interceptor and 48” triple barrel stream crossing immediately upstream of the 23rd street PS, as well as cleaning the wet well at the 23rd street PS. Cleaning is expected to be complete in the first half of 2018.

3.2.3 Focused SSES and Rehabilitation-South Chickamauga Creek 1 Phase 1 & Phase 2

This project represents 1 of the 5 Phase I priority sewer sub-basins and is being executed in accordance with Paragraph 21 of the CD. The South Chickamauga Creek 1 sewer sub-basin consists of approximately 81,809 LF of sanitary sewer piping, ranging from 4-inch to 84-inch diameter.

Phase 1 - The NTP for professional services was issued June 26, 2013, and SSES investigations were completed for approximately 69,751 LF of sewer by January 17, 2014. Approximately 13,257 LF of sanitary sewer were designated for rehabilitation. Final design was completed and the project was submitted to TDEC for approval on November 26, 2016. Contract bidding began December 29, 2016 and the NTP for construction was issued July 7, 2017. Construction is anticipated to be complete in the first half of 2018.

Phase 2 - Based on the results of the SSES it was determined that a PS will be installed to eliminate portions of the gravity sewer located in the flood plain to increase I/I removal, and improve maintenance and reliability of the collection system infrastructure in the basin. An NTP for professional services is anticipated in the first half of 2018 with an estimated construction completion in the first half of 2020.

3.2.4 Focused SSES and Rehabilitation-South Chickamauga Creek 5

This project represents 1 of the 5 Phase I priority sewer sub-basins and is being executed in accordance with Paragraph 21 of the CD. The South Chickamauga Creek 5 sewer sub-basin consists of approximately 89,414 LF of sanitary sewer piping, ranging from 6-inch to 36-inch diameter. The NTP for professional services was issued April 18, 2013, and SSES investigations were completed for approximately 73,923 LF of sewer piping in 2014. The PER was submitted on January 8, 2015 and approximately 19,560 LF of sanitary sewer were recommended for rehabilitation. Final design was completed and the project was submitted to TDEC on November 7, 2016 and approval was received February 10, 2017. Bidding began November 08, 2016 and construction began May 30, 2017. Construction is scheduled to be complete in the first half of 2018.

3.2.5 Focused SSES and Rehabilitation-South Chickamauga Creek 16 (completed)

This project represents 1 of the 5 Phase I priority sewer sub-basins. This project has been completed. See Semi-Annual Report No. 5 submitted January 27, 2016.

3.3 Early Action Capital Improvement Projects

3.3.1 SSO and Wet Weather Volume Reduction Projects

3.3.1.1 DuPont PS and Basin Improvements – Phase 1 and Phase 2

The DuPont PS and Basin Improvements Phase 1 and 2 projects are being performed pursuant to Paragraph 22 and Appendix C of the CD.

Phase 1 includes SSES and rehabilitation of sewers within the DuPont PS service area which are within three selected sub-basins (North Chickamauga Creek 1, North Chickamauga Creek 3, and Tennessee River 10). The total amount of sewer estimated from these basins for SSES is approximately 270,008 LF ranging from 8-inch to 48-inch diameter. The NTP for Phase 1 professional services was issued on April 19, 2013, and SSES has been performed on approximately 242,966 LF of sewer piping and from the results of the SSES, approximately 27,468 LF of sanitary sewer and service pipelines were designated for rehabilitation and approximately 1,800 LF of pipeline will be relocated out of an environmentally sensitive area. The final PER was submitted on September 5, 2014, and the design was completed and submitted to TDEC for review and approval on August 24, 2015. TDEC approval was received December 2, 2015. The bidding phase began on December 3, 2015 and the NTP for construction was issued March 16, 2016. Construction began April 15, 2016 and is expected to be complete in the first half of 2018.

Phase 2 The original plan called for the design and construction of approximately 7.5 million gallons of wet weather storage and a new wet weather PS at the DuPont PS site. Prior to the start of construction in the first half of 2017, public concern of the nature of the project grew and the City decided to focus on other options. The new plan calls for the design and construction of an approximately 22 Million Gallons per Day ("MGD") new wet weather PS further downstream of the existing DuPont PS site on City owned property in a commercial area where the DuPont-Lupton City interceptors merge. The project also includes a new diversion structure, standby generator, as well as the upsizing of approximately 7,000 LF section of gravity interceptor. The re-design is currently in progress utilizing the original professional services NTP of June 23, 2015. Work on the re-design will continue in the first half of 2018, with an estimated construction completion in the first half of 2020.

3.3.1.2 Collegedale PS Improvements (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 7 submitted January 25, 2017.

3.3.1.3 East Brainerd Collection System and PS Rehabilitation

The East Brainerd Collection System and PS Rehabilitation project is being performed pursuant to Paragraph 22 and Appendix C of the CD. This project includes the SSES and rehabilitation of portions of the East Brainerd basin collection system and the upgrade of the PS. Improvements to the collection system and PS were designed as two different projects with two sets of contract documents.

Collections System Rehabilitation- This work has been completed. See Semi-Annual Report No. 5 submitted January 27, 2016.

PS Rehabilitation- The PS upgrade will include constructing one cast-in-place wet-well containing four submersible pumps and appurtenances; one precast electrical building approximately 20-feet by 30-feet containing variable frequency drives, necessary electrical gear to support the submersible pumps, restroom facility and HVAC units; a 30-inch force main

approximately 500 LF in length connecting the new PS with the discharge manhole at the force main sewer discharge; and an on-site emergency generator and switch gear to power the new PS. The NTP for professional services was issued March 26, 2011. The design was submitted to TDEC on August 2, 2014 and approval of the contract documents for the PS rehabilitation was received on January 29, 2015. Bids were received on May 7, 2015, and the contract was awarded on July 16, 2015. The NTP for the PS rehabilitation construction contract was issued August 7, 2015. The construction phase is scheduled to be complete in the first half of 2018.

3.3.1.4 Altamont Sewer Basin and PS Improvements (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 2 submitted July 28, 2014.

3.3.1.5 Pineville PS and Sewer Basin Improvements (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 3 submitted January 27, 2015.

3.3.1.6 Citico Creek Interceptor Rehabilitation (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 2 submitted July 28, 2014.

3.3.1.7 Highland Park Sewer Rehabilitation (completed)

The Highland Park Sewer Rehabilitation project is being performed pursuant to Paragraph 22 and Appendix C of the CD. The sewer sub-basins in the Highland Park area consist of approximately 74,446 LF of sanitary sewer pipe ranging from 4-inch to 24-inch diameter. The NTP for professional services was issued April 19, 2013. The SSES investigation of this basin was completed for approximately 54,354 LF of sewer piping in April of 2015. From the results of the SSES, approximately 36,098 LF of sanitary sewer, service pipeline, and the associated manholes were designated to be rehabilitated. The final design was completed and submitted to TDEC for review on December 31, 2015. TDEC approval was received on April 26, 2016, and bidding began April 27, 2016. The NTP for construction was issued on August 30, 2016. Construction was completed November 28, 2017.

3.3.1.8 Citico CSOTF PS Improvement Study (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 3 submitted January 27, 2015.

3.3.1.9 Tremont Area Sewer Separation Study (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 2 submitted July 28, 2014.

3.3.1.10 Enterprise South Industrial Park (“ESIP”) PS, Force Main and Interceptor Upgrade (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 8 submitted July 26, 2017.

3.3.1.11 Orchard Knob PS Improvements

The Orchard Knob PS Improvements project is being performed pursuant to Paragraph 22 and Appendix C of the CD. The upgrade involves the replacement of the existing pumps, piping, valves, electrical controls and instrumentation, and back-up generator. The NTP for professional services was issued January 22, 2013, and the final PER was submitted to the City on February 28, 2014. The final design was submitted to TDEC on August 20, 2015 and approval was received October 12, 2015. The project bid phase started on October 21, 2015 and the NTP for construction was issued March 18, 2016. Final completion is scheduled for the first half of 2018.

