

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TENNESSEE
(Southern Division)

THE UNITED STATES OF AMERICA)
and THE STATE OF TENNESSEE, *ex. rel.*)
JONATHAN SKRMETTI, in his)
official capacity as the Attorney General)
and Reporter of Tennessee,)

Plaintiffs,)

v.)

HAMILTON COUNTY WATER &)
WASTEWATER TREATMENT)
AUTHORITY,)

Defendant.)

Case No. 1:23-cv-00225

CONSENT DECREE

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I. INTRODUCTION

A. WHEREAS, Plaintiff, the United States of America, on behalf of the United States Environmental Protection Agency (“EPA”), has filed a Complaint (the “Complaint”) in this action concurrently with the lodging of this Consent Decree, alleging that Defendant, the Hamilton County Water and Wastewater Treatment Authority (“WWTA”), has violated and will continue to violate Section 301 of the Clean Water Act (“CWA”), 33 U.S.C. § 1311, and terms and conditions of its National Pollutant Discharge Elimination System (“NPDES”) Permit issued under Section 402 of the CWA, 33 U.S.C. § 1342; and seeking injunctive relief and civil penalties pursuant to Sections 309(b) and (d) of the CWA, 33 U.S.C. §§ 1319(b) and (d);

B. WHEREAS, Plaintiff, the State of Tennessee (“State”), acting at the request of the Tennessee Department of Environment and Conservation (“TDEC”), joined in the Complaint and seeks injunctive relief and civil penalties for WWTA’s alleged violations of the Tennessee Water Quality Control Act (“TWQCA”), Tenn. Code Ann. §§ 69-3-101 to 69-3-148, and the regulations promulgated thereunder;

C. WHEREAS, TDEC has been authorized by EPA to administer the NPDES program in Tennessee pursuant to Section 402(b) of the CWA, 33 U.S.C. § 1342(b);

D. WHEREAS, the State is also a plaintiff in this action and is joined as a party under Section 309(e) of the CWA, 33 U.S.C. § 1319(e), which requires the state in which a municipality is located to be joined as a party whenever the municipality is a party to a civil action brought by the United States under Section 309 of the CWA;

E. WHEREAS, WWTA is a “municipality” pursuant to Section 502 of the CWA, 33 U.S.C. § 1362;

F. WHEREAS, WWTa owns and operates a municipal wastewater collection and transmission system (“WCTS”) that is designed to collect and convey municipal sewage (domestic, commercial and industrial). Pursuant to an Interjurisdictional Agreement between WWTa and the City of Chattanooga (“Chattanooga”), most of the municipal sewage collected and conveyed by the WCTS is ultimately conveyed to Chattanooga’s municipal wastewater collection and transmission system for treatment at the Moccasin Bend Wastewater Treatment Plant owned and operated by Chattanooga. A portion of the municipal sewage collected and conveyed by the WCTS is conveyed to WWTa’s Signal Mountain Wastewater Treatment Plant (the “WWTP”) for treatment;

G. WHEREAS, WWTa is permitted to operate the WWTP and its associated portion of the WCTS pursuant to NPDES Permit No. TN0021211 issued to WWTa by the State, and WWTa is also permitted under a State Operating Permit (SOP-89044) to operate the portion of the WCTS that transmits wastewater to Chattanooga’s municipal wastewater collection and transmission system for treatment at the Moccasin Bend Wastewater Treatment Plant;

H. WHEREAS, WWTa has reported to EPA and TDEC numerous Sanitary Sewer Overflows (“SSOs”) from its WCTS since at least June 2009;

I. WHEREAS, WWTa has reported to EPA and TDEC numerous Prohibited Bypasses at its WWTP since at least January 2012;

J. WHEREAS, the United States and the State contend that these SSOs and Prohibited Bypasses are violations of the CWA, the TWQCA, WWTa’s NPDES Permit, and WWTa’s State Operating Permit (“SOP”);

K. WHEREAS, this Consent Decree requires WWTa to develop, submit, finalize, and implement plans for the continued improvement of its WCTS and for the elimination of

SSOs from its WCTS, elimination of Prohibited Bypasses from its WWTP, and to ensure compliance with the CWA and the TWQCA;

L. WHEREAS, WWTa does not admit any liability to the United States or the State arising out of the transactions or occurrences alleged in the Complaint;

M. WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties and that this Consent Decree is fair, reasonable, and in the public interest;

N. NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section II, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

II. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and over the Parties. This Court has supplemental jurisdiction over the state law claims asserted by the State pursuant to 28 U.S.C. § 1367(a). Venue lies in this District pursuant to Section 309(b) of the CWA, 33 U.S.C. §1319(b), and 28 U.S.C. §§ 1391(b) and 1395, because the violations alleged in the Complaint are alleged to have occurred in this judicial district and WWTa is located in this judicial district. For purposes of this Decree, WWTa consents to the Court's jurisdiction over this Decree and any such action to enforce this Decree, and over WWTa, and consents to venue in this judicial district.

2. For purposes of this Consent Decree, WWTa agrees that the Complaint states claims upon which relief may be granted pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and the TWQCA, Tenn. Code Ann. §§ 69-3-101 to 69-3-148.

III. APPLICABILITY

3. The obligations of this Consent Decree apply to and are binding upon the United States and the State, and upon WWTa and any successors, assigns, or other entities or persons otherwise bound by law.

4. No transfer of ownership or operation of the Sewer System shall relieve WWTa of its obligation to ensure that the terms of this Consent Decree are implemented for as long as the Decree remains in effect, unless: (a) the transferee agrees with WWTa in writing (“Written Agreement”) to undertake the obligations of the Consent Decree, except the obligations imposed by Section VIII (Civil Penalty), until the Decree is terminated pursuant to Section XX (Termination); (b) the transferee agrees in the Written Agreement to be substituted for WWTa as the defendant to the Consent Decree and thus be bound by its terms; (c) EPA approves the substitution of the transferee for WWTa as the defendant to the Decree; and (d) upon joint motion or motion by the United States, the Court approves the substitution of the transferee for WWTa as the defendant to the Decree. Furthermore, the Written Agreement between WWTa and the transferee shall provide that it is enforceable by Plaintiffs as third-party beneficiaries. At least 90 Days prior to such transfer, WWTa shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed Written Agreement between WWTa and the proposed transferee, to the United States in accordance with Section XVI (Notices). Any attempt to

transfer ownership or operation of the Sewer System without complying with this Paragraph constitutes a violation of this Decree.

5. WWTa shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Decree, as well as to any contractor or subcontractor retained to perform work required under this Consent Decree. WWTa shall condition any such contract upon performance of the work in conformity with the terms of this Consent Decree.

6. In any action to enforce this Consent Decree, WWTa shall not raise as a defense the failure by any of its officers, directors, employees, agents, contractors or subcontractors to take any actions necessary to comply with the provisions of this Consent Decree.

IV. OBJECTIVES

7. The objectives of this Consent Decree are for the WWTa to eliminate Sanitary Sewer Overflows, and to achieve and maintain full compliance with the CWA, the TWQCA, the NPDES Permit and the State Operating Permit. All plans, measures, reports, construction, maintenance, operational requirements, and other obligations in this Consent Decree or resulting from the activities required by this Consent Decree shall be designed to eliminate SSOs. The EPA and the State expect the WWTa to certify, when submitting plans under this Consent Decree that the plans have been designed to remediate the identified causes of SSOs.

V. DEFINITIONS

8. Terms used in this Consent Decree that are defined in the CWA or in regulations promulgated pursuant to the CWA shall have the meanings assigned to them in the CWA or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

a. “Average Flow” The average flow is the average of the daily volumes to be received for a continuous 12-Month period expressed as a volume per unit time.

b. “Building Backup” shall mean a wastewater release or backup into a building that is caused by blockages, flow conditions, or other malfunctions in the WCTS. A wastewater backup or release that is caused by blockages, flow conditions, or other malfunctions of a portion of a Private Lateral located on private property outside of WWTAs’ right-of-way or easement is not a Building Backup.

c. “Calendar Quarter” shall mean the three (3)-Month periods ending on March 31, June 30, September 30, and December 31.

d. “Calendar Year” shall mean the twelve (12)-Month period starting on January 1 and ending on December 31.

e. “Capacity, Management, Operations, and Maintenance” or “CMOM” shall mean a program of accepted industry practices to properly manage, operate and maintain sanitary wastewater collection, transmission and treatment systems, investigate capacity-constrained areas of these systems, and respond to SSO events.

f. “Certification” or “certify” when used in this Consent Decree shall require WWTAs to comply with Paragraph 18 of this Consent Decree.

g. “Complaint” shall mean the complaint filed by the United States and the State in this action.

h. “Consent Decree” or “Decree” shall mean this Decree and all appendices attached hereto (listed in Section XXVI). In the event of a conflict between this document and any appendix, this document shall control.

i. “CWA” shall mean the Clean Water Act, as amended, 33 U.S.C. §§ 1251, *et seq.*

j. “Date of Lodging” shall mean the date this Consent Decree is filed for lodging with the Clerk of the Court for the United States District Court for the Eastern District of Tennessee.

k. “Day” shall mean a calendar day unless expressly stated to be a business day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next business day.

l. “Deliverable” shall mean any written document required to be submitted to EPA and/or TDEC by or on behalf of WWTa pursuant to Sections VII (Compliance Requirements), IX (Reporting Requirements), and pursuant to Appendix E (the “Capacity, Management, Operations and Maintenance Programs”) of this Consent Decree, except for written reports required to be submitted pursuant to Paragraph a.(2) of Appendix E (Capacity, Management, Operations and Maintenance Programs).

m. “EPA” shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.

n. “Effective Date” shall have the definition provided in Section XVII.

o. “Excessive Inflow/Infiltration” or “Excessive I/I” shall have the meaning provided in 40 C.F.R. § 35.2005(b)(16).

p. “Force Main” shall mean any pipe owned or operated by WWTa that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

q. “Gravity Sewer Line” or “Gravity Sewer” shall mean any pipe owned and operated by WWTa that receives, contains and conveys wastewater not normally under pressure, but is intended to flow unassisted under the influence of gravity.

r. “Group” shall mean a selection of Sewerbasins that have been grouped together for purposes of prioritizing assessment and rehabilitation work under this Consent Decree. There are five Groups (Group 1, Group 2, Group 3, Group 4, and Group 5 which are identified and shown on the map contained in Appendix B-3.

s. “Infiltration,” as defined by 40 C.F.R. § 35.2005(b)(20), shall mean water other than wastewater that enters the WCTS (including sewer service connections and foundation drains) from the ground through such means as, but not limited to, defective pipes, pipe joints, connections, or manholes.

t. “Inflow,” as defined by 40 C.F.R. § 35.2005(b)(21), shall mean water other than wastewater that enters the WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, stormwater, surface runoff, street wash waters, or drainage.

u. “Infiltration/Inflow” or “I/I” shall mean the total quantity of water from Inflow and Infiltration, without distinguishing the source.

v. “Major Gravity Line” shall mean any of the following:

(1) all Gravity Sewer Lines that are twelve (12) inches in diameter or larger;

(2) all Gravity Sewer Lines that convey wastewater from one Pump Station service area to another Pump Station service area; and

(3) all Gravity Sewer Lines that have caused or contributed to, or that WWTA knows will likely cause or contribute to, capacity-related SSOs and/or Prohibited Bypasses.

w. “Month” shall mean one (1) calendar month running from the numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30 or 31 days. In the event a triggered event would occur on a day of the month that does not exist (for example, on February 30), then the event shall be due on the first day of the following month (for example, March 1).

x. “NPDES” shall mean the National Pollutant Discharge Elimination System authorized under Section 402 of the CWA, 33 U.S.C. § 1342.

y. “NPDES Permit” shall mean NPDES Permit No. TN0021211 issued to WWTA by TDEC pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, for the Signal Mountain Wastewater Treatment Plant, and any future extended, modified, or reissued permits.

z. “Paragraph” shall mean a portion of this Decree identified by an Arabic numeral.

aa. “Parties” shall mean the United States on behalf of EPA, the State on behalf of TDEC, and WWTA.

bb. “Plaintiffs” shall mean the United States on behalf of EPA and the State on behalf of TDEC.

cc. “Private Lateral” shall mean that portion of a sanitary sewer conveyance pipe that extends from the wastewater main to the single-family, multi-family, apartment, or other dwelling unit or commercial or industrial structure to which wastewater service is or has been provided.

dd. “Prohibited Bypass” shall mean an intentional diversion of waste streams from any portion of a treatment facility that is prohibited as set forth at 40 C.F.R. § 122.41(m). Requirements to develop and implement an approved plan to eliminate bypasses are specified in Paragraph 28 of this Consent Decree.

ee. “Public Document Repository” or “PDR” shall mean the downtown branch of the Chattanooga Public Library, located at 1001 Broad Street, Chattanooga, TN 37402; and WWTa’s website, <http://wwta.hamiltontn.gov/>.

ff. “Pump Station” shall mean facilities owned or operated by WWTa that are composed of pumps that lift wastewater to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that pump station.

gg. “Sanitary Sewer Overflow” or “SSO” shall mean any discharge of wastewater to waters of the United States or waters of the State from WWTa’s Sewer System through a point source not specified in any NPDES permit, as well as any overflow, spill, or release of wastewater to public or private property from the Sewer System that may not have reached waters of the United States or the State, including all Building Backups.

hh. “SCADA” shall mean supervisory control and data acquisition.

ii. “Section” shall mean a portion of this Decree identified by a Roman numeral.

jj. “Service Area” shall mean the subdivisions of WWTAs WCTS depicted on Appendix B-1.

kk. “Sewerbasin” shall mean the subdivisions of WWTAs WCTS containing sewers that are primarily hydraulically linked. A map of WWTAs WCTS depicting the Sewerbasins is contained in Appendix B-2.

ll. “Sewer System” shall mean the WCTS and the WWTP.

mm. “State” shall mean the State of Tennessee, acting on behalf of TDEC.

nn. “TDEC” shall mean the Tennessee Department of Environment and Conservation and any successor departments or agencies of the State.

oo. “Timely,” when applied to the submittal of a Deliverable, document, notice, or report shall mean submitted no later than the deadline established in this Consent Decree (or in a document approved pursuant to this Consent Decree) and containing all of the elements pertaining to the submittal as set forth in this Consent Decree (or in a document approved pursuant to this Consent Decree). “Timely,” when applied to the implementation of any Work, shall mean implemented no later than the deadline established in this Consent Decree (or in a document approved pursuant to this Consent Decree) and in accordance with the elements pertaining to such Work as set forth in this Consent Decree (or in a document approved pursuant to this Consent Decree).

pp. “TWQCA” shall mean the Tennessee Water Quality Control Act, Tenn. Code Ann. §§ 69-3-101 *et seq.*, and the regulations promulgated thereunder.

qq. “United States” shall mean the United States of America, acting on behalf of EPA.

rr. “Wastewater Collection and Transmission System” or “WCTS” shall mean the municipal wastewater collection, retention and transmission system, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, pumps, manholes, and appurtenances thereto, which are owned or operated by WWTa.

ss. “Wastewater Treatment Plant” or “WWTP” shall mean devices or systems used in the storage, treatment, recycling, and reclamation of municipal wastewater. For purposes of this Consent Decree, this definition shall include all facilities owned, managed, operated, and maintained by WWTa, including but not limited to the Signal Mountain Wastewater Treatment Plant and all components of that treatment plant.

tt. “Work” shall mean all activities that WWTa is required to perform under this Consent Decree.

uu. “WWTa” or “Defendant” shall mean the Hamilton County Water and Wastewater Treatment Authority of Hamilton County, Tennessee, including all of its departments, agencies, instrumentalities, and any successor thereto.