3.3.1.12 Friars Branch PS Improvements

The Friars Branch PS Improvements project is being performed pursuant to Paragraph 22 and Appendix C of the CD. The purpose of this project is to design and construct improvements to increase reliability and extend the service life of the PS. This project involves replacement of the existing pumps, piping, effluent trough, electrical controls and instrumentation, and addition of an onsite odor control system. The NTP for professional services was issued April 19, 2013, and the final PER was submitted to the City on May 15, 2014. The final design was completed and submitted to TDEC for review October 30, 2015. Approval was received from TDEC on January 27, 2016. Bidding began January 28, 2016. Construction began December 9, 2016 and is scheduled for completion in the second half of 2018.

3.3.1.13 Friars Branch Basin Improvements

The Friars Branch Basin Improvements project is being performed pursuant to Paragraph 22 and Appendix C of the CD. This project involves rehabilitation of portions of the collection system in the Friars Branch basin. The sewer basin consists of approximately 221,344 LF of sanitary sewer piping, ranging from 4-inch to 30-inch diameter. The NTP for professional services was issued on April 18, 2013 and SSES investigations were conducted on approximately 214,104 LF of sewer piping as of December 10, 2013. From the results of the SSES, approximately 20,827 LF of sanitary sewer, service pipeline, and the associated manholes were designated to be rehabilitated. The PER was approved by the City on January 28, 2015 and the design was completed and submitted to TDEC December 24, 2016. Construction began April 28, 2017 and is scheduled to be complete in the first half of 2018.

3.3.1.14 Chattanooga Creek Interceptor Rehabilitation (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016.

3.3.1.15 Tannery Flats Interceptor Rehabilitation (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016.

3.3.1.16 East Bank/West Bank (“EB/WB”) Flow Monitoring (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016.

3.3.2 MBWWTP Projects

3.3.2.1 MBWWTP Secondary Clarifier Valve Motor Operator Replacement (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 8 submitted July 26, 2017.

3.3.2.2 MBWWTP Hydraulic and Pump Improvements (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 8 submitted July 26, 2017.

3.3.2.3 MBWWTP Bar and Fine Screen Replacements (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 8 submitted July 26, 2017.

3.3.2.4 MBWWTP Effluent Disinfection System Upgrade (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016.

3.3.3 CSO Projects

3.3.3.1 Carter Street CSOTF Sewer Outfall Replacement (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016.

3.3.3.2 Automation of Valve Operators at CSO Facilities (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 1 submitted January 30, 2014.

3.3.4 Operations Projects

3.3.4.1 South Chickamauga PS Reliability Improvements (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 1 submitted January 30, 2014.

3.3.4.2 MBWWTP Telemetry and SCADA Upgrades (Completed)

The MBWWTP Telemetry and SCADA Upgrades project is being performed pursuant to Paragraph 22 and Appendix C of the CD. This project involves updating and installing control and monitoring systems for reacting to and controlling equipment to convey wastewater to the MBWWTP. The design includes upgrading the existing Motorola radio system at all remote sites. The remote sites with a “high consequence of failure” will be added to the City’s Regional Public Safety Wireless Mesh Network to provide redundant communication. NTP for professional services was issued on January 23, 2013. The final design was completed and submitted to TDEC for review on October 17, 2015 and approval was received on November

10, 2015. Bidding began November 10, 2015. Construction began November 13, 2016 and was completed on November 28, 2017.

3.4 Long Term Control Plan (“LTCP”) Updates

3.4.1 LTCP-Additional Operational Plan (“AOP”) (Completed)

The LTCP-Additional Operational Plan is being developed pursuant to Paragraph 24(a) of the CD. This program will result in a plan for the Chattanooga Creek CSO Outfalls (Central Avenue CSO and William Street CSO). The plan will augment Chattanooga’s current CSO control measures with additional long term controls to ensure that discharges from these CSOs meet State water quality standards. The NTP for professional services was issued March 13, 2015. Work on this plan continued through the second half of 2016, with several major milestones during the Reporting Period. Implementation of the sampling plan described in the Post Construction Compliance Monitoring Program yielded water quality and flow data that was used to begin calibrating the Cormix receiving water model. Unfortunately, 2016 had 36% less rain in Chattanooga than normal according to the City’s rain monitoring vendor and, thus, there were not enough discharge sampling events available during the monitoring period to validate the model. The National Oceanic and Atmospheric Administration (“NOAA”) predicted higher than normal precipitation for early 2017. In January 2017, the City submitted a 6-month extension to the AOP deadline in order to capture the discharge sampling events required to successfully validate the model. All water quality and flow samples were obtained and modeling was completed on September 7, 2017. The AOP was submitted to EPA for review on October 16, 2017.

3.4.2 LTCP-Post Construction Compliance Monitoring Program (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 3 submitted January 27, 2015.

3.5 MBWWTP Process Controls Program (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 3 submitted January 27, 2015.

3.6 Green Infrastructure (“GI”) Program Plan for CSS Basins (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 5 submitted January 27, 2016.

3.7 Civil Penalty

Compliance with Section VII of the CD requires the payment of the sum of \$476,400 as a civil penalty. Payment of the civil penalty is to be made as follows:

- Cash Payment – 50% of the civil penalty (\$238,200) is to be paid to the United States by FedWire Electronic Funds Transfer. This payment was made to EPA on May 17, 2013.
- State Project – the remaining 50% of the civil penalty is to be spent on the state project in accordance to Appendix D of the CD.

3.7.1 Cash Payment (completed)

In accordance with Paragraph 29 of the CD, the cash payment of \$238,200 was made to EPA on May 17, 2013.

3.7.2 Highland Park GI Demonstration Project

The Highland Park Green Infrastructure Demonstration Project (“State Project”) is currently being performed pursuant to Appendix D of the CD. The State Project involves retrofitting a portion of the Highland Park neighborhood in Chattanooga with green infrastructure through the use of green infrastructure practices such as streetscapes, pervious pavement, tree boxes, bioswales and bio-retention facilities. The NTP for professional services was issued January 1, 2013. A project plan was developed and submitted to the EPA on October 24, 2013, and approval of the plan was received April 25, 2014. The final design was approved by the EPA on October 23, 2014. The bid phase began on October 23, 2014, and construction began May 25, 2017. Construction is scheduled to be complete in the first half of 2018, and the GI design workshop is scheduled to occur in the second half of 2018.

3.8 Agawela Drive Stream Restoration – SEP

The SEP is being performed pursuant to Section VIII and Appendix E of the CD. The Agawela Drive Stream Restoration targets a tributary of the South Chickamauga Creek, which is currently on the 303(d) list for habitat alteration and sediment. The SEP involves restoration of a minimum of 1,500 LF of the tributary and is designed to significantly improve water quality of both the tributary and South Chickamauga Creek. The NTP for professional services was issued on January 23, 2013, and the PER was submitted to the City May 21, 2013. TDEC issued the Aquatic Resource Alteration Permit (“ARAP”) permit on August 17, 2015. Bidding began February 25, 2016 and the NTP for construction services was issued on June 27, 2016. The substantial completion certificate was submitted on December 24, 2016 and final completion is scheduled for the first half of 2018. Additionally the SEP Completion Report required per paragraph 33 of the CD will be submitted in the first half of 2018.

3.9 Reporting Requirements

Compliance with Section IX of the CD requires the City to submit the following reports on a calendar schedule:

- Quarterly Reports, including detailed information on Chattanooga's SSOs, CSO discharges and bypasses at the MBWWTP;
- Semi-Annual Work Progress Reports, including CD deliverable milestones achieved in the last 6 months and projections for activities anticipated to be completed in the following 6 months; and
- Annual Reports, including trends and analyses of the results of the Chattanooga CD programs including CMOM and SSO reduction programs.

To date, the following reports have been submitted to the EPA:

- Quarterly Reports 1 – 17;
- Semi-Annual Work Progress Reports 1 – 8, and
- Annual Report 1 - 4.

The following reports will be submitted to the EPA during (or shortly after) the next Reporting Period:

- Quarterly Reports 17 and 18;
- Semi-Annual Work Progress Report 9; and
- Annual report 5.

3.10 Stipulated Penalties

Paragraph 48 of the CD sets forth the nine categories of CD violations or milestones subject to stipulated penalties under the CD. On June 22, 2017, the United States made a demand for stipulated penalties in the amount of \$93,850 covering the period of July 1, 2014 through December 31, 2016 under the consent decree. The payment was made July 18, 2017.

4.0 Additional Work

According to paragraph 39(c) of the CD, the City is required to include in this Report “any additional information Chattanooga determines is appropriate to demonstrate that Chattanooga is implementing the remedial actions required under this Consent Decree in an adequate and timely manner.” The purpose of this section is to address this requirement of the CD.

In addition to the work progress achieved in accordance with the CD as described in the previous sections, the City continued to implement remedial and improvement efforts under the existing Capital Improvement Program during the Reporting Period. The work described below is aimed at assessing and improving Chattanooga’s Interceptor Sewer System (“ISS”). While not required by the CD, these projects directly impact Chattanooga’s on-going effort to reduce and eliminate SSOs.

4.1 201 Facility Plan Update (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 7 submitted January 25, 2017.

4.2 MBWWTP Backup Electrical Power (complete)

This project has been completed. See Semi-Annual Work Progress Report No. 6 submitted July 27, 2016

4.3 Citico PS and CSOTF Upgrades

The Citico PS and CSOTF Upgrades project involves the design and construction of pumping improvements to the Citico CSOTF to restore ISS capacity, improve reliability, reduce SSOs, and comply with State and Federal regulations. The project includes an evaluation of the Citico PS to determine improvements necessary to operate the PS at design capacity as well as design and construction oversight of the selected improvements. A consultant has been contracted to perform the design and the NTP for professional services was issued on January 27, 2015. TDEC approval of the plans was received November 30, 2016. Bidding commenced July 14, 2016, and construction began December 1, 2016. Construction is estimated to be complete in the first half of 2018.

4.4 South Chick PS Phase II and Spring Creek PS Upgrades

The South Chick PS Phase II and Spring Creek PS Upgrades project will evaluate and design additional reliability improvements for the South Chickamauga Creek PS, including replacement of the sluice gates and bar screens and rehabilitation of the PS wet well. This project will also

evaluate and design improvements for the Spring Creek PS in order to meet or exceed the rated capacity of the existing PS. Improvements for both pumping stations have been scoped under a single contract. The NTP for professional services was awarded on May 6, 2015. Comments were received from TDEC on May 4, 2016 and plans were resubmitted May 16, 2016. TDEC approval was received August 3, 2016. Bidding commenced on August 4, 2016 and the NTP for construction services was issued October 27, 2016 and construction for rehabilitation of the Northwest Georgia Interceptor was completed April 10, 2017. Additional evaluation of the Spring Creek PS force main using SmartBall technology was performed October 11, 2017, but due to field issues, analysis of the data has not been performed. The evaluation is anticipated to be completed in the first half of 2018.

4.5 Carter Street Sewer Rehabilitation (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 8 submitted July 26, 2017.

4.6 MBWWTP – Detritors Rehabilitation

This project involves the rehabilitation and upgrade of the influent grit detritors and related splitter box at the MBWWTP. This project will improve reliability and prevent equipment failure that could lead to bypasses during peak flows by updating aging infrastructure. The NTP for professional services was awarded on July 1, 2015. The project was submitted to TDEC on October 28, 2016, and approval was received on December 12, 2016. Bidding began December 13, 2016, and construction began March 26, 2017. Construction is anticipated to be complete in the second half of 2018.

4.7 Friar's Branch-South Chick Creek 5 Interceptor Rehabilitation

This project involves the rehabilitation of portions of the collection system in the Friars Branch and South Chickamauga Creek 5 Sub Basins using trenchless technologies. Approximately 23,640 LF of gravity sewer line was identified for evaluation. Trenchless rehabilitation allows the City to conduct the repairs while limiting disturbances to the areas near the work site. The NTP for professional services was awarded on August 6, 2015 and SSES investigations were conducted on approximately 23,640 LF of sewer line. From the results of the SSES, approximately 9,469 LF of sanitary sewer, service pipeline, and associated manholes were designated to be rehabilitated. The PER was approved February 2, 2016 and bidding began November 18, 2017. Construction is expected to commence in the first half of 2018.

4.8 MBWWTP-Control Room Upgrades

This project involves improvements to the existing MBWWTP control room with including building renovations, computer hardware, software, and logic coding upgrades to the SCADA System. The upgrades will allow the Waste Resources Division ("WRD") to operate and manage the wastewater system more efficiently and reliable through the SCADA system. The NTP for

professional services was awarded on November 30, 2015. Bidding commenced on May 16, 2017, and construction began December 23, 2017. Construction is anticipated to be complete in the second half of 2018.

4.9 Citico PS Reliability Improvements

This project consists of the addition of an emergency backup pumping system, the addition of an emergency standby generator that is capable of running the entire station at its rated flowrate of 117 MGD, and electrical reliability improvements. The NTP for professional services was issued November 23, 2016. Construction bidding began May 16, 2017, and construction began on September 1, 2017. Construction is anticipated to be complete in the second half of 2018.

4.10 Brainerd Golf Course PS Safety Upgrade

This project involves making safety improvements to the East Brainerd Golf Course PS. This work includes the replacement and upgrade of the existing pumps, piping, valves, electrical and instrumentation equipment. The upgrades will allow the station to increase its capacity, performance and reliability and help to reduce SSOs in the area. The Request for Quotation (“RFQ”) for professional services was issued on December 20, 2016, and the project is currently in the design phase. Bidding is scheduled to begin in the first half of 2018.

4.11 Wet Weather Combined Sewer Storage – Phase 1 & Phase 2

This project is a major component of the ISS plan to reduce system overflows and stay within compliance of the EPA mandated Chattanooga CD Program. This project will construct Phase I & II of wet weather storage system at the Hamm Rd site and store peak wet weather flows, prevent sanitary sewer overflows at the West Bank Overflow, and meet the future capacity requirements as set forth in the Consent Decree. The project will also increase reliability throughout the combined and sanitary sewer system in the event of a power or mechanical failure. This project will provide the City with the system capacity necessary to approve future developments and promote growth throughout the City and surrounding areas. The NTP for professional services was awarded on November 3, 2017, and the project is currently in the planning phase. Bidding is anticipated to commence in the second half of 2018.

4.12 MBWWTP Secondary Clarifier Upgrades and Additions

The MBWWTP Secondary Upgrades and Additions project is required under Paragraph 22 and Appendix C of the CD. The project will provide evaluation and design of improvements to increase the MBWWTP secondary treatment capacity from 140 MGD to 150 MGD. Improvements involve the addition of two new secondary clarifiers, flow control to new and existing clarifiers, additional chlorine contact volume, and associated yard piping. An evaluation of the liquid stream processes at the plant will also be conducted. The NTP for professional services was issued February 12, 2015 and the PER was completed in November of 2015. The detailed design was completed and submitted to TDEC for approval on May 16, 2016 and

approval was received July 7, 2016. Bidding began July 20, 2016. Bidding was completed March 27, 2017 and construction commenced March 28, 2017. The project is anticipated to be complete in the second half of 2018.

4.13 CSOTF Study (completed)

This project has been completed. See Semi-Annual Work Progress Report No. 8 submitted July 26, 2017.

4.14 CSOTF Improvements - Phase 1

This project includes structural, instrumentation and SCADA control changes to the CSOTF facilities in improves reliability and capacity utilization. An NTP for professional services is anticipated in the first half of 2018 with an estimated construction completion in the first half of 2019.

4.15 South Chickamauga Creek 4 Rehabilitation

This project involves the rehabilitation of sanitary sewer pipe and manholes located in the South Chickamauga Creek Sewer Basin. This project will improve the reliability and structural integrity of the existing pipe and will remove unwanted inflow and infiltration from the system. Trenchless technology methods are being analyzed to reduce construction and permitting costs. An NTP for professional services is anticipated in the first half of 2018 with an estimated construction completion in the second half of 2020.