VI. REVIEW AND CERTIFICATION OF DELIVERABLES, DOCUMENTS, NOTICES, AND REPORTS

10. WWTa shall provide a copy of any Deliverable, document, notice, or report required by this Consent Decree to TDEC at the time it is sent to EPA. WWTa shall submit all Deliverables, documents, notices, and reports in accordance with Section XVI (Notices).

11. Public Document Repository/Public Review Requirement.

a. WWTa shall post on its website instructions for how the public may request email notices of future Deliverables, documents, notices, and reports required by this Consent Decree. Prior to the submission of any Deliverable, document, notice, or report required by this Consent Decree, WWTa shall post a copy of such Deliverable, document, notice, or report on its website and provide notice of such action by email to all parties who have requested notice. Additionally, prior to the submission of any Deliverable, document, notice, or report required by this Consent Decree, WWTa shall send to the downtown branch of the Chattanooga Public Library, located at 1001 Broad Street, Chattanooga, TN 37402, a memorandum containing a brief synopsis of the Deliverable, document, notice, or report; instructions on how to find it on WWTa's website; and a statement on whether WWTa will accept comments on a Deliverable pursuant to Paragraph 11.b., below.

b. WWTa shall post on its website instructions for submitting comments and shall allow the public a period of forty-five (45) Days to comment on Deliverables required by Section VII (Compliance Requirements). In addition, for each such Deliverable, WWTa shall provide public notice prior to commencement of the forty-five (45) Day public comment period. Such public notice shall describe the availability of the Deliverable on the WWTa website and provide instructions for submitting comments during the forty-five (45) Day public comment period, and shall be provided in the following manner:

(i) for each Deliverable required by Section VII of this Consent Decree other than the Group Evaluation Reports/Rehabilitation Plans required by Paragraph 23, and the Signal Mountain Remediation Plan required by Paragraph 28, by (A) placing a ¼ page ad in the

Chattanooga Times Free Press and in the Chattanooga News Chronicle, (B) providing prominent notice on the WWTa website and on WWTa's social media pages, and (C) sending a copy of the notice to the email addresses and mail addresses of the community groups provided in Appendix F;

(ii) for the Group Evaluation Reports/Rehabilitation Plans required by Paragraph 23, and the Signal Mountain Remediation Plan required by Paragraph 28, such notice shall include notice of the public meetings required by this sub-paragraph 11(b)(ii) and shall be provided by: (A) mailing the notice to every WWTa customer (such mailing may be accomplished by including the notice with a mailed utility bill delivered by U.S. Mail, mailing the notice independently by U.S. Mail, or, for customers who opt in to a paperless or e-billing program only, by email), (B) placing a ¼ page or larger ad in the Chattanooga Times Free Press and in the Chattanooga News Chronicle, (C) providing prominent notice on the WWTa website and on WWTa's social media pages, and (D) sending a copy of the notice to the email addresses and mail addresses of the community groups provided in Appendix F. At any time, any community group not listed in Appendix F may contact WWTa and EPA requesting that they add the group to the list. For the Group Evaluation Reports/Rehabilitation Plans required by Paragraph 23, and the Signal Mountain Remediation Plan required by Paragraph 28, during the public comment period, but no less than 14 Days before the public comment period for the Deliverable closes, WWTa shall hold two public meetings to explain the relevant Deliverable, answer any questions from the public about that Deliverable, and to explain how to comment on the Deliverable. For the Group Evaluation Reports/Rehabilitation Plans required by Paragraph 23, one of these meetings will be in Red Bank and the other in

East Ridge. For the Signal Mountain Remediation Plan required by Paragraph 28, one of these meetings will be in Signal Mountain and the other will be in Red Bank. EPA and TDEC may, in their unreviewable discretion, approve alternate locations for the meetings proposed by WWTa. These meetings will not occur on the same day. One meeting will begin between 6 and 9 pm EST. The other meeting will begin between 10 am and 5 pm EST. WWTa will provide time and location of these meetings in the notice discussed above, on the website, and in a local newspaper. After the forty-five (45)-Day comment period, WWTa shall consider any public comments received for a period of up to fifteen (15) Days before submitting such Deliverable to EPA and TDEC. WWTa shall include with such Deliverable an appendix containing all public comments received on the Deliverable and a description of WWTa's response to such comments including any actions taken by WWTa to address, incorporate or respond to such public comments.

c. Within seven (7) Days after submitting a Deliverable to EPA and TDEC, WWTa shall place a copy of the submitted version of the Deliverable in the PDR in the same manner prescribed in Paragraph 11.a. The originally submitted version of the Deliverable shall be clearly marked as "Draft Submitted for Review by EPA and TDEC." Within seven (7) Days after EPA's approval, approval contingent upon conditions, partial approval, or modification by EPA pursuant to this Section, WWTa shall place a copy of such final version of the Deliverable in the PDR in the same manner prescribed in Paragraph 11.a. The final version of the Deliverable shall be clearly identified as "Final."

d. WWTa shall maintain in the PDR until termination of this Consent Decree pursuant to Section XX (Termination) all versions of Deliverables, documents,

notices, and reports required by this Consent Decree and all written comments received from EPA and the public on any Deliverable.

12. EPA Action on Deliverables. After review of any Deliverable, including the comments and responses thereto, that is required to be submitted pursuant to this Consent Decree, EPA, after consultation with TDEC, shall in writing:

- a. Approve the submission;
- b. Approve the submission upon specified conditions;
- c. Approve part of the submission and disapprove the remainder; or
- d. Disapprove the submission.

13. Approved Deliverables. If a Deliverable is approved by EPA pursuant to Paragraph 12.a, WWTa shall take all actions required by the Deliverable in accordance with the schedules and requirements of the Deliverable as approved. If the Deliverable is conditionally approved or approved only in part pursuant to Paragraph 12.b or 12.c, WWTa shall, upon written direction from EPA, after consultation with TDEC, take all actions required by the approved Deliverable that EPA, after consultation with TDEC, determines are technically severable from any disapproved portions, subject to WWTa's right to dispute only the specified conditions or the disapproved portions under Section XII (Dispute Resolution). Following EPA approval of any Deliverable or portion thereof, such Deliverable or portion thereof so approved shall be incorporated into and become enforceable under this Consent Decree. Approvals given by EPA prior to the Effective Date of this Consent Decree shall become effective and binding under this Decree upon the Effective Date.

14. Disapproved Deliverables.

a. If the Deliverable is disapproved in whole or in part pursuant to Paragraph 12.c or 12.d, subject to WWTa's right to dispute only the specified conditions or the disapproved portions under Section XII (Dispute Resolution), WWTa shall, within thirty (30) Days or such other time as EPA and WWTa agree to in writing, correct all deficiencies and resubmit to EPA the Deliverable, or disapproved portion thereof, for approval, in accordance with Paragraphs 12 and 13 above. If the resubmission is approved in whole or in part, WWTa shall proceed in accordance with Paragraph 13 above.

b. Any stipulated penalties applicable to the original Deliverable, as provided in Section X (Stipulated Penalties) shall accrue during the thirty (30)-Day period or other specified period, but shall not be payable unless the resubmitted Deliverable is untimely or is disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of WWTa's obligations under this Consent Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

c. If EPA disapproves a Deliverable in whole pursuant to paragraph 12.d, EPA will instruct WWTa, in its unreviewable discretion, on whether resubmission shall be subject to a 30-Day public comment period.

15. Resubmitted Deliverable. If a resubmitted Deliverable, or portion thereof, is disapproved in whole or in part, EPA, after consultation with TDEC, may again require WWTa to correct any deficiencies, in accordance with Paragraph 14.a above, or may itself correct any deficiencies, subject to WWTa's right to invoke Dispute Resolution under Section XII and the right of EPA to seek stipulated penalties as provided in Paragraph 14.b. Upon EPA's correction

of any deficiencies, such resubmitted Deliverable, or portion thereof, will be incorporated into and become enforceable under this Consent Decree and shall be implemented by WWTa according to the approved schedule, subject to WWTa's right to invoke Dispute Resolution.

16. Timing of Review of Deliverables. If EPA issues written comments and decisions on a Deliverable submitted pursuant to Section VII (Compliance Requirements) more than 90 Days after receipt of such submission, any subsequent deadline or milestone that is dependent upon such comments or decisions shall be extended. The length of the extension shall be determined by calculating the number of Days between EPA's receipt of the submission and the date of EPA's written response, less 90 Days. Within thirty (30) Days of the date that WWTa knows or should know of a deadline or milestone that WWTa believes is extended under this Paragraph, WWTa shall inform EPA, in writing, of its belief and the amount of time WWTa believes the deadlines or milestones are extended. If EPA disagrees with WWTa's determination that a deadline is dependent upon such comments or decisions, EPA shall inform WWTa in writing. WWTa may dispute EPA's conclusion regarding whether a deadline is dependent upon such comments or decisions pursuant to Section XII (Dispute Resolution).

17. Revisions to Deliverables. The Parties recognize that WWTa may need or want to revise certain Deliverables during the term of this Consent Decree. WWTa may revise Deliverables in accordance with the following:

a. WWTa may revise the form of any Deliverable without consulting Plaintiffs. Within seven (7) Days after making such revision, WWTa shall (1) post a copy of the revised Deliverable on its website and provide notice of such action by email to all parties who have requested notice, and (2) send to the downtown branch of the Chattanooga Public Library, located at 1001 Broad Street, Chattanooga, TN 37402, a

memorandum containing a brief synopsis of the revised Deliverable and instructions on how to find the revised Deliverable on WWTa's website.

b. WWTa may revise the substance of any Deliverable only upon written approval from EPA, after consultation with TDEC. Such revisions shall constitute non-material changes to this Consent Decree for purposes of Section XIX (Modification). When revising the substance of any Deliverable, WWTa shall follow the requirements of Paragraph 11 to the same extent those requirements would apply to the initial submission of such Deliverable.

18. Certification. WWTa shall sign and certify all Deliverables, notices, documents, and reports required to be submitted pursuant to this Consent Decree as follows:

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 have no personal knowledge that the information submitted is other than 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.

VII. COMPLIANCE REQUIREMENTS

19. Obligation to Perform Work. No later than the Effective Date, WWTa shall begin to implement the Work pursuant to this Consent Decree. All Work identified in this Section shall be completed no later than twenty (20) years after the Effective Date. All Work

shall be performed using sound engineering practices and sound construction, management, and operation practices to ensure that the operation of the Sewer System will allow the WWTa to comply with the CWA and the objectives of this Consent Decree to eliminate all SSOs and remediate the WCTS to prevent SSOs, including practices to improve the resilience of the Sewer System. Sound engineering practices may include, but are not limited to, appropriate provisions of the *Handbook: Sewer System Infrastructure Analysis and Rehabilitation*, EPA/625/6-91/030, 1991; *Existing Sewer Evaluation and Rehabilitation*, WEF MOP FD-6, 2010; *Computer Tools for Sanitary Sewer System Capacity Analysis and Planning*, EPA/600/R-07/111, October 2007; the most current edition of the *Design Criteria for Review of Sewage Works Construction and Documents* in accordance with Tenn. Comp. R. & Regs., ch. 0400-40-02-.03; EPA's *Creating Resilient Water Utilities (CRWU) Initiative*, found at <https://www.epa.gov/crwu>; and EPA's *Climate Resilience Evaluation and Awareness Tool Version 3.0* (CREAT 3.0), referenced at EPA 815-B-16-004, May 2016, and currently at <https://www.epa.gov/crwu/build-climate-resilience-your-utility>; and the *Pumping Systems* chapter of the most current version of the Water Environment Federation's *Manual of Practice FD-4, Design of Wastewater and Stormwater Pumping Stations*.