4.16 Tennessee River 13 Rehabilitation

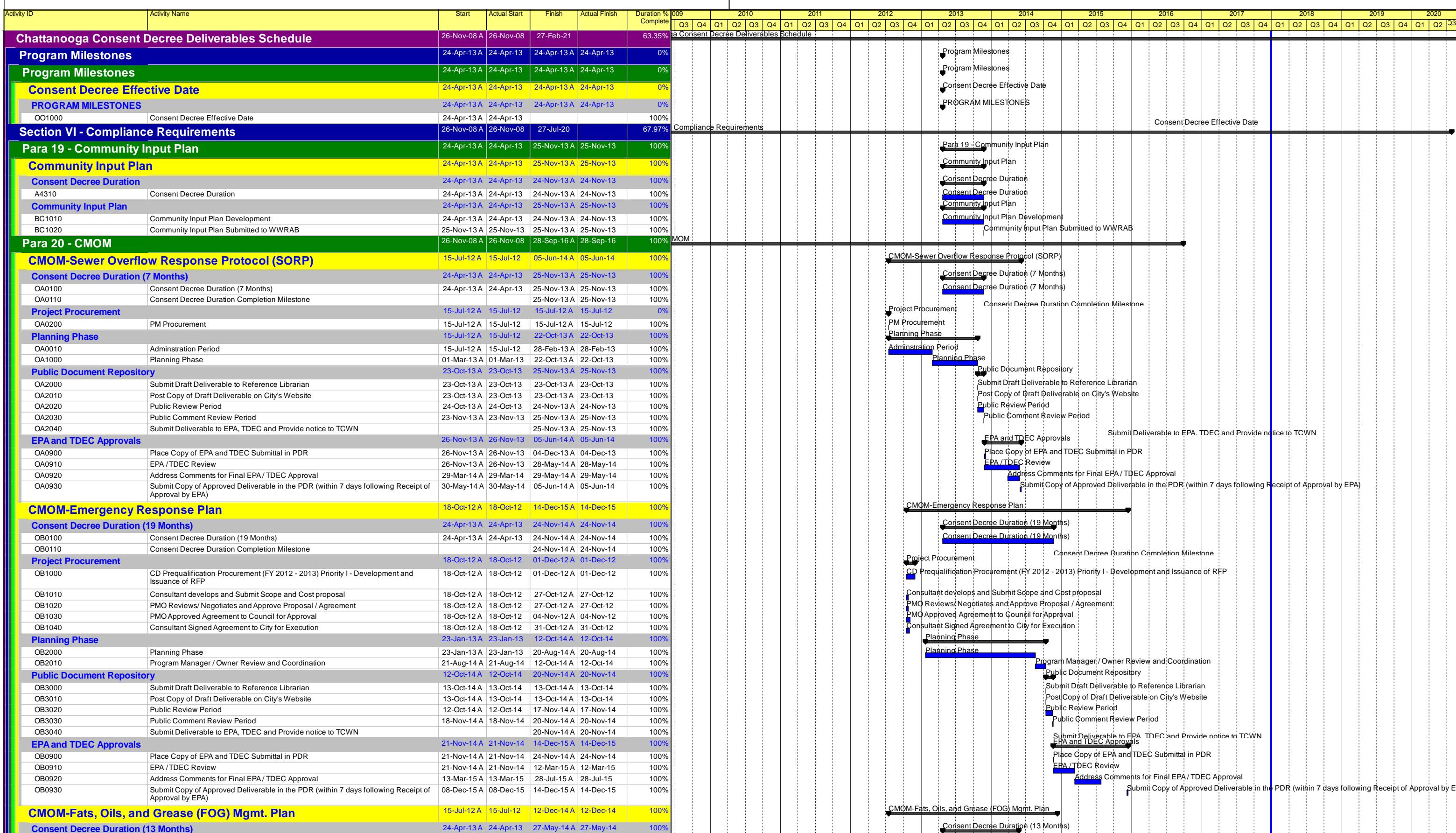
This project involves the rehabilitation of sanitary sewer pipe and manholes located in the Tennessee River Sewer Basin. This project will improve the reliability and structural integrity of the existing pipe and will remove unwanted inflow and infiltration from the system. Trenchless technology methods are being analyzed to reduce construction and permitting costs. An NTP for professional services is anticipated in the first half of 2018 with an estimated construction completion in the second half of 2020.

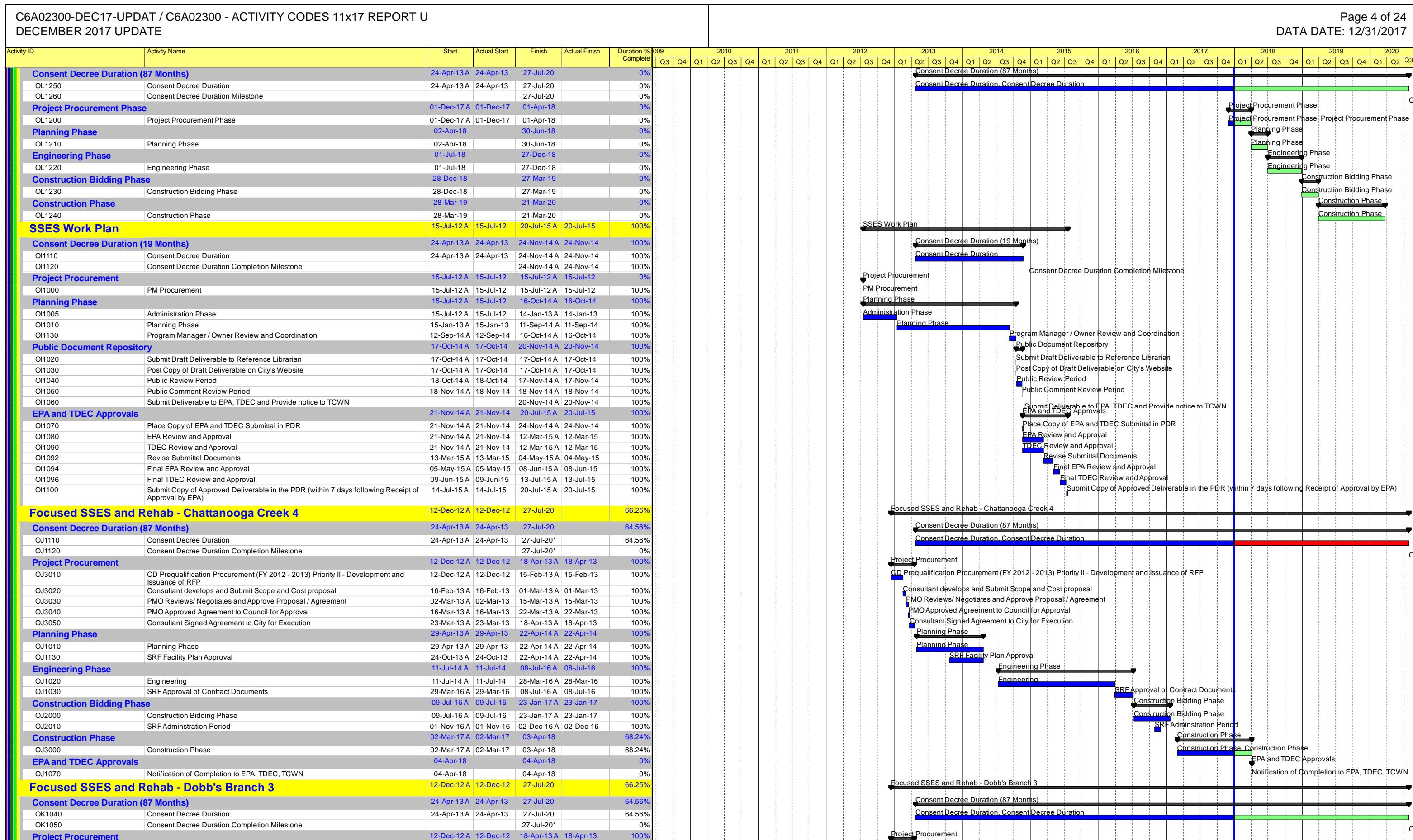
4.17 Friars Branch Interceptor Improvements - Phase 1

This project involves the rehabilitation of sanitary sewer pipe and manholes located in the Friars Branch Sewer Basin. This project will improve the reliability and structural integrity of the existing pipe and will remove unwanted inflow and infiltration from the system. Trenchless technology methods are being analyzed to reduce construction and permitting costs. An NTP for professional services is anticipated in the first half of 2018 with an estimated construction completion in the second half of 2020.

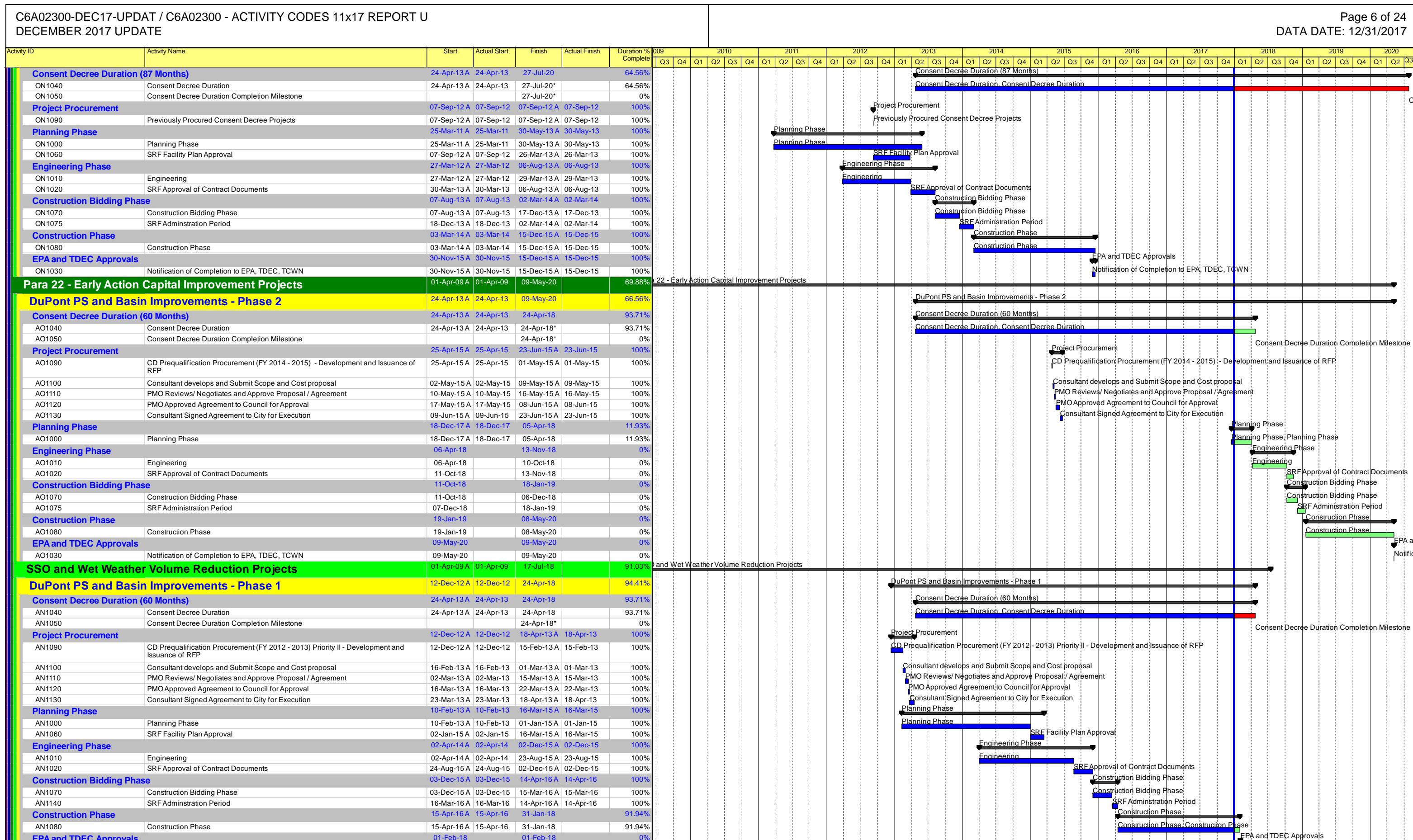
Appendix A

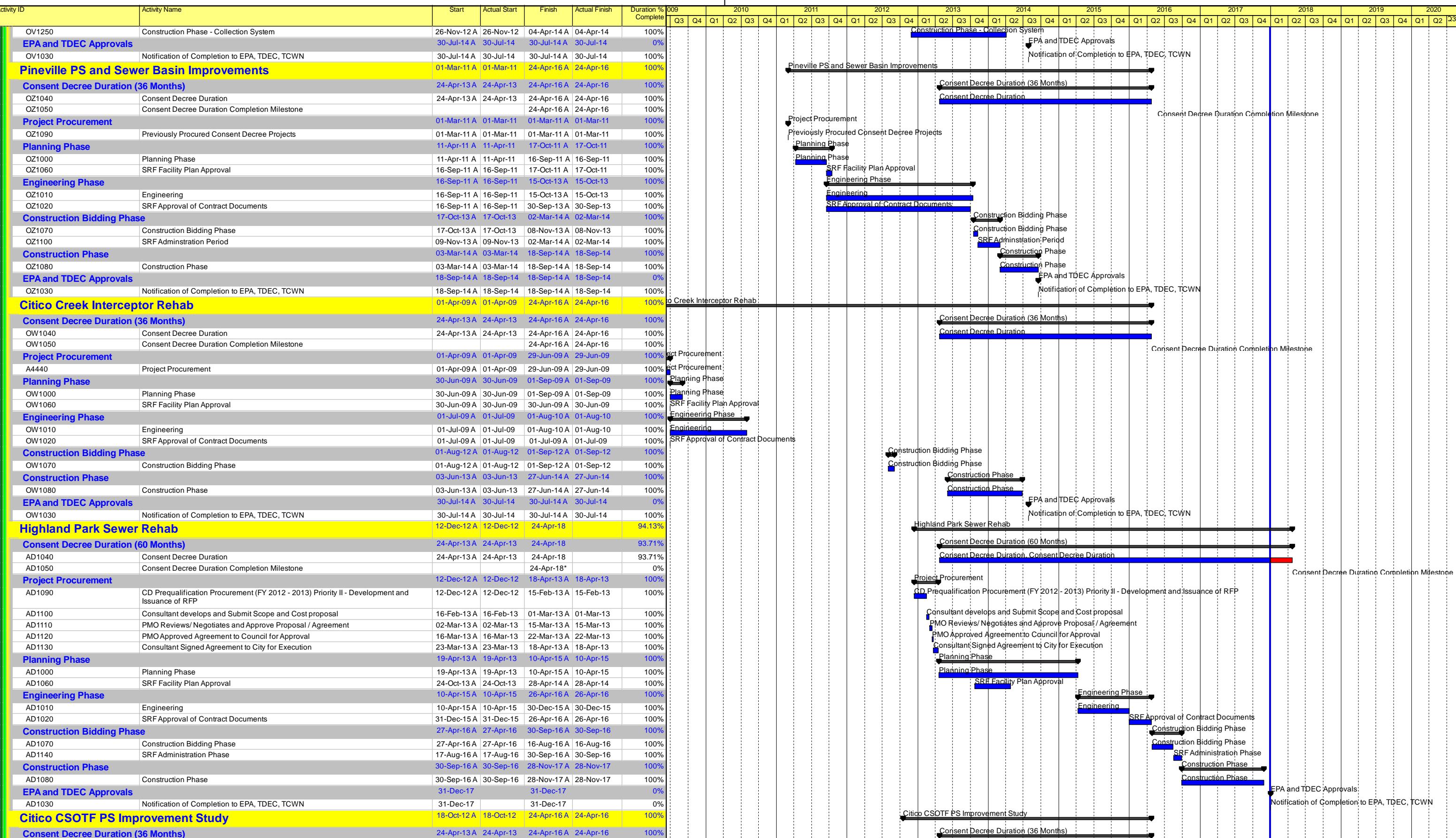
Project Schedules Gantt Chart



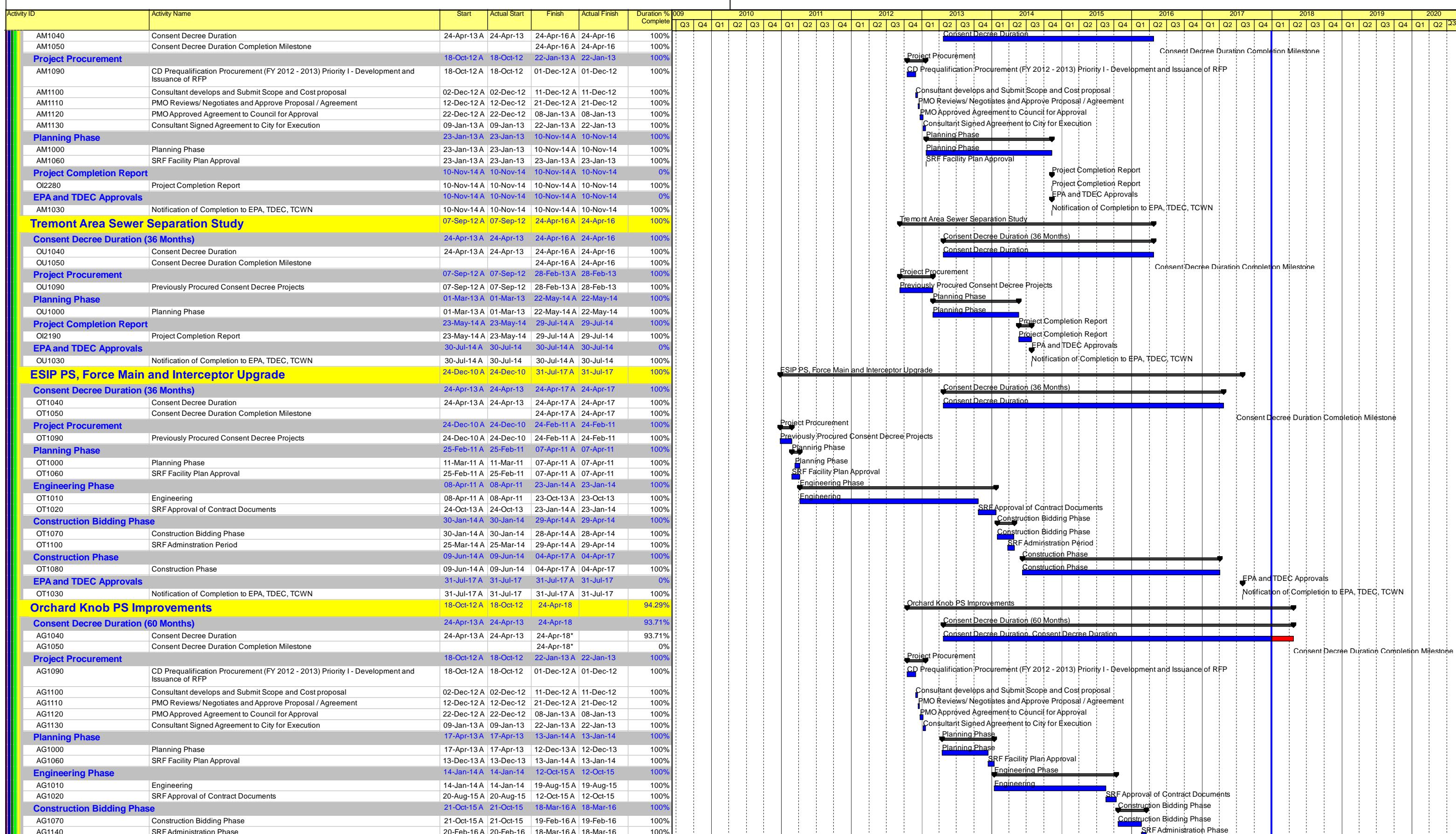


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Actual Level of Effort Baseline Milestone
Actual Work
Remaining Work