20. Early Action Projects. Based on previous investigations, WWTa has identified certain rehabilitation and other projects, which shall be referred to as "Early Action Projects," that are intended to remediate conditions that are causing SSOs and/or Prohibited Bypasses and other violations alleged in the Complaint. The Early Action Projects are identified and described in Appendix A. WWTa contends that the Early Action Projects are projects that will have the most immediate impact on the overall goal of reducing I/I and otherwise improving the

performance of the Sewer System. The projects will address rehabilitation in the East Ridge, Lookout Mountain, Red Bank, and Soddy Daisy Basins. These projects include the following:

- a. Soddy-Daisy Equalization Station
- b. East Ridge Sub-basins 3C and 4B Rehab
- c. Lookout Mountain Sub-basins 2, 5, 6, and 9 Rehab
- d. Redbank Sub-basins 5 Rehabilitation
- e. Red Bank Sub-basin 6 Rehabilitation
- f. Red Bank Sub-basin 7 Rehabilitation

21. The Early Action Projects identified in Paragraph 20 have a total estimated cost of approximately \$24.3 million, and are more particularly described in Appendix A. WWTa shall complete each of these Early Action Projects in accordance with the schedules and deadlines set forth in Appendix A. All of the Early Action Projects shall be completed no later than thirty-six (36) Months after the Effective Date of this Consent Decree. Any change to the list of Early Action Projects or the schedules set forth in Appendix A that has been approved by EPA, after consultation with TDEC, shall not constitute a material change to this Consent Decree for purposes of Paragraph 83.

22. Sanitary Sewer Evaluation/Rehabilitation (“SSER”) Work Plan. Within thirteen (13) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a SSER Work Plan that provides for the continual assessment, analysis, and rehabilitation of the entire WCTS infrastructure, including Groups 1-5 and the Residual Sewerbasin Group, as described below, to, among other things, eliminate/store/capture for treatment I/I, and eliminate structural defects and the other conditions causing, or that are likely to cause, SSOs and/or Prohibited Bypasses. The SSER Work Plan shall establish procedures for

setting priorities and expeditious schedules for undertaking the WCTS assessment and rehabilitation components set forth in Paragraphs 22.a through 22.i below with the objective of eliminating SSOs and remediating the WCTS to prevent SSOs. In developing these priorities and expeditious schedules, WWTa shall take into consideration the nature and frequency of customer complaints; results of flow monitoring, including flow isolation studies; location and cause of SSOs and Prohibited Bypasses; any remedial measures already undertaken; field crew work orders; any preliminary sewer assessments; proximity of SSOs and Prohibited Bypasses to the Tennessee River; and any other relevant information. In addition, areas near surface waters that have been included on TDEC's CWA Section 303(d) list of impaired waters for pathogens shall also receive priority by WWTa. Finally, WWTa shall also consider areas that have been identified by EPA as potentially having environmental justice issues (minority and/or low-income neighborhoods) when developing the priorities. The SSER Work Plan shall also include standard procedures for an information management system, performance goals for each of the components of the SSER Work Plan set forth below, and procedures for analysis of the effectiveness of completed rehabilitation. The SSER Work Plan shall include the following components:

- a. Corrosion Defect Identification. The Corrosion Defect Identification component of the SSER Work Plan shall establish standard procedures for inspecting and identifying WCTS infrastructure that is either corroded or at risk of corrosion. The Corrosion Defect Identification component shall include a system for prioritizing repair of existing corrosion defects, development of corrosion identification forms, and procedures for a corrosion defect analysis.

b. Manhole Condition Assessment and Rehabilitation. The Manhole Condition Assessment and Rehabilitation component of the SSER Work Plan shall establish standard procedures for the condition assessment of manholes within the WCTS. This component shall include manhole inspection forms and procedures for a manhole defect analysis. It shall also establish a process for setting manhole rehabilitation priorities and expeditious schedules; shall establish an ongoing inventory of manhole rehabilitation, including identification of the rehabilitation techniques to be used; and shall require an analysis of the effectiveness of completed rehabilitation.

c. Flow Monitoring. The Flow Monitoring component of the SSER Work Plan shall establish procedures for initiating routine flow monitoring during dry and wet weather to support engineering analyses related to Sewer System capacity and peak flow studies. Dry weather monitoring shall be carried out so as to allow the characterization of base flows and I/I rates within the WCTS. Wet weather monitoring shall be conducted periodically during wet weather events of sufficient duration and intensity to cause significant I/I into the WCTS. The procedures shall identify the process to be used to establish flow monitoring locations, appropriate flow monitoring techniques, sewer cleaning associated with flow monitoring, and a procedure for rainfall measurement.

d. Capacity Assessment. The Capacity Assessment component of the SSER Work Plan shall establish procedures and methodologies for assessing the wet weather capacity of the Sewer System. This assessment shall include engineering analyses of the Sewer System capacity derived from, but not limited to, flow monitoring data, remote monitoring equipment installed in the Sewer System to monitor sewer pipe surcharge, and hydraulic modeling results where applicable. This assessment shall identify those

portions of the Sewer System that are expected to cause or contribute to SSOs and/or Prohibited Bypasses under existing and projected average and peak flows in dry and wet weather, and the degree to which those portions of the Sewer System experience or cause SSOs and/or Prohibited Bypasses under current or projected future conditions.

e. Closed Circuit Television (“CCTV”) Inspection. The CCTV inspection component of the SSER Work Plan shall establish standard procedures for CCTV inspection within the WCTS to support sewer assessment and rehabilitation activities, and shall include procedures for CCTV-assisted cleaning and the retention and retrieval of CCTV inspection data.

f. Gravity Sewer Line Defect Analysis and Rehabilitation. The Gravity Sewer Line Defect Analysis and Rehabilitation component of the SSER Work Plan shall establish standard procedures for analysis of Gravity Sewer Line defects within the WCTS, which procedures may vary depending on the size of the pipe. Such procedures shall include Private Lateral investigations within the WWTa right-of-way, as needed to identify sources of I/I to the WCTS. The Gravity Sewer Line Defect Analysis and Rehabilitation component shall establish standard defect codes, defect identification procedures and guidelines, and a standardized process for cataloging Gravity Sewer Line defects. This component shall also establish a process for setting Gravity Sewer Line rehabilitation priorities; shall establish an ongoing inventory of Gravity Sewer Line rehabilitation that has been completed, including identification of the rehabilitation techniques used; and shall require an analysis of the effectiveness of completed rehabilitation.

g. Smoke Testing. The Smoke Testing component of the SSER Work Plan shall establish standard procedures for smoke testing of the Gravity Sewer Lines within the WCTS to identify sources of I/I, including cross connections and other unauthorized connections. Such procedures shall include Private Lateral investigations to identify sources of I/I.

h. Force Main Condition Assessment and Rehabilitation. The Force Main Condition Assessment and Rehabilitation component of the SSER Work Plan shall establish standard procedures for the condition assessment of Force Mains within the WCTS. This component shall include inspection forms and procedures for a Force Main defect analysis. This component shall also establish a process for setting Force Main rehabilitation priorities; shall establish an ongoing inventory of Force Main rehabilitation that has been completed, including identification of the rehabilitation techniques used; and shall require an analysis of the effectiveness of completed rehabilitation.

i. Pump Station Performance and Rehabilitation. The Pump Station Performance and Rehabilitation component of the SSER Work Plan shall establish standard procedures for the evaluation of Pump Station performance and Pump Station adequacy within the WCTS. The Pump Station Performance and Rehabilitation component shall include:

(1) The use of pump run time meters; pump start counters; computation of Nominal Average Pump Operating Time (“NAPOT”); root cause failure analysis protocols; and appropriate remote sensing such as SCADA;

(2) The evaluation of Pump Station capacity, as described in the *Pumping Systems* chapter of the most current version of Water Environment

Federation's Manual of Practice FD-4, *Design of Wastewater and Stormwater Pumping Stations*;

(3) The evaluation of critical response time, defined as the time interval between activation of the high wet well level alarm and the first SSO, under peak flow conditions;

(4) The evaluation of Pump Station conditions, based upon both physical inspection and recent operating and mechanical failure history during at least the past five (5) years;

(5) The evaluation of Pump Station design and equipment, including redundancy of pumps and electrical power supply, and other equipment installed, based upon Chapter 40, *Wastewater Pumping Stations* of the most recent edition of *Recommended Standards for Wastewater Facilities* by the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (commonly known as the "Ten State Standards");

(6) The evaluation of the ability of maintenance personnel to take corrective action within the critical response time calculated for each Pump Station; and

(7) A process for setting Pump Station rehabilitation priorities and expeditious schedules and an ongoing inventory of Pump Station rehabilitation that has been completed, including identification of the rehabilitation techniques used, and an analysis of the effectiveness of completed rehabilitation.

23. Group Evaluation Report/Rehabilitation Plans. WWTAs' WCTS is delineated into six (6) Service Areas which are listed in Appendix B-1 and also depicted on the associated

maps included in Appendix B-1. Within those Service Areas, WWTa has selected the Sewerbasins listed in Appendix B-2 and shown on the associated maps also included in Appendix B-2, for prioritized assessment and rehabilitation under this Consent Decree based on existing information, including the location and frequency of SSOs and Prohibited Bypasses. WWTa has categorized these Sewerbasins into five Groups (Group 1, Group 2, Group 3, Group 4, and Group 5), as listed in Appendix B-3 and depicted on the associated maps included in Appendix B-3, for purposes of prioritizing and scheduling focused assessment and rehabilitation work under this Consent Decree. WWTa may propose revisions to the assignment of Sewerbasins in Groups 1 through 5 as more information is developed through implementation of the SSER Work Plan by submitting a written request to EPA in accordance with Section VI (Review and Certification of Deliverables, Documents, Notices, and Reports). The written request must contain supporting documentation and analysis to justify any revision. Proposed changes shall be based on consideration, at a minimum, of the following prioritization criteria:

- the severity of estimated I/I in the Sewerbasins;
- the frequency, volume, and location of SSOs in the Sewerbasins;
- the relative potential impact of SSOs in the Sewerbasins to human health and the environment;
- the impact of SSOs and Prohibited Bypasses on environmental justice communities (minority and/or low-income neighborhoods);
- the average age of Gravity Sewer Lines within each Sewerbasin;
- the pipe material used within each Sewerbasin; and

- any ongoing rehabilitation or corrective action work in the Sewerbasin, including detailed information on the current status and completion dates for such Work.

Revisions to the assignment of Sewerbasins in Groups 1 through 5 may only be made upon written approval by EPA, after consultation with TDEC, and shall constitute non-material changes to this Consent Decree for purposes of Section XIX (Modification).

WWTA shall complete the assessment of all Sewerbasins in Groups 1-5 pursuant to the SSER Work Plan in accordance with the following schedule:

<u>Group</u>	<u>Assessment Completion Date</u>
1	48 Months after the Effective Date
2	72 Months after the Effective Date
3	106 Months after the Effective Date
4	120 Months after the Effective Date
5	136 Months after the Effective Date

Within fourteen (14) Months after completion of the assessment of all Sewerbasins in a particular Group pursuant to the SSER Work Plan in accordance with the schedule set forth above, WWTA shall submit to EPA for review and approval a Group Evaluation Report/Rehabilitation Plan that (1) sets forth the results of the assessment for the Sewerbasins in that Group and (2) sets forth proposed rehabilitative and corrective actions and schedules for that Group to meet the Objectives of this Consent Decree to eliminate all SSOs and remediate the WCTS to prevent SSOs. Upon approval by EPA, WWTA shall implement the remedial measures in the approved Group Rehabilitation Plan portion of this submittal for that Group in accordance with the schedule contained therein.

Within thirteen (13) Months after the Assessment and Rehabilitation of a Sewerbasin in the Residual Sewerbasin Group is triggered pursuant to Paragraph 26, below, WWTA shall

submit to EPA for review and approval a Residual Sewerbasin Evaluation Report/Rehabilitation Plan for that Sewerbasin that: (1) sets forth the results of an assessment of the Sewerbasin and (2) sets forth a proposed rehabilitative and corrective action schedule for that Sewerbasin to meet the Objectives of this Consent Decree to eliminate all SSOs and remediate the WCTS to prevent SSOs. Upon approval of the plan by EPA, WWTa shall implement the remedial measures listed in the approved Residual Sewerbasin Evaluation Report/Rehabilitation Plan in accordance with the schedule contained therein. The Residual Sewerbasin Evaluation Report/Rehabilitation Plan shall contain requirements equivalent to those of the Group Evaluation Report and Rehabilitation Plan described in subparagraphs a. and b., below, except that, in cases where the assessment and rehabilitation obligation for a Residual Sewerbasin is triggered by the recurrence of SSOs at a single SSO location rather than by the occurrence of SSOs generally within a Residual Sewerbasin, WWTa may focus the assessment and rehabilitation plan on the specific location and any hydrologically connected portions of the basin that may contribute to the occurrence of SSOs at the location, rather than on the entire Residual Sewerbasin. Within thirteen (13) Months after completion of all remedial measures set forth in the Rehabilitation Plan for a Residual Sewerbasin, WWTa shall submit to EPA for review and approval a Rehabilitation Report summarizing the implementation of the Rehabilitation Plan for the Sewerbasin.

a. Group Evaluation Report. The Group Evaluation Report portion of this submittal shall include, at a minimum, the following:

- (1) A thorough analysis of historical and current flow monitoring, inspection, rainfall, and other data, including data collected during the evaluation of the Sewerbasins;

(2) Identification of areas where Excessive I/I is causing or contributing to SSOs and/or Prohibited Bypasses;

(3) Identification of sources of I/I within the Sewerbasins, if identifiable, by manhole/line segment, street address, type (Infiltration or Inflow), source (e.g., “wall leakage”), and estimated flow from the source;

(4) Identification of cross-connections between the WCTS and municipal separate storm sewer systems in the constituent WWTAs municipalities and Hamilton County;

(5) Identification and quantification of SSOs and Prohibited Bypasses, including all potential SSOs and Prohibited Bypasses identified in the SSER Work Plan;

(6) A summary of activities undertaken to configure the Hydraulic Model required by Paragraph d. of Appendix E (“Hydraulic Model” or the “Model”) for each Sewerbasin and certification that the Hydraulic Model is capable of performing the functions identified in Paragraph d. of Appendix E;

(7) A summary of activities undertaken to calibrate the Hydraulic Model and certification that the Hydraulic Model has been calibrated (including the performance of sensitivity analyses) and verified using actual system data (e.g., flow data) from permanent and temporary sewage flow monitoring points in the WCTS. This certification shall include a description of the methodology, data collected, and results of the Hydraulic Model calibrations and verifications;

- (8) Identification of portions of the WCTS within the Sewerbasins in which physical degradation is causing or contributing to SSOs and/or Prohibited Bypasses;
- (9) Results of average and peak daily dry and wet weather flow measurements;
- (10) A determination of maximum Infiltration rate during periods of high ground water (in gpd/inch diameter-mile);
- (11) A determination of maximum hourly Inflow rate during wet weather for various storm durations and intensities (in gpd/inch diameter-mile);
- (12) A determination of Peaking Factors (the ratio of the peak hourly flow to the average daily flow) for each Sewerbasin;
- (13) A summary of flow monitoring activities, to include, at a minimum: a map showing the delineation of each Sewerbasin within the Group; location and type of each flow meter; problems encountered and deviations from the SSER Work Plan; and a description of flow monitor calibration activities, including any scatter graphs and calibration and verification graphs;
- (14) A summary of field investigative activities performed, to include, at a minimum: type of activity; number of activities performed (e.g., “100 out of 500 manholes inspected in Sewerbasin XX”); observations made under each activity (inspection procedure); and summaries of the results;
- (15) A summary of the structural defects identified in the WCTS in the Sewerbasins, to include, at a minimum: number of each type of defect by line segment, manhole number, or street address; and estimates of peak flow or impact

on WCTS capacity (as appropriate) from defects in each line segment, based on a consistently applied set of stated criteria as set forth in the SSER Work Plan;

(16) A summary of the technical approach utilized in carrying out the capacity assessment analyses outlined in Paragraph 22.d above;

(17) A detailed description of any deviations from the capacity assessment outlined in Paragraph 22.d above, including a discussion of the reasons for such deviation;

(18) Identification of all portions of the WCTS within the Sewerbasins in each Group that have insufficient capacity (pursuant to Paragraph 21.d above and as identified by the Hydraulic Model of a Major Gravity Line, Pump Station, or other structure) to convey peak flows without experiencing surcharge sufficient to cause a SSO and/or a Prohibited Bypass under either projected peak flows, projected average conditions, or both;

(19) A description of future projected flows;

(20) Information on the predicted (e.g., Manning equation) and actual peak flow capacity of all Major Gravity Lines (by segment), all Force Mains, siphons, and Pump Stations;

(21) Summaries of the number and footage of sewer segments surcharged, and the number of structures at which a SSO and/or Prohibited Bypass might be expected to occur under each condition investigated;

(22) Mapping for each condition investigated that illustrates each pipe segment operating in surcharge and each manhole or structure at which a SSO might be expected to occur;

(23) Information regarding the Pump Station evaluation as required by Paragraph 22.i above;

(24) The results of the capacity assessment as required by Paragraph 22.d above; and

(25) A summary of any capital projects implemented since commencement of the SSER Work Plan.

b. Rehabilitation Plan. The Rehabilitation Plan portion of this submittal shall include, at a minimum, the following:

(1) Identification of specific measures and schedules that, when implemented, will result in adequate capacity in the WCTS within that Group of Sewerbasins to collect, convey, and treat anticipated peak flows, without SSOs or Prohibited Bypasses;

(2) Identification of the degree to which sources of Excessive I/I shall be removed, a description of the degree to which Excessive I/I removal is expected to alleviate capacity constraints, and a proposal for specific remedial measures and schedules that will address the capacity limitations not expected to be addressed by Excessive I/I removal. Anticipated I/I removal rates used in the development of the Rehabilitation Plan shall reflect current industry practice;

(3) Identification of specific remedial measures and schedules to address capacity limitations such as increases in Pump Station and sewer line capacity, construction of storage or equalization basin facilities, or increases in WWTP capacity;

(4) Identification of all measures and schedules necessary to eliminate all cross-connections between the WCTS and WWTAs' municipal separate storm sewer system;

(5) Identification of all measures and schedules necessary to eliminate all SSOs and Prohibited Bypasses caused by physical degradation of sewers, inadequate Pump Station capacities, or inadequate Pump Station reliability;

(6) Prioritized schedules for remedial measures based upon relative likely human health and environmental impact risks, SSO and Prohibited Bypass frequencies, and SSO and Prohibited Bypass volumes as set forth in the SSER Work Plan;

(7) A description of the methodology used to apply the prioritization factors in Paragraph 23.b.(6) above;

(8) Estimated capital, operations and maintenance, and present value costs for each identified remedial measure in consistent, year-specific dollars;

(9) Identification of the dates for preliminary design, complete design, complete permitting, contract award, construction commencement, and construction completion dates for each measure proposed; and

(10) An expeditious schedule such that design, construction, and placement in service of all proposed measures shall be completed in accordance with the following schedule:

<u>Group</u>	<u>Completion Date</u>
1	108 Months after the Effective Date
2	126 Months after the Effective Date
3	151 Months after the Effective Date
4	187 Months after the Effective Date

24. Rehabilitation Report for Each Sewer Group. Within thirteen (13) Months after completion of all remedial measures set forth in the Rehabilitation Plan for a particular Group, WWTa shall submit to EPA for review and approval a Rehabilitation Report summarizing the implementation of the Rehabilitation Plan for that Group. Such summary shall include, at a minimum, the following:

a. Identification of specific measures taken to achieve, and an analysis of whether such measures resulted in, adequate capacity in the WCTS within that Group to collect, convey, and treat anticipated peak flows without causing or contributing to SSOs or Prohibited Bypasses;

b. An analysis of the degree to which sources of Excessive I/I were removed and the degree to which Excessive I/I removal alleviated capacity constraints; and

c. Identification of all measures taken to eliminate, and an analysis of whether such measures resulted in the elimination of, all cross-connections, SSOs, and Prohibited Bypasses caused by physical degradation of sewers, inadequate Pump Station capacities, or inadequate Pump Station reliability.

25. Service Area Performance Standards, Plans and Reports.

a. Service Area Progress Reports. As a component of the Group Rehabilitation Report for each Group, WWTa will include a Service Area Progress Report that describes the progress made in each of the Service Areas affected by rehabilitation of the respective Groups toward meeting the performance standards for the Service Areas listed in this Paragraph ("Service Area Performance Standards"). The Service Area Progress Reports shall describe how the Service Area Performance

Standards have been or will be achieved through implementation of the Group Rehabilitation Plans or, if applicable, will describe additional rehabilitation and corrective action work, beyond the work described in the Group Rehabilitation Plans, that is necessary to meet the Service Area Performance Standards. To the extent that a Service Area Progress Report describes additional rehabilitation and corrective action work, it will also set forth a schedule for completion of such Work.

SERVICE AREA PERFORMANCE STANDARDS:

A change in location for measuring compliance with any Service Area Performance Standard shall not be considered a material change to this Consent Decree.

(1) East Ridge Service Area

Convey no more than 12.5 million gallons per day (“MGD”) of peak flow based on a 3-inch 24-hour storm event to Chattanooga’s WCTS as measured at Chattanooga Manhole ID S158P601. The Service Area Performance Standards for the East Ridge Service Area shall be met by no later than 18 years after the Effective Date.

(2) Signal Mountain Service Area

If WWTa elects, during the term of this Consent Decree, to address bypasses at the Signal Mountain WWTP by decommissioning the Signal Mountain WWTP and transmitting Signal Mountain flows to Chattanooga’s WCTS, convey no more than 5.0 MGD of peak flow based on a 3-inch 24-hour storm event to Chattanooga’s WCTS as measured at a location prior to connection with the Chattanooga WCTS. The Performance Standards for the Signal Mountain Service Area shall be met commencing at the time that flow is first transferred from the Signal Mountain Service Area to Chattanooga’s WCTS.

(3) Ooltewah Service Area

Convey no more than 6.2 MGD of peak flow based on a 3-inch 24-hour storm event to Chattanooga's WCTS as measured at the connection point to Chattanooga's Interceptor Sewer System from the Lee Hwy Pump Station Force Main discharge point, currently planned to be at or near Chattanooga Manhole ID # S140A012. The Service Area Performance Standards for the Ooltewah Service Area shall be met upon the Effective Date.

(4) Red Bank Service Area.

Convey no more than 8.3 million gallons per day ("MGD") of peak flow based on a 3-inch 24-hour storm event to Chattanooga's WCTS as measured at a location prior to connection with the Chattanooga WCTS. Flow measurements indicate that the Service Area Performance Standards for the Red Bank Service Area are currently being met and they shall be maintained at or below this level until at least 16 years after the Effective Date.

(5) Lookout Mountain Service Area

Convey no more than 2.0 million gallons per day ("MGD") of peak flow based on a 3-inch 24-hour storm event to Chattanooga's WCTS as measured at Chattanooga Manhole ID S155J024. The Service Area Performance Standards for the Lookout Mountain Service Area shall be met by no later than 5 years after the Effective Date.

(6) Soddy Daisy Service Area.

Convey no more than 5.0 million gallons per day ("MGD") of Peak Flow based on a 3-inch 24-hour storm event to Chattanooga's WCTS as measured at Chattanooga Manhole

ID S082P007. The Service Area Performance Standards for the Soddy Daisy Service Area shall be met by no later than the Effective Date.

b. Service Area Rehabilitation Reports. To the extent that the Service Area Progress Reports have identified additional rehabilitation and corrective action work that will be necessary to meet any Service Area Performance Standard, WWTa, within thirteen (13) Months after completion of all rehabilitation and corrective action work identified in Service Area Progress Reports as necessary to meet Performance Standards for a particular Service Area, shall submit to EPA for review and approval a Service Area Rehabilitation Report summarizing the implementation of all additional rehabilitation and corrective action work identified as necessary to meet the Service Area Performance Standards for that Service Area. Such Service Area Rehabilitation Report shall include, at a minimum, the following:

i. Identification of specific measures taken to achieve, and an analysis of whether such measures have achieved, the Service Area Performance Standards described above;

ii. Identification of any additional measures that are necessary and proposed by WWTa to meet the Service Area Performance Standards, with a schedule for their implementation.

c. Interim Service Area Performance Goals. In addition to the foregoing Service Area Performance Standards, WWTa shall also have a goal of achieving the following “Interim Performance Goals” by no later than 60 Months after the Effective Date.

- (i) Convey no more than 18 million gallons per day (MGD) of peak flow based on a 3-inch 24-hour storm event from the East Ridge Service Area to Chattanooga's WCTS as measured at a location prior to connection with the Chattanooga WCTS.
- (ii) Convey no more than 6.09 MGD of peak flow based on a 3-inch 24-hour storm event from the Ooltewah Service Area to Chattanooga as measured at Chattanooga Manhole ID S140A012.
- (iii) Convey no more than 7.6 MGD of peak flow based on a 3-inch 24-hour storm event from the Red Bank Service Area to Chattanooga as measured at Chattanooga Manhole ID S126G018.
- (iv) Convey no more than 1.7 MGD of peak flow based on a 3-inch 24-hour storm event from the Lookout Mountain Service Area to Chattanooga as measured at Chattanooga Manhole ID S1551024.
- (v) Convey no more than 3.8 MGD of peak flow based on a 3-inch 24-hour storm event from the Soddy Daisy Service Area to Chattanooga as measured at Chattanooga Manhole ID S082P007.

The Service Area Interim Performance Goals shall be reflected in the Sewer Area Flow Reduction Graphs attached as Appendix C to this Consent Decree and referenced in Paragraph 36 of this Consent Decree (Five Year Reviews). WWTa may update the flow reduction graphs based on actual flow and such a modification to Appendix C will not be considered to be material modification to the Consent Decree. The Interim Service Area Performance Goals, and the Sewer Area Flow Reduction Graphs attached as Appendix C to this Consent Decree, are not enforceable requirements of the Consent Decree and shall not be subject to stipulated penalties,

but they shall be used to measure WWTa's progress in achieving the requirements of the Consent Decree and inform the development of WWTa's plans and priorities as it carries out the Work and conducts the Five Year Reviews required under Paragraph 36 of the Consent Decree.

26. Residual Sewerbasins. Based on existing information, including the location and frequency of SSOs and Prohibited Bypasses, WWTa determined that sewer basins in the Residual Sewerbasin Group do not currently warrant the prioritized assessment described in Paragraph 23 and are therefore not included in Groups 1 through 5, but will nevertheless be subjected to continual assessment, analysis, and rehabilitation to eliminate, store and capture for treatment I/I, and eliminate structural defects and other conditions causing, or that are likely to cause, SSOs and/or Prohibited Bypasses, as required in Paragraph 22 (Sanitary Sewer Evaluation/Rehabilitation ("SSER") Work Plan). For the Sewerbasins in the Residual Sewerbasin Group, instead of currently subjecting them to the full range of the evaluation procedures required for Groups in Paragraph 23 (Group Evaluation Report/Rehabilitation Plans), WWTa will annually use the following key performance indicators ("KPIs") to monitor the Sewerbasins and assess whether any of the basins should be subjected to the individualized assessment and rehabilitation procedures for Residual Sewerbasins in Paragraph 23, above:

- i. An increase in the number of SSOs occurring within the Sewerbasin after the Effective Date.
- ii. An increase in the number of SSOs downstream of the Sewerbasin after the Effective Date.
- iii. An increase in Number of SSOs reaching Waters of the U.S. or State in the Sewerbasin after the Effective Date.
- iv. The number of SSOs within the Sewerbasin occurring in close proximity to environmental justice communities (minority and/or low-income neighborhoods).
- v. Number of customer complaints about SSOs within the Sewerbasin.

vi. Future growth anticipated within a Sewerbasin with capacity limitations.