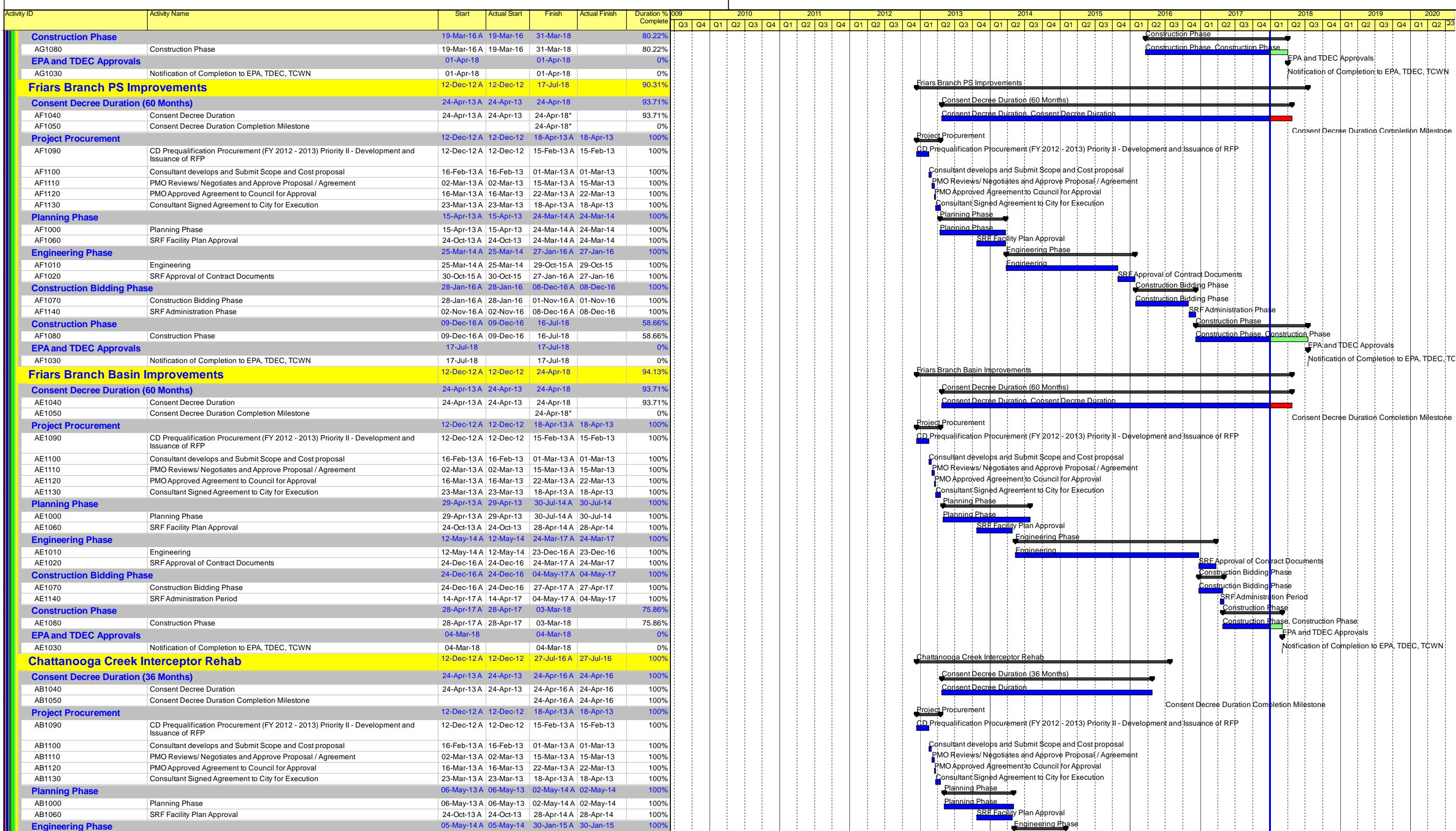




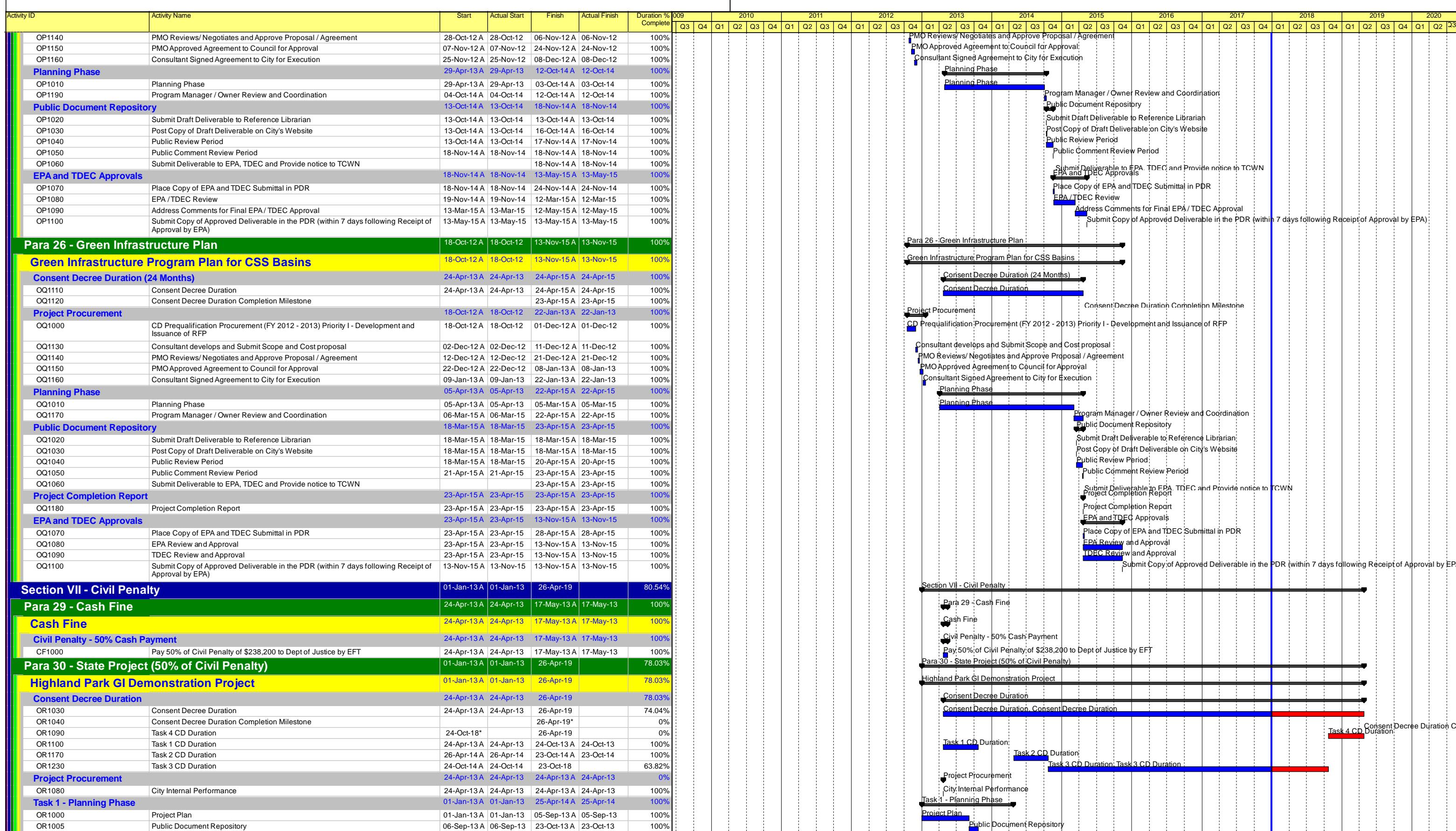
Summary
 Actual Level of Effort
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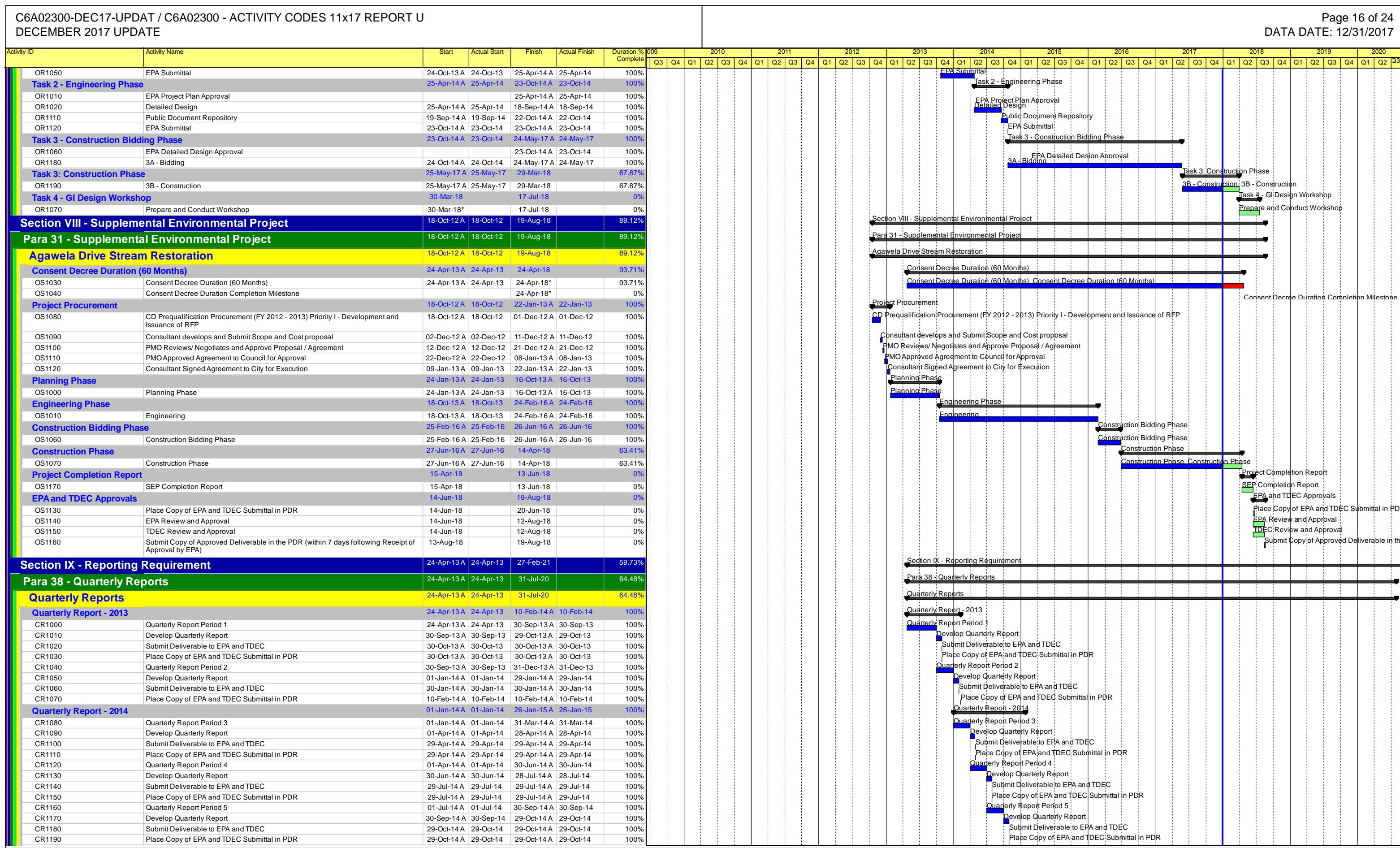