If, after applying the KPIs above, WWTa believes a Sewerbasin warrants early assessment and rehabilitation, WWTa will notify EPA of its determination and that it will assess and remediate the WCTS within the Sewerbasin as provided in paragraph 23, above. If a Sewerbasin in the Residual Sewerbasin Group experiences more than five SSOs during a rolling 12-Month period, or three or more SSOs in a single location during a rolling 12 Month period, that are not the result of storm events that exceed a representative two-year twenty-four hour storm event, WWTa will evaluate the relevant Sewerbasin or location to determine the cause of the SSOs and take measures to remediate the cause of the SSOs for the relevant Sewerbasin or specific location, as provided in paragraph 23, above. A manhole, pump station, cleanout or other structure and an area in the WCTS within 250 yards of such a structure will be considered to be a “single location” for the purposes of this provision of the Consent Decree. WWTa may also propose, for EPA and TDEC review and approval, based on KPIs and other information, that one or more other basins in a Group no longer warrant inclusion in the Group and that the basin should be removed from a Group and be designated as a Residual Sewerbasin. No basin may be removed from a Group without the written approval of EPA and TDEC. A report of the status and outcome of the ongoing assessment of the Residual Sewerbasins will be included in the Annual Reports required by Paragraph 35. The Residual Sewerbasins are listed in Appendix B-3 and depicted on the associated maps included in Appendix B-3.

27. Capacity, Management, Operations and Maintenance Programs. WWTa shall develop and implement the Capacity, Management, Operations and Maintenance (“CMOM”) programs as provided in Appendix E.

28. Elimination of Signal Mountain WWTP Bypasses. WWTA shall develop and implement a plan to eliminate bypasses at the WWTP (“Signal Mountain Remediation Plan”). The Signal Mountain Remediation Plan shall be submitted to EPA and TDEC for review and approval no later than sixty (60) Days after the Effective Date. The Signal Mountain Remediation Plan shall include: (1) a detailed analysis of alternative remedial options considered, including the results of any pilot studies conducted as part of the alternatives analysis, and explanation of the basis for WWTA’s selection of remedial measures; (2) an analysis of the effectiveness of all treatment technologies considered in meeting effluent limits for all pollutants controlled by the WWTP’s NPDES Permit in a full range of wet weather scenarios; (3) a detailed description of all selected remedial measures (not including a WWTP Optimization Plan, which shall be submitted in accordance with the requirements of Paragraph 28.b.(1), below, if WWTP Optimization is a component of the Signal Mountain Remediation Plan); and (4) a detailed schedule for design and construction of selected remedial measures, which shall provide for completion of construction and placement into operation of all remedial measures no later than five (5) years from the date of EPA/TDEC approval of the Signal Mountain Remediation Plan. The Parties further acknowledge that the identification of two options for the Signal Mountain Remediation Plan in subparagraphs 28.a., and 28.b. below, namely the “Signal Mountain Flow Transfer Plan,” in subparagraph 28.a., and the “Filtration System” with WWTP optimization in subparagraph 28.b., are not intended to limit the range of options that may be considered by WWTA in development of the Signal Mountain Remediation Plan.

a. To facilitate WWTA’s development and implementation of the Signal Mountain Remediation Plan and expand the range of options that can be considered, WWTA

may seek from Chattanooga an agreement for Chattanooga to accept for treatment at the Moccasin Bend WWTP flow from the Signal Mountain area that is currently being sent to the WWTP in amounts of up to 5.0 MGD, including during peak flows and storm events, measured at or near the connection point of the flow from the Signal Mountain area into the Chattanooga sewer collection system. Such an agreement would facilitate the implementation by WWTa of a Signal Mountain Remediation Plan that would include, but not necessarily be limited to: (1) decommissioning the WWTP; (2) designing and installing a pump station and force main from the site of the WWTP to transport all flows from the Signal Mountain Service Area to an equalization system (a tank and associated infrastructure) owned and operated by Chattanooga; and (3) installing an equalization tank and associated equipment at the site of the WWTP. (This plan is referred to herein as the “Signal Mountain Flow Transfer Plan.”). In the event that Chattanooga refuses to accept flow from the Signal Mountain sewer basin, WWTa shall remain obligated to meet all obligations and deadlines in this Consent Decree and such refusal shall not be the basis of a force majeure claim.

b. WWTa is also evaluating an option for the Signal Mountain Remediation Plan that would include, but would not necessarily be limited to: (i) the optimization and upgrade of the existing biological treatment train at the WWTP to increase the capacity of the existing primary and biological treatment train to at least 1.2 MGD; and (ii) addition of an in-line filtration or equivalent treatment system that would treat all of the flow into the WWTP with a filtration system and divert flows that exceed the capacity of the bacteriological treatment train at the WWTP (hereinafter referred to as the “Filtration System.”). If the Filtration System is selected as a remedial measure in the Signal Mountain Remediation Plan, its implementation will be subject to the following conditions:

(1) Within thirteen (13) Months after the commencement of operation of the Filtration System, WWTa shall submit to EPA and TDEC a WWTP Optimization Plan which shall evaluate options for upgrading/optimizing the WWTP to increase the capacity and improve the performance of the WWTP's main primary and biological treatment train. The WWTP Optimization Plan shall describe WWTa's proposed measures for increasing the capacity and improving the performance of the WWTP, including a schedule for their implementation. The measures proposed in the WWTP Optimization Plan shall enable the main primary and biological treatment train at the WWTP to successfully treat an instantaneous flow of at least 1.2 MGD. The Optimization plan may include a demonstration that the maximum optimized capacity of the WWTP's biological treatment train is less than the instantaneous flow of 1.2 MGD, in which case the Optimization Plan may provide for the demonstrated maximum optimized capacity, if such lesser optimized capacity is approved by EPA and TDEC. The schedule for implementation of the measures proposed in the WWTP Optimization Plan shall provide for their construction and full implementation no later than thirty-six (36) Months after the approval by EPA and TDEC of the WWTa Optimization Plan. WWTa shall commence implementation of the WWTP Optimization Plan upon receipt of approval from EPA and TDEC. If EPA and TDEC disapprove the WWTP Optimization Plan, WWTa shall submit a revised WWTP Optimization Plan to EPA and TDEC which address any comments by EPA and TDEC within 30 Days of receipt of EPA and TDEC disapproval, or such longer time as specified in the notice of disapproval. Within ninety (90) Days after receipt of EPA and TDEC approval of the WWTP Optimization Plan, WWTa shall apply for a modification or reissuance of the Signal Mountain WWTP's NPDES permit to authorize the main treatment train to manage, treat and discharge the optimized flow capacity of the main treatment train.

(2) The diversion of water around the bacteriological treatment unit in the WWTP treatment train will be phased out as WWTA eliminates excessive I/I over the term of the Consent Decree such that, at ten (10) years following the Effective Date of the Consent Decree, the diversion will occur a maximum of 7 Days per Month as a 12-month rolling average, at fifteen (15) years following the Effective Date of the Consent Decree, the diversion will occur a maximum of 5 Days per Month as a 12-month rolling average, and reliance on the diversion will be eliminated within twenty (20) years of the Effective Date of the Consent Decree.

(3) WWTA's use of the main treatment train must be maximized such that diversion around the biological treatment unit shall not commence until the instantaneous flow rate at the WWTP reaches 1.2 MGD (or a lesser instantaneous flow volume approved by EPA and TDEC pursuant to Paragraph 28.b.(1), above), and use of the diversion shall cease no later than when the instantaneous flow rate declines to 1.0 MGD (or a lesser instantaneous flow volume approved by EPA and TDEC pursuant to Paragraph 28.b.(1), except during planned events for maintenance, repairs or optimization of the main treatment train).

(4) If, due to poor performance of the Filtration System, the WWTP fails to meet permit limits at the WWTP outfall to the degree described in the "Post-Pilot Study WWTP Performance Criteria" attached as Appendix D hereto, EPA and TDEC may demand from WWTA a proposal for alternate remedial measure(s) for managing flows at the Signal Mountain WWTP. Within six (6) Months of receipt of such demand, WWTA shall submit and, upon EPA/TDEC approval, implement a proposal for alternate remedial measure(s) for managing Signal Mountain flows, including a schedule for implementation.

(5) When the diversion of wastewater around the biological treatment unit is occurring, WWTa shall conduct monitoring as follows, with monitoring results to be included in an attachment to DMRs and in Quarterly Reports required under Paragraph 33:

- a. Monitor final outfall for permit compliance, 24-hour composite sampling (all controlled parameters).
- b. To provide information regarding performance of the Filtration System, monitor internal outfall for Total Suspended Solids and 5-day Biochemical Oxygen Demand (24-hour composite sampling), along with precipitation data from the start of the Day (12:00 a.m.) the diversion was occurring until the end date, volume of water diverted during event, duration of the diversion including start/end time, flow rate when the diversion commenced, and maximum flow rate during the event.
- c. Post notice on a public web site whenever the wastewater is diverted around the biological treatment unit when the Filtration System is in use, and follow up by adding to the PDR the results of the monitoring required under this subsection 28.b.(5), on a monthly basis.

VIII. CIVIL PENALTY

29. WWTa shall pay the sum of \$598,490 as a civil penalty as follows: \$299,245 to the United States and \$299,245 to the State, in accordance with the provisions of Paragraphs 30, 31 and 32.

30. Within thirty (30) days after the Effective Date, WWTa shall pay to the United States the civil penalty due of \$299,245 by FedWire Electronic Funds Transfer (“EFT”) to the

U.S. Department of Justice account, in accordance with instructions provided to WWTa by the Financial Litigation Unit (“FLU”) of the United States Attorney’s Office for the Eastern District of Tennessee after the Effective Date. The payment instructions provided by the FLU will include a Consolidated Debt Collection System (“CDCS”) number, which WWTa shall use to identify all payments required to be made in accordance with this Consent Decree. The FLU will provide the payment instructions to:

Mike Patrick, Executive Director
Chattanooga/Hamilton County Development Resource Center
1250 Market St., Suite 3050
Chattanooga, TN 37402-2713

WWTa may change the individual to receive payment instructions on its behalf by providing written notice of such change to the United States and EPA in accordance with Section XVI (Notices).

31. At the time of payment, WWTa shall send notice that payment has been made: (i) to EPA via email at cinwd_acctsreceivable@epa.gov or via regular mail at EPA Cincinnati Finance Office, 26 W. Martin Luther King Drive, Cincinnati, Ohio 45268; (ii) to the United States via email or regular mail in accordance with Section XVI (Notices). Such notice shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in *United States of America and State of Tennessee v. Hamilton County Water and Wastewater Treatment Authority* and shall reference the civil action number, CDCS Number and DOJ case number 90-5-1-1-11394. In the event that full payment to the United States is not made within thirty (30) Days of the Effective Date, WWTa shall also pay to the United States interest on the balance due from the original due date to the date of payment, at the rate calculated pursuant to 28 U.S.C. § 1961.

32. Within thirty (30) Days after the Effective Date, WWTa shall pay to the State the civil penalty due of \$299,245 as follows: WWTa shall make payment to the State by certified cashier's check made payable to "Treasurer, State of Tennessee," with the name and number of the case written on the memo line, and mailed to Tennessee Attorney General's Office, Attention Wilson S. Buntin, Environmental Division, P.O. Box 20207, Nashville, TN 37202-0207. In the event that full payment to the State is not made within thirty (30) Days of the Effective Date, WWTa shall also pay to the State interest on the balance due from the original due date to the date of payment, at the rate calculated pursuant to 28 U.S.C. § 1961.

IX. REPORTING REQUIREMENTS

33. Quarterly Reports. Beginning thirty (30) Days after the first (1st) full three (3)-Month period following the Effective Date of this Consent Decree, and thirty (30) Days after each subsequent three (3)-Month period thereafter until termination of the Consent Decree, WWTa shall submit to the Parties for review a Quarterly Report that shall include the date, time, location, source, estimated duration, estimated volume, receiving water (if any), and cause of all SSOs and Prohibited Bypasses occurring in the applicable three (3)-Month period. In reporting such data, WWTa shall provide the information in a tabulated electronic format (*e.g.*, Excel spreadsheet) as it deems appropriate. The Quarterly Reports shall also include any side-stream treatment train monitoring data required under Paragraph 28.b.(5).

34. Semi-Annual and Annual Work Progress Reports. Beginning thirty (30) Days after the first (1st) full six (6)-Month period following the Effective Date of this Consent Decree, and thirty (30) Days after each subsequent six (6)-Month period until the twelfth (12th) report is submitted, WWTa shall submit a Semi-Annual Work Progress Report to the Parties for review. Beginning thirty (30) Days after the first (1st) full twelve (12)-Month period following the

submittal of the twelfth (12th) Semi-Annual Work Progress Report until termination of this Consent Decree, WWTa shall submit to the Parties for review an Annual Work Progress Report. Each Semi-Annual and Annual Work Progress Report shall include, at a minimum:

a. A description of projects and activities completed and milestones achieved during the previous applicable six (6)- or twelve (12)-Month period pursuant to the requirements of this Consent Decree, in Gantt chart or similar format, including a description of the status of compliance or non-compliance with the requirements of this Consent Decree and, if applicable, the reasons for non-compliance. If any non-compliance cannot be fully explained at the time the report is due, WWTa shall include a statement to that effect in the report. WWTa shall investigate to determine the cause of the non-compliance and then shall submit an amendment to the report, including a full explanation of the cause of the non-compliance, within thirty (30) Days after submission of the report.

b. A summary of significant projects and activities anticipated to be performed and milestones anticipated to be achieved in the successive applicable six (6)- or twelve (12)-Month period to comply with the requirements of this Consent Decree, in Gantt chart or similar format.

c. Any additional information WWTa determines is appropriate to demonstrate that WWTa is implementing the remedial actions required under this Consent Decree in an adequate and timely manner.

35. Annual Reports. Beginning sixty (60) Days after the first (1st) full twelve (12)-Month period following the Effective Date, and sixty (60) Days after each subsequent twelve (12)-Month period until termination of this Consent Decree, WWTa shall submit an Annual

Report to the Parties. Each Annual Report shall cover the most recent applicable twelve (12)-Month period and shall include a summary of the CMOM Programs implemented or modified pursuant to this Consent Decree, including a comparison of actual performance with any performance measures that have been established. Each Annual Report shall also include a report of the status and outcome of the ongoing assessment of the Sewerbasins in the Residual Sewerbasin Group as described in Paragraph 26, above. For the first (1st) five (5) Annual Reports only, WWTa shall include a trends analysis of the number, volume, duration, and cause of WWTa's SSO Events for a twenty-four (24)-Month rolling period updated to reflect the SSO Events that occurred during the previous twelve (12)-Month period. Beginning with the sixth (6th) Annual Report, WWTa shall include a trends analysis of the number, volume, duration, and cause of WWTa's SSO Events for a five (5)-year rolling period updated to reflect the SSO Events that occurred during the previous twelve (12)-Month period. In reporting trends and other SSO data, WWTa shall provide the information in such format as it deems appropriate.

36. Five Year Review. Beginning sixty (60) Days after the fifth (5th) full twelve (12)-Month period following the Effective Date, and sixty (60) Days after each subsequent sixty (60)-Month period until termination of this Consent Decree, WWTa shall submit a Five Year Review Report to the Parties for review. Each Five Year Review Report shall cover the most recent applicable sixty (60)-Month period and shall include an evaluation of the progress WWTa has made in achieving Consent Decree goals of eliminating SSOs, reducing I/I, maintaining adequate collection, transmission and treatment capacity, eliminating prohibited bypasses, and reducing Peaking Factors and wastewater peak flows for flows delivered to Chattanooga from each of the WWTa Service Areas (the East Ridge, Signal Mountain and Ooltewah, Red Bank, Lookout Mountain, and Soddy Daisy Service Areas) and meeting the Service Area Performance

Standards. The Five Year Review Report shall include an analysis of whether I/I reduction projects and capacity enhancing projects are achieving the benefits that have been projected by WWTa and whether WWTa should propose additional projects, in addition to any that have been completed pursuant to the Consent Decree and/or proposed in deliverables required under the Consent Decree, in order to meet the goals and requirements of the Consent Decree and achieve compliance with the CWA, the TWQCA and WWTa's NPDES and State Operating Permits. The Five Year Review Report will compare WWTa's progress in achieving the goals and requirements of the CD (including Interim Performance Goals set forth in Paragraph 25 for each of the WWTa Service Areas) against the graphs/plots attached as Appendix C (Sewer Area Flow Reduction Graphs) which show the projected reductions of flow volumes, Peaking Factors, and the gains in I/I removal that are projected to be accomplished year by year by the remedial work under the Consent Decree for each Service Area in the WWTa WCTS.

37. All reports required by Paragraphs 33 through 36 shall be submitted in accordance with Section VI (Review and Certification of Deliverables, Documents, Notices, and Reports).

38. Compliance with this Section does not relieve WWTa of any other reporting obligations required by the CWA, the TWQCA, or implementing regulations, or by any other Federal, state, or local law, regulation, permit, or other requirement, including the NPDES Permit. Except as otherwise provided in the Sewer Overflow Response Plan ("SORP") or Incident Response Plan ("IRP"), whenever any violation of this Consent Decree or any other event affecting WWTa's performance under this Consent Decree or its NPDES Permit may pose an immediate threat to the public health or welfare or the environment, WWTa shall notify EPA and TDEC orally or by electronic or facsimile transmission as soon as possible, but no later than twenty-four (24) hours after WWTa first knew of the violation or event.

39. Notification of an unanticipated delay to EPA or TDEC pursuant to this Section shall not by itself excuse the delay or otherwise satisfy the notification requirements set forth in Section XI (Force Majeure).

40. Any information provided pursuant to this Consent Decree may be used by the United States and the State in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

X. STIPULATED PENALTIES

41. WWTa shall be liable for stipulated penalties to the United States and the State for violations of this Consent Decree as specified below, unless excused under Section XI (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

42. If WWTa fails to pay the civil penalty required to be paid under Section VIII of this Consent Decree (Civil Penalty) when due, WWTa shall pay a stipulated penalty of \$1,000 per Day for each Day that the payment is late.

43. The following stipulated penalties shall accrue for each violation identified below:

a. SSO Events Reaching Waters. For each SSO Event discharging wastewater to waters of the United States occurring after the Effective Date of this Consent Decree, a stipulated penalty may be assessed as follows:

<u>If an SSO Event Occurs:</u>	<u>Penalty per SSO Event:</u>
Within twenty-four (24) Months of the Effective Date	\$350
Between twenty-four (24) Months and sixty (60) Months of the Effective Date	\$500

After sixty (60) Months of the Effective Date for each SSO Event less than 10,000 gallons	\$1,000
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After sixty (60) Months of the Effective Date for each SSO Event 10,000 gallons or more	\$2,000
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For purposes of this Subparagraph 43.a., a “SSO Event” shall mean the total time period a SSO discharging wastewater to waters of the United States occurs at the same location and due to the same causes(s). For example, a collapsed pipe that results in a SSO discharging wastewater to waters of the United States or State on multiple Days is a single SSO Event.

b. Failure to Timely Submit Deliverable. For each Day WWTa fails to Timely submit any Deliverable, a stipulated penalty for each such Deliverable may be assessed as follows:

<u>Period of Noncompliance:</u>	<u>Penalty per Deliverable per Day:</u>
One (1) to fifteen (15) Days	\$350
Sixteen (16) to thirty (30) Days	\$500
Thirty-one (31) to sixty (60) Days	\$1,000
More than sixty (60) Days	\$2,000

c. Failure to Comply with Capacity Assurance Plan (“CAP”). Beginning twelve (12) Months after EPA approval of the CAP, for each authorization by WWTa of a new sewer service connection in the WCTS, or additional flow from an existing sewer service connection in the WCTS, not consistent with the requirements of the CAP, a stipulated penalty of \$10,000 may be assessed.

d. Failure to Complete the Assessment of any Group of Sewerbasins pursuant to the SSER Work Plan in accordance with the schedule for completion of Assessment

of Groups 1-5 set forth in Paragraph 23. For each Day WWTa fails to Timely complete the assessment of any Group of Sewerbasins in accordance with the deadlines set forth in Paragraph 23, daily stipulated penalties may be assessed as follows:

<u>Period of Noncompliance:</u>	<u>Penalty per Day:</u>
One (1) to thirty (30) Days	\$500
Thirty-one (31) to sixty (60) Days	\$1,000
Sixty-one (61) to one hundred-eighty (180) Days	2,500
More than one hundred-eighty (180) Days	\$5,000

e. Failure to Complete any Early Action Project in accordance with the Schedule set forth in Appendix A. For each Day that WWTa fails to complete any Early Action Project in accordance with the schedule set forth in Appendix A, daily stipulated penalties shall be assessed as follows:

<u>Period of Noncompliance:</u>	<u>Penalty per Day:</u>
One (1) to thirty (30) Days	\$500
Thirty-one (31) to sixty (60) Days	\$1,000
Sixty-one (61) to one hundred-eighty (180) Days	\$2,500
More than one hundred-eighty (180) Days	\$5,000

f. Failure to Meet Service Area Performance Standard. For each Month during which WWTa fails to meet the final peak flow standard in any Service Area Performance Standard, after the deadlines established in Paragraph 25, a stipulated penalty may be assessed as follows:

<u>Year After Deadline:</u>	<u>Penalty Per month in which Standard Exceeded:</u>
First Year (12 Months) After Deadline	\$2,000

Second through Fourth Year After Deadline	\$5,000
Fifth Year after Deadline and Thereafter	\$10,000

g. Failure to Complete the design and construction and placement into service of all proposed remedial measures for any Group of Sewerbasins in accordance with the deadlines set forth in Paragraph 23.b.(10). For each Day that WWTa fails to complete the design, construction and placement into service of all proposed remedial measures for any Group of Sewerbasins in accordance with the deadlines set forth in Paragraph 23.b.(10), daily stipulated penalties shall be assessed as follows:

<u>Period of Noncompliance:</u>	<u>Penalty per Day:</u>
One (1) to thirty (30) Days	\$500
Thirty-one (31) to sixty (60) Days	\$1,000
Sixty-one (61) to one hundred-eighty (180) Days	\$2,500
More than one hundred-eighty (180) Days	\$5,000

h. Failure to complete the design, and failure to complete the construction and placement into service of all proposed and approved measures for eliminating bypasses at the Signal Mountain WWTP, in accordance with the deadlines set forth in Paragraph 28, except for failure to comply with any of the conditions for implementing a side-stream treatment train, for which separate penalties are stipulated in subparagraph 43.i., below:

<u>Period of Noncompliance:</u>	<u>Penalty per Day:</u>
One (1) to thirty (30) Days	\$500
Thirty-one (31) to sixty (60) Days	\$1,000
Sixty-one (61) to one hundred-eighty (180) Days	\$2,500

More than one hundred-eighty (180) Days \$5,000

i. Failure to comply with any of the conditions for implementing a side-stream treatment train as required under Paragraph 28.b.:

<u>Period of Noncompliance:</u>	<u>Penalty per Day:</u>
One (1) to thirty (30) Days	\$500
Thirty-one (31) to sixty (60) Days	\$1,000
Sixty-one (61) to one hundred-eighty (180) Days	\$2,500
More than one hundred-eighty (180) Days	\$5,000

44. Stipulated penalties under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree. WWTa shall pay stipulated penalties within thirty (30) Days of a written demand by EPA. WWTa shall pay fifty (50) percent of the total stipulated penalty amount due to the United States and fifty (50) percent to the State.

45. The United States or State may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due under this Consent Decree.

46. Stipulated penalties shall continue to accrue as provided in Paragraph 44 during any Dispute Resolution, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to the Court, WWTa shall pay accrued penalties determined to be owing, together with interest, to the United States and the State within thirty (30) Days of the effective date of the agreement or the receipt of EPA's decision or order.

b. If the dispute is appealed to the Court and the United States prevails in whole or in part, WWTa shall pay all accrued penalties determined by the Court to be owed, together with interest, within sixty (60) Days of receiving the Court's decision or order, except as provided in Subparagraph 46.c. below.

c. If the District Court's decision is appealed, WWTa shall pay all accrued penalties determined to be owed, together with interest, within fifteen (15) Days of receiving the final appellate court decision.

47. WWTa shall pay stipulated penalties owing to the United States in the manner set forth and with the confirmation notices required by Paragraphs 30-31, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid. WWTa shall pay stipulated penalties owing to the State by check payable to the "State of Tennessee" and shall include with such payment a transmittal letter identifying for what violations stipulated civil penalties are being paid. Each check shall reference the case name and civil action number herein and shall be sent to:

Wilson Buntin
Senior Assistant Attorney General
Office of the Tennessee Attorney General
Environmental Division
P.O. 20207
Nashville, Tennessee 37202

48. If WWTa fails to pay stipulated penalties according to the terms of this Consent Decree, WWTa shall be liable for interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit the United States or the State from seeking any remedy otherwise provided by law for WWTa's failure to pay any stipulated penalties.

49. Subject to the provisions of Section XIV of this Consent Decree (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States and the State for WWTAs' violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of the CWA and/or the TWQCA, WWTAs shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

XI. FORCE MAJEURE

50. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of WWTAs, of any entity controlled by WWTAs, or of WWTAs' contractors or subcontractors that delays or prevents the performance of any obligation under this Consent Decree despite WWTAs' best efforts to fulfill the obligation. The requirement that WWTAs exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (a) as it is occurring and (b) following the potential force majeure, such that the delay and any adverse effects of the delay are minimized. "Force Majeure" does not include WWTAs' financial inability to perform any obligation under this Consent Decree.

51. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, WWTAs shall provide notice orally or by electronic or facsimile transmission to EPA and TDEC within seventy-two (72) hours of when WWTAs first knew that the event might cause a delay. Within seven (7) Days thereafter, WWTAs shall provide in writing to EPA and the State an explanation

and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; WWTAs rationale for attributing such delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of WWTAs, such event may cause or contribute to an endangerment to public health, welfare or the environment. WWTAs shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude WWTAs from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. WWTAs shall be deemed to know of any circumstance of which WWTAs, any entity controlled by WWTAs, or WWTAs contractors or subcontractors knew or should have known.

52. If EPA, after a reasonable opportunity for review and comment by TDEC, agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA, after a reasonable opportunity for review and comment by TDEC, for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. EPA will notify WWTAs in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

53. If EPA, after a reasonable opportunity for review and comment by TDEC, does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify WWTAs in writing of its decision.

54. If WWTa elects to invoke the dispute resolution procedures set forth in Section XII (Dispute Resolution), it shall do so no later than fifteen (15) Days after receipt of EPA's notice. In any such proceeding, WWTa shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that WWTa complied with the requirements of Paragraphs 50 and 51. If WWTa carries this burden, the delay at issue shall be deemed not to be a violation by WWTa of the affected obligation of this Consent Decree identified to EPA and the Court.

XII. DISPUTE RESOLUTION

55. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. WWTa's failure to seek resolution of a dispute under this Section shall preclude WWTa from raising any such issue as a defense to an action by the United States or State to enforce any obligation of WWTa arising under this Decree.

56. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when WWTa sends the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The State shall have the right to participate in informal negotiations between WWTa and the United States as to disputes under this Consent Decree. The period of informal negotiations shall not exceed twenty (20) Days from the date the dispute arises, unless that period is modified by written agreement between the United States and WWTa. If the United States and WWTa cannot resolve a dispute by

informal negotiations, then the position advanced by the United States shall be considered binding unless, within forty-five (45) Days after the conclusion of the informal negotiation period, WWTa invokes formal dispute resolution procedures as set forth below.