Summary
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 Baseline Milestone
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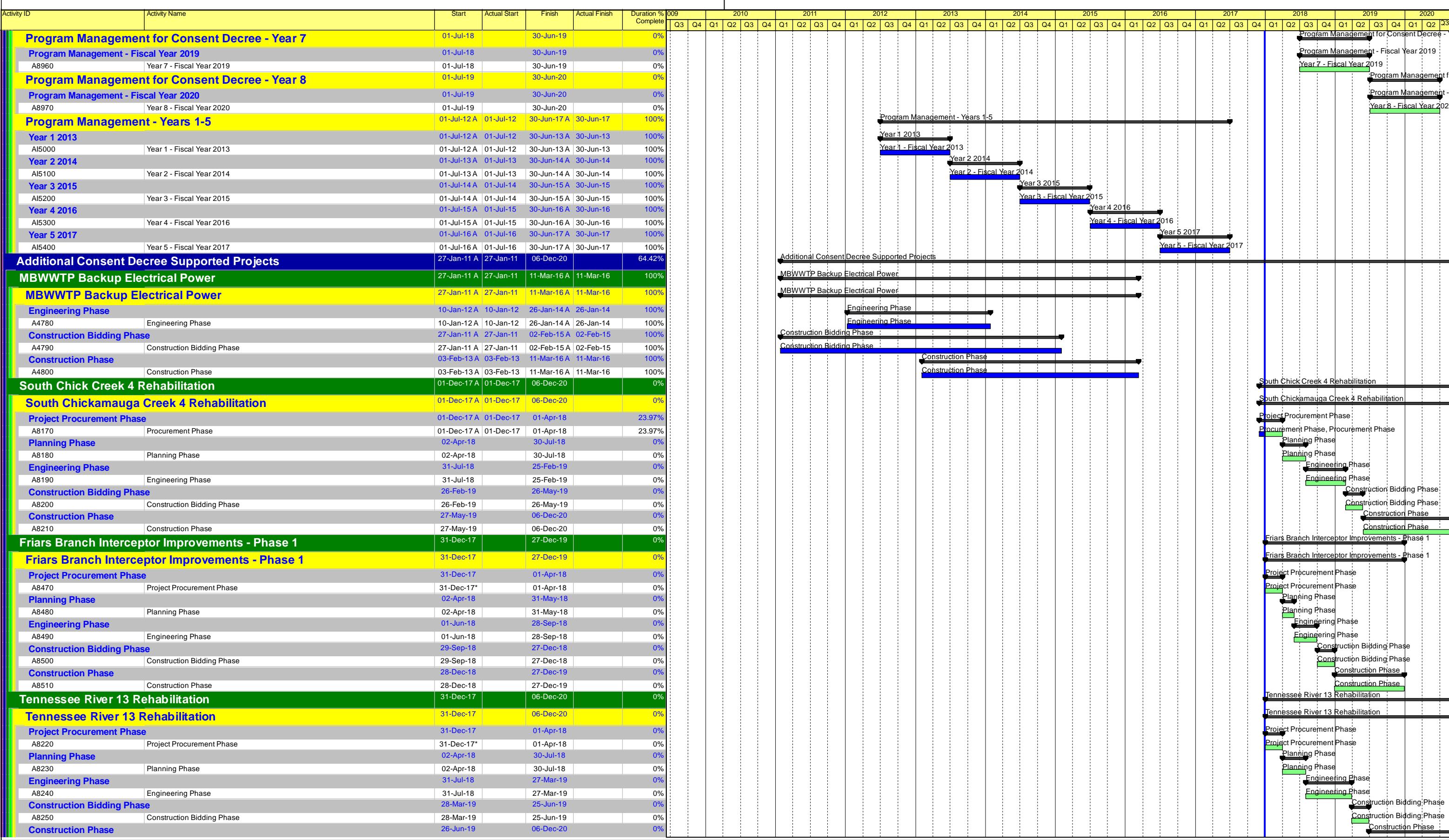