57. Formal Dispute Resolution. WWTa shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting WWTa's position and any supporting documentation relied upon by WWTa.

58. The United States shall serve its Statement of Position within sixty (60) Days of receipt of WWTa's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States shall consult with the State during preparation of its Statement of Position. The United States' Statement of Position shall be binding on WWTa, unless WWTa files a motion for judicial review of the dispute in accordance with the following Paragraph.

59. WWTa may seek judicial review of the dispute by filing with the Court and serving on the United States and the State, in accordance with Section XVI (Notices), a motion requesting judicial resolution of the dispute. The motion (a) must be filed within ten Days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph; (b) may not raise any issue not raised in informal dispute resolution pursuant to Paragraph 56, unless the Plaintiffs raise a new issue of law or fact in the Statement of Position; (c) shall contain a written statement of WWTa's position on the matter in dispute, including any supporting factual data,

analysis, opinion, or documentation, and (d) shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

60. The United States shall respond to WWTAs motion within the time period allowed by the Local Rules of this Court. WWTAs may file a reply memorandum, to the extent permitted by the Local Rules.

61. Standard of Review.

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought under Paragraph 57 pertaining to the adequacy or appropriateness of plans, procedures to implement plans, schedules, or any other items requiring approval by EPA under this Consent Decree; the adequacy of the performance of Work undertaken pursuant to this Consent Decree; and all other disputes that are accorded review on the administrative record under applicable principles of administrative law, WWTAs shall have the burden of demonstrating, based on the administrative record, that the position of the United States is arbitrary and capricious or otherwise not in accordance with law.

b. Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under Paragraph 59, WWTAs shall bear the burden of demonstrating that its position complies with this Consent Decree and better furthers the Objectives of the Decree.

62. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of WWTAs under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but

payment shall be stayed pending resolution of the dispute as provided in Paragraph 46. If WWTa does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section X (Stipulated Penalties).

XIII. INFORMATION COLLECTION AND RETENTION

63. The United States, the State, and their representatives, including attorneys, contractors, subcontractors, and consultants, shall have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credentials, to:

- a. monitor the progress of activities required under this Consent Decree;
- b. verify any data or information submitted to the United States or the State in accordance with the terms of this Consent Decree;
- c. obtain samples and, upon request, splits of any samples taken by WWTa or its representatives, contractors, subcontractors, or consultants;
- d. obtain documentary evidence, including photographs and similar data; and
- e. assess WWTa's compliance with this Consent Decree.

64. Upon request, WWTa shall provide EPA and TDEC or their authorized representatives splits of any samples taken by WWTa. Upon request, EPA and TDEC shall provide WWTa splits of any samples taken by EPA or TDEC.

65. Until five (5) years after the termination of this Consent Decree, WWTa shall retain, and shall instruct its contractors, subcontractors, and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors', subcontractors', or agents' possession or control, or that come into its or its contractors', subcontractors', or agents' possession or control, and that relate in any manner to WWTa's performance of its obligations under this Consent

Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States or the State, WWTa shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

66. After the conclusion of the information-retention period provided in the preceding Paragraph, WWTa shall notify the United States and the State at least ninety (90) Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States or the State, WWTa shall deliver any such documents, records, or other information to EPA or the State. WWTa may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by federal law. If WWTa asserts such a privilege, it shall provide the following: (a) the title of the document, record, or information; (b) the date of the document, record, or information; (c) the name and title of each author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the subject of the document, record, or information; and (f) the privilege asserted by WWTa. However, no documents, records, or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

67. WWTa may also assert that information required to be provided under this Section is protected as Confidential Business Information (“CBI”) under 40 C.F.R. Part 2. As to any information that WWTa seeks to protect as CBI, WWTa shall follow the procedures set forth in 40 C.F.R. Part 2 and Tenn. Code Ann. § 10-7-504(a)(5)(A) (including sending such material only to the Tennessee Attorney General’s Office), as applicable.

68. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States or the State pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of WWTa to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XIV. EFFECT OF SETTLEMENT / RESERVATION OF RIGHTS

69. This Consent Decree resolves the civil claims of the United States and the State for the violations alleged in the Complaint filed in this action through the Date of Lodging.

70. The United States and the State reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree. This Consent Decree shall not be construed to limit the rights of the United States or the State to obtain penalties or injunctive relief under the CWA, the TWQCA, or their implementing regulations, or under other federal or state laws, regulations, or permit conditions. The United States and the State further reserve all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, WWTa's Sewer System, whether related to the violations addressed in this Consent Decree or otherwise.

71. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, civil penalties, or other appropriate relief relating to the Sewer System or WWTa's violations, WWTa shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should

have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 69.

72. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. WWTa is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and WWTa's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States and the State do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that WWTa's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CWA, the TWQCA, or with any other provisions of federal, State, or local laws, regulations, or permits.

73. Application for construction grants, State Revolving Loan Funds, or any other grants or loans, or other delays caused by inadequate facility planning or plans and specifications on the part of WWTa shall not be cause for extension of any required compliance date in this Consent Decree.

74. Nothing in this Consent Decree limits the rights or defenses available under Section 309(e) of the Clean Water Act, 33 U.S.C. § 1319(e), in the event that the laws of the State, as currently or hereafter enacted, may prevent WWTa from raising the revenues needed to comply with this Decree.

75. This Consent Decree does not limit or affect the rights of WWTa or of the United States or the State against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against WWTa, except as otherwise provided by law.

76. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XV. COSTS

77. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States and the State shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due but not paid by WWTa.

XVI. NOTICES

78. Unless otherwise specified in this Decree, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

As to the United States:

By Mail:

EES Case Management Unit
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-5-1-1-11394

By Email:

eesdcopy.enrd@usdoj.gov
Re: DJ # 90-5-1-1-11394

And:

Chief, Clean Water Enforcement Branch
Water Protection Division
US EPA Region 4
61 Forsyth St., SW
Atlanta, GA 30303

As to EPA:

Chief, Clean Water Enforcement Branch
Water Protection Division
US EPA Region 4
61 Forsyth St., SW
Atlanta, GA 30303

As to the State:

Wilson Buntin
Senior Assistant Attorney General
Office of the Attorney General
Environmental Division
P. O. Box 20207
Nashville, TN 37202

As to TDEC:

Manager of Enforcement and Compliance Section, Division of Water Resources
Tennessee Department of Environment and Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37232-1101

And

Patrick Parker
Assistant General Counsel
Office of General Counsel
Tennessee Department of Environment and Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 2nd Floor
Nashville, TN 37232-1101

As to WWTa:

Michael Patrick, Executive Director
Chattanooga/Hamilton County Development Resource Center
1250 Market St., Suite 3050
Chattanooga, TN 37402-2713

79. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

80. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVII. EFFECTIVE DATE

81. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first, as recorded on the Court's docket.

XVIII. RETENTION OF JURISDICTION

82. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Sections XII and XIX, or effectuating or enforcing compliance with the terms of this Decree.

XIX. MODIFICATION

83. Except as otherwise set forth in Paragraphs 17.b., 21, 23, and 25.c., the terms of this Consent Decree, including any attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Decree, it shall be effective only upon approval by the Court. Non-material changes to this Consent Decree, including any attached appendices, may be made by written agreement of the Parties without Court approval.

84. Any disputes concerning modification of this Decree shall be resolved pursuant to Section XII (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 61, the Party seeking the modification bears the burden of demonstrating

that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XX. TERMINATION

85. This Consent Decree may be terminated when the United States determines that WWTa has satisfactorily completed the requirements of Section VII (Compliance Requirements), provided that WWTa has fulfilled all other obligations of this Consent Decree, including payment of the civil penalty under Section VIII of this Consent Decree and any accrued stipulated penalties as required by Section X of this Consent Decree not waived or reduced by the United States or the State. WWTa may serve upon the United States and the State a Request for Termination, certifying that WWTa has satisfied those requirements, together with all necessary supporting documentation.

86. Following receipt by the United States of WWTa's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether WWTa has satisfactorily complied with the requirements for termination of this Consent Decree. If the United States, after consultation with the State, agrees that the Decree may be terminated, the United States and WWTa shall submit, for the Court's approval, a joint stipulation terminating the Decree.

87. If the United States, after consultation with the State, does not agree that the Decree may be terminated, WWTa may invoke Dispute Resolution under Section XII of this Consent Decree. However, WWTa shall not seek Dispute Resolution of any dispute regarding termination until one hundred twenty (120) Days after service of its Request for Termination.

XXI. PUBLIC PARTICIPATION

88. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. WWTa consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified WWTa in writing that it no longer supports entry of the Consent Decree.

XXII. SIGNATORIES/SERVICE

89. Each undersigned representative of WWTa, EPA, the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice, and the State certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

90. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. WWTa agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons. WWTa need not file an answer to the complaint in this action unless or until the Court expressly declines to enter this Consent Decree.

XXIII. INTEGRATION

91. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Consent Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than Deliverables that are subsequently submitted and approved pursuant to this Consent Decree, the Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Consent Decree.

XXIV. HEADINGS

92. Headings to the Sections and Subsections of this Consent Decree are provided for convenience and do not affect the meaning or interpretation of the provisions of this Consent Decree.

XXV. FINAL JUDGMENT

93. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, the State, and WWTa. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

XXVI. APPENDICES

94. The following Appendices are attached to and part of this Consent Decree:

“Appendix A” is the list and description of Early Action Projects;

“Appendix B” includes lists and corresponding maps of WWTa’s Service Areas (Appendix B-1), Sewerbasins (Appendix B-2), and Groups (Appendix B-3);

“Appendix C” is the WWTa Sewer Area Flow Reduction Graphs;

“Appendix D” is the Post-Pilot Study WWTP Performance Criteria

“Appendix E” is the Capacity, Management, Operations and Maintenance Programs.

“Appendix F” is the List of Community Groups

Dated and entered this 16th day of July, 2024.

A handwritten signature in blue ink, appearing to read "J. D. Smith", is positioned above a horizontal line.

UNITED STATES DISTRICT JUDGE

FOR THE UNITED STATES OF AMERICA:

TODD KIM
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice

09/29/2023
Date

s/ Peter Krzywicki
PETER KRZYWICKI
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044-7611
Telephone: (202) 532-3128
E-Mail: krzywicki.peter@usdoj.gov

FOR THE UNITED STATES OF AMERICA (continued):

FRANCIS M. (TREY) HAMILTON III
Acting United States Attorney
Eastern District of Tennessee

ROBERT C. MCCONKEY, III
Chief, Civil Division
Assistant United States Attorney
Eastern District of Tennessee
800 Market Street, Suite 211
Knoxville, TN 37902
Phone: 865-225-1657
Email: Robert.McConkey@usdoj.gov

FOR THE U.S. ENVIRONMENTAL PROTECTION
AGENCY:

Leif Palmer Digitally signed by Leif Palmer
Date: 2023.07.20 10:18:17
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Date

LEIF PALMER
Regional Counsel
U.S. Environmental Protection Agency, Region 4
61 Forsyth St., SW
Atlanta, GA 30303

OF COUNSEL:

PAUL SCHWARTZ
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 4
Office of Regional Counsel
61 Forsyth St., SW
Atlanta, GA 30303
Telephone: (404) 562-9576

FOR THE U.S. ENVIRONMENTAL PROTECTION
AGENCY (continued):

ROSEMARIE
KELLEY



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KELLEY
Date: 2023.09.11 18:03:09 -04'00'

Date

ROSEMARIE KELLEY
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

DANE
WILSON



Digitally signed by
DANE WILSON
Date: 2023.09.07
16:17:03 -04'00'


Date

DANE A. WILSON
Attorney, Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency

FOR THE STATE OF TENNESSEE:

JONATHAN SKRMETTI
Attorney General and Reporter of Tennessee

9/22/23
Date



WILSON BUNTIN
Senior Assistant Attorney General
Environmental Division
Office of the Tennessee Attorney General
P. O. Box 20207
Nashville, TN 37202-0207
Telephone: (615) 253-5118
E-Mail: wilson.buntin@ag.tn.gov

FOR HAMILTON COUNTY WATER AND
WASTEWATER TREATMENT AUTHORITY:

9/27/23
Date

A handwritten signature in blue ink, appearing to read "Dick Gee", written over a horizontal line.

NAME
Dick Gee, Chair of Board of Commissioners

APPENDIX A

Early Action Project Summaries & Schedules

Appendix A – Early Action Project Summaries & Schedules

WWTA has been working on certain Early Action Projects that it has agreed with EPA and TDEC to complete. While some of the projects WWTA has been working on have already been completed, WWTA has not completed the following Early Action Projects and agrees, as provided in Paragraph 20 of the Consent Decree, to complete the following projects by the deadlines identified below.

1. East Ridge Basin 3C and 4B Rehabilitation

This early action project involves manhole inspections, smoke testing and closed-circuit television inspection (CCTV) of approximately 75,618 linear feet of gravity sewers and 354 manholes located within Basin 3C and 4B basins in the East Ridge Service Area. It is anticipated that the rehabilitation project will include approximately 35,165 linear feet of trenchless pipeline repairs ranging from 6-inch to 10-inch diameter and 755 linear feet of open cut gravity sewer replacement ranging from existing 6-inch to 8-inch diameter; and 1,465 linear feet of pipe bursting of 6-inch gravity main to 8-inch gravity main. It is anticipated that approximately 515 service laterals repairs utilizing trenchless or open cut methods will be required. It is further anticipated that approximately 1,540 vertical feet of manhole repairs may be required utilizing an epoxy or polymer-based lining system, as well as surface manhole repairs. A cost of \$5.331 million is estimated for this project. This project is currently being designed and permitted. Construction, which began in October of 2020, will be completed by June 15, 2023.