Summary Critical Remaining W...
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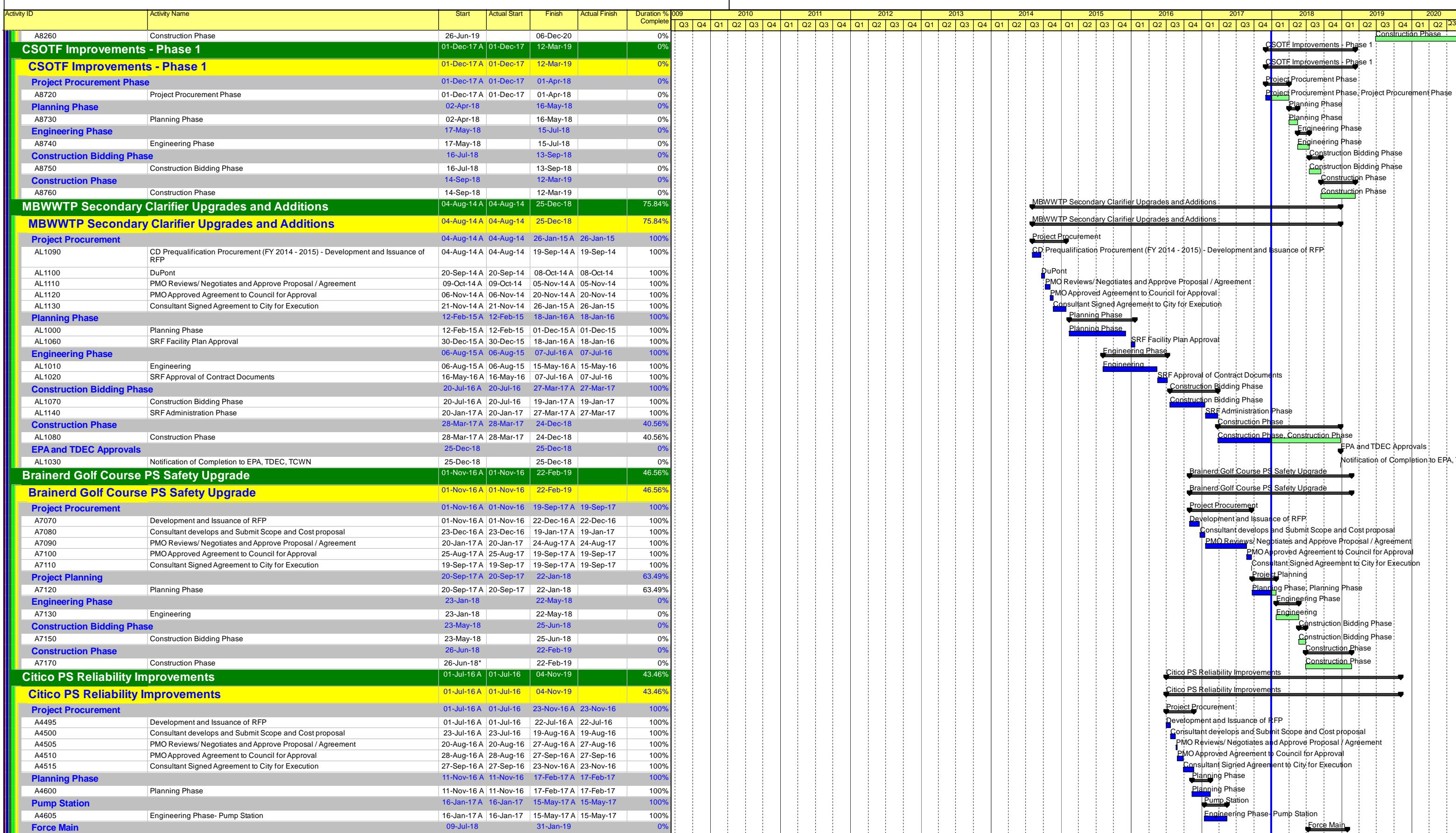


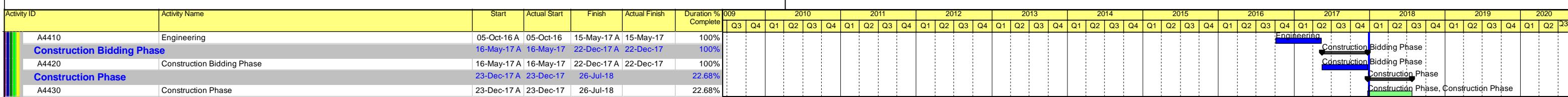
Summary Critical Remaining W...
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Summary Critical Remaining W...
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Summary Critical Remaining W...
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CHATTANOOGA CONSENT DECREE PROGRAM - PHASE I
CITY OF CHATTANOOGA, TN
WASTE RESOURCES DIVISION

JACOBS