2. Lookout Mountain Basins 2, 5, 6, and 9

This early action project involves manhole inspections, smoke testing and closed-circuit television inspection (CCTV) of approximately 62,628 linear feet of gravity sewers and 445 manholes located within Basins 2, 5, 6, and 9 in the Lookout Mountain Service Area. The rehabilitation project includes approximately 24,210 linear feet of trenchless pipeline repairs ranging from 6-inch to 8-inch diameter and 1,150 linear feet of open cut gravity sewer replacement ranging from existing 6-inch to 8-inch diameter. Approximately 159 service lateral repairs utilizing trenchless or open cut methods are required. It is further anticipated that approximately 2,100 vertical feet of manhole repairs may be required utilizing an epoxy or polymer-based lining system, as well as surface manhole repairs. A cost of \$5.47 million is estimated for this project. The project will be performed in two phases. The first phase will consist of rehabilitation projects to reduce infiltration and inflow. The second phase will involve replacement of sections of the downstream sewers to improve hydraulic carrying capacity to eliminate the chronic sanitary sewer overflows occurring near sub-basin LM06. The first phase of the project was completed in December of 2020. Phase 2 work started in June 2022, and final construction will be completed by June 1, 2023.

3. Red Bank Basin 5 Rehabilitation

Appendix A: Early Action Project Summaries & Schedules

This early action project involves manhole inspections, smoke testing and closed-circuit television inspection (CCTV) of approximately 32,303 linear feet of gravity sewers and 139 manholes located within Basin 5 in the Red Bank Service Area. It is anticipated that the rehabilitation project will include approximately 6,000 linear feet of trenchless pipeline repairs ranging from 8-inch to 12-inch diameter. It is anticipated that approximately 120 service laterals repairs utilizing trenchless or open cut methods will be required. It is further anticipated that approximately 800 vertical feet of manhole repairs may be required utilizing an epoxy or polymer-based lining system, as well as surface manhole repairs. A cost of \$2.5 million is estimated for this project. Construction began in September of 2022, and will be completed by June 15, 2024.

4. Red Bank Basin 6 Rehabilitation

This early action project involves manhole inspections, smoke testing and closed-circuit television inspection (CCTV) of approximately 36,971 linear feet of gravity sewers and 149 manholes located within Basin 6 in the Red Bank Service Area. It is anticipated that the rehabilitation project will include approximately 7,000 linear feet of trenchless pipeline repairs ranging from 8-inch to 12-inch diameter. It is anticipated that approximately 95 service lateral repairs utilizing trenchless or open cut methods will be required. It is further anticipated that approximately 600 vertical feet of manhole repairs may be required utilizing an epoxy or polymer-based lining system, as well as surface manhole repairs. A cost of \$2.5 million is estimated for this project. Construction began in September of 2022, and will be completed by June 15, 2024.

5. Red Bank Basin 7 Rehabilitation

This early action project involves manhole inspections, smoke testing and closed-circuit television inspection (CCTV) of approximately 18,642 linear feet of gravity sewers and 95 manholes located within Basin 7 in the Red Bank Service Area. It is anticipated that the rehabilitation project will include approximately 8,000 linear feet of trenchless pipeline repairs ranging from 8-inch to 12-inch diameter. It is anticipated that approximately 150 service lateral repairs utilizing trenchless or open cut methods will be required. It is further anticipated that approximately 500 vertical feet of manhole repairs may be required utilizing an epoxy or polymer-based lining system, as well as surface manhole repairs. A cost of \$2.5 million is estimated for this project. Construction began in September of 2022 and will be completed by June 15, 2024.

6. Soddy-Daisy Equalization Station

This project involves the construction of 3 million gallons of wet-weather storage immediately adjacent to the Soddy Industrial Pump Station. The purpose of the project is to eliminate a chronic SSO upstream of the pump station and to attenuate wet-weather flow into the City of Chattanooga wastewater system. The project began in November of 2022 and construction will be completed by November 15, 2023 at a cost of approximately \$5.2 million.

WWTA Remaining Early Action Project Schedule

Appendix A: Early Action Project Summaries & Schedules

Project	Start Date	Approximate End Date	Approximate Cost
East Ridge Basin 3C and 4B Rehabilitation	October 15, 2020	June 15, 2023	\$5,331,765
Lookout Mountain Basins 2,5,6 and 9	July 1, 2019	June 1, 2023	\$5,474,000
Red Bank Basin 5 Rehabilitation	July 15, 2022	June 15, 2024	\$2,500,000
Red Bank Basin 6 Rehabilitation	July 15, 2022	June 15, 2024	\$2,500,000
Red Bank Basin 7 Rehabilitation	July 15, 2022	June 15, 2024	\$2,500,000
Soddy Daisy Equalization Facility	November 1, 2022	November 15, 2023	\$5,200,000

WWTA certifies that it has already completed the following projects:

1. Lee Highway Pump Station and Force Main Project

This early action project involved replacing the existing 16-inch force main that discharged to the Collegedale Pump Station with a new force main approximately 10,500 feet in length that was connected directly to the City of Chattanooga's Interceptor Sewer System near the intersection of Apison Pike and Old Lee Highway. The new force main was intended to alleviate capacity issues at the Collegedale Pump Station. In addition to this new force main, the pumps at the Lee Hwy Pump Station were replaced to handle a design condition of 3,500 gallons per minute with a total dynamic head of 225 feet. The project cost approximately \$4.1 million and was completed in December of 2021.

2. East Ridge Basin 10 Rehabilitation

This early action project involved manhole inspections, smoke testing and closed-circuit television inspection (CCTV) of approximately 67,528 linear feet of gravity sewers and 279 manholes located within Basin 10 in the East Ridge Service Area. The rehabilitation project included approximately 33,153 linear feet of trenchless pipeline repairs ranging from 6-inch to 18-inch diameters and 670 linear feet of open cut gravity sewer replacement ranging from existing 6-inch to 8-inch diameters. Approximately 687 service lateral repairs utilizing trenchless or open cut methods were required. Approximately 2,064 vertical feet of manhole repairs were made utilizing epoxy and polymer-based lining systems. The project also included manhole repairs and included sanitary sewer evaluation studies (SSES) of sub-basins ER1A, ER3A, ER3B, ER4B, ER5 and ER8A. The SSES investigations involved manhole inspections, smoke testing and closed-circuit television (CCTV) inspections of all assets within the basin. Phase 2 of this project included manhole repairs and the removal of sources of infiltration and inflow

around the East Ridge Lift Station (former East Ridge Wastewater Treatment Plant.) These projects were completed in June 2022 at a cost of approximately \$7.01 million.

3. East Ridge I-75 Collector Sewer

This early action project involved the replacement of three severely deteriorated collector sewers under I-75 north and south of Exit #1. These three crossings, two that carried sanitary sewers from the western portion of East Ridge Basin 10 and one that brought the combined flows from East to West back under I-75, were replaced with a new collector sewer with only one crossing of I-75. This project dramatically improved hydraulic carrying capacity and removed sources of infiltration and inflow and eliminated two chronic sanitary sewer overflows at manhole ID 24 and at manhole ID 61E. The project involved installation of 2,600 linear feet of open cut 16-inch ductile iron gravity sewer, 650 linear feet of 16-inch ductile iron gravity sewer associated with jack and bore installation with 600-linear feet of 30-inch steel casing pipe, 1,800 linear feet of open cut 12-inch ductile iron and PVC gravity sewer, 200 linear feet of open cut 8-inch PVC gravity sewer, and the installation of associated precast sewer manholes with watertight frame and covers. The project was advertised for bid on July 14, 2020 and a Notice to Proceed was issued on August 19, 2020. The project was put in service in May of 2022. This project cost approximately \$3,385,973 and final project close-out occurred in March of 2023.

4. Short Tail Springs Pump Station & Force Main Rehabilitation

This phase included upgrades to the Short Tail Springs Pump Station and force main to upsize approximately 7,800 linear feet of force main and provide backup up emergency pumping capacity to this station. Phase 1 of this project consisted of the replacement of a portion of the force main and was completed in September 2021. Phase 2 of this project consisted of upgrading the pumping capacity and installing new controls and a backup diesel pump to run during electrical outages. This was completed in December 2022 at a cost of approximately \$3.1 million.

5. Roy Lane, Snow Hill, and Green Gap Pump Stations

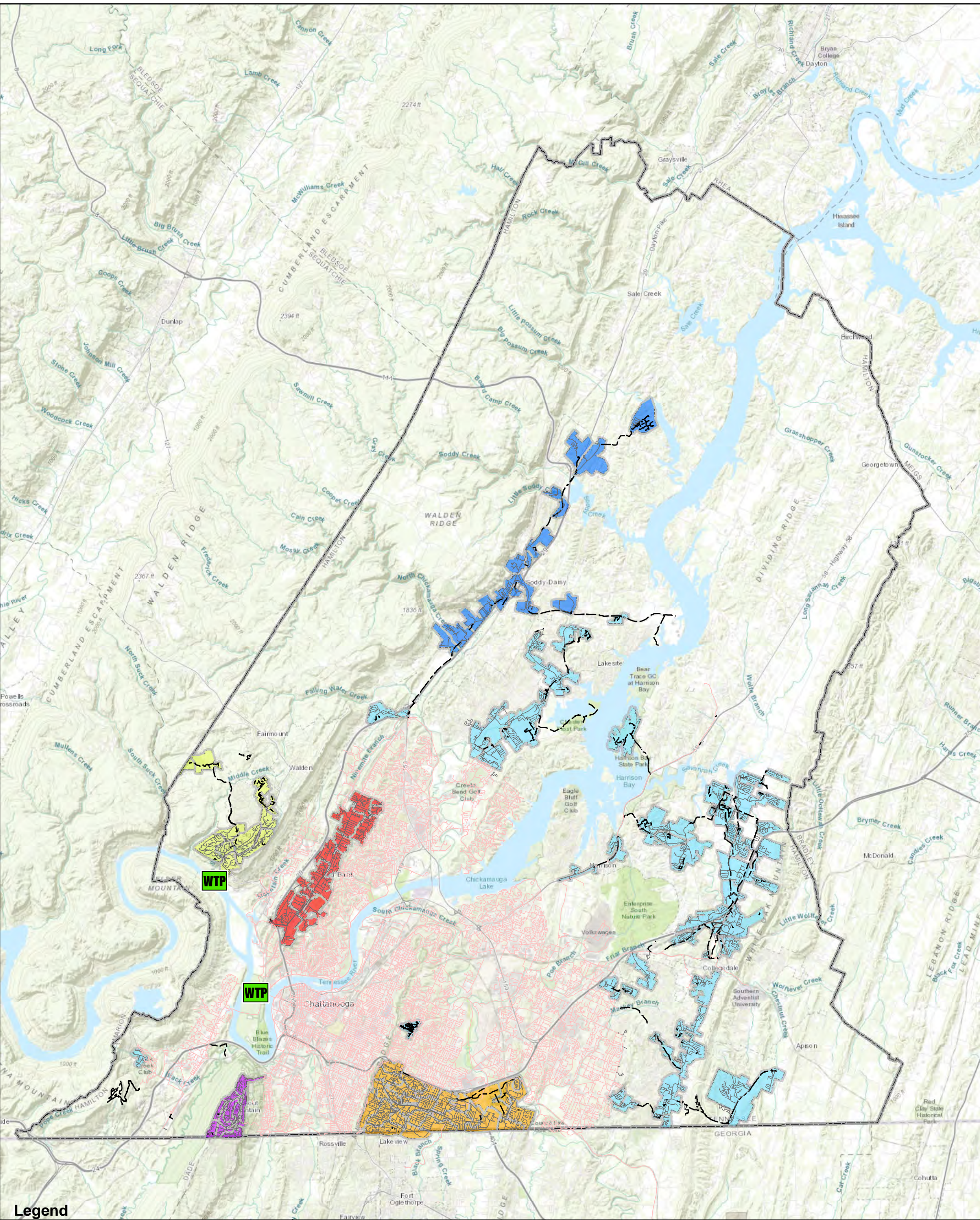
This early action project involved upgrading several pump stations and force mains to eliminate sanitary sewer overflows and extend the useful life of these stations. The Roy Lane Pump Station upgrade project involved installing larger pumps in the station and reversing flow from this station to the Green Gap Pump Station. The flow from the Snow Hill Road Pump Station was then reversed so that flow was pumped to the Roy Lane Pump Station from Snow Hill Road pump station instead of that station pumping to the Rogers Branch Pump Station. The project required some modifications to the Green Gap force main to allow the connection of the Roy Lane Force Main. This project was done in tandem with the Mountain View Force Main project to alleviate capacity issues at the Snow Hill Road Pump Station and the Rogers Branch Pump Station and to allow flow to be pumped directly to the Amos Road Pump Station. The work was completed in June 2021 at a cost of approximately \$500,000.

Appendix A: Early Action Project Summaries & Schedules

Project	Start Date	End Date	Approximate Cost
East Ridge Basin 10 Rehabilitation (COMPLETED)	July 1, 2018	June 1, 2022	\$7,010,000
East Ridge I-75 Collector Sewer Replacement (COMPLETED)	August 2020	March 2023	\$3,385,973
Roy Lane, Snow Hill, Green Gap PS Upgrades (COMPLETED)	February 15, 2020	June 1, 2021	\$500,000
Lee Hwy Pump Station and Force Main (COMPLETED)	September 15, 2019	December 31, 2021	\$4,100,000
Short Tail Springs Pump Station and Force Main (COMPLETED)	July 1, 2021	December 31, 2022	\$3,100,000

APPENDIX B-1

WWTA CD Service Areas



- Legend**
- Treatment Plant
 - East Ridge
 - Hamilton County
 - Lookout Mountain
 - Ooltewah
 - Red Bank
 - Signal Mountain
 - Soddy Daisy
 - Hamilton County Boundary

APPENDIX B-1 WWTa CD SERVICE AREAS

FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY



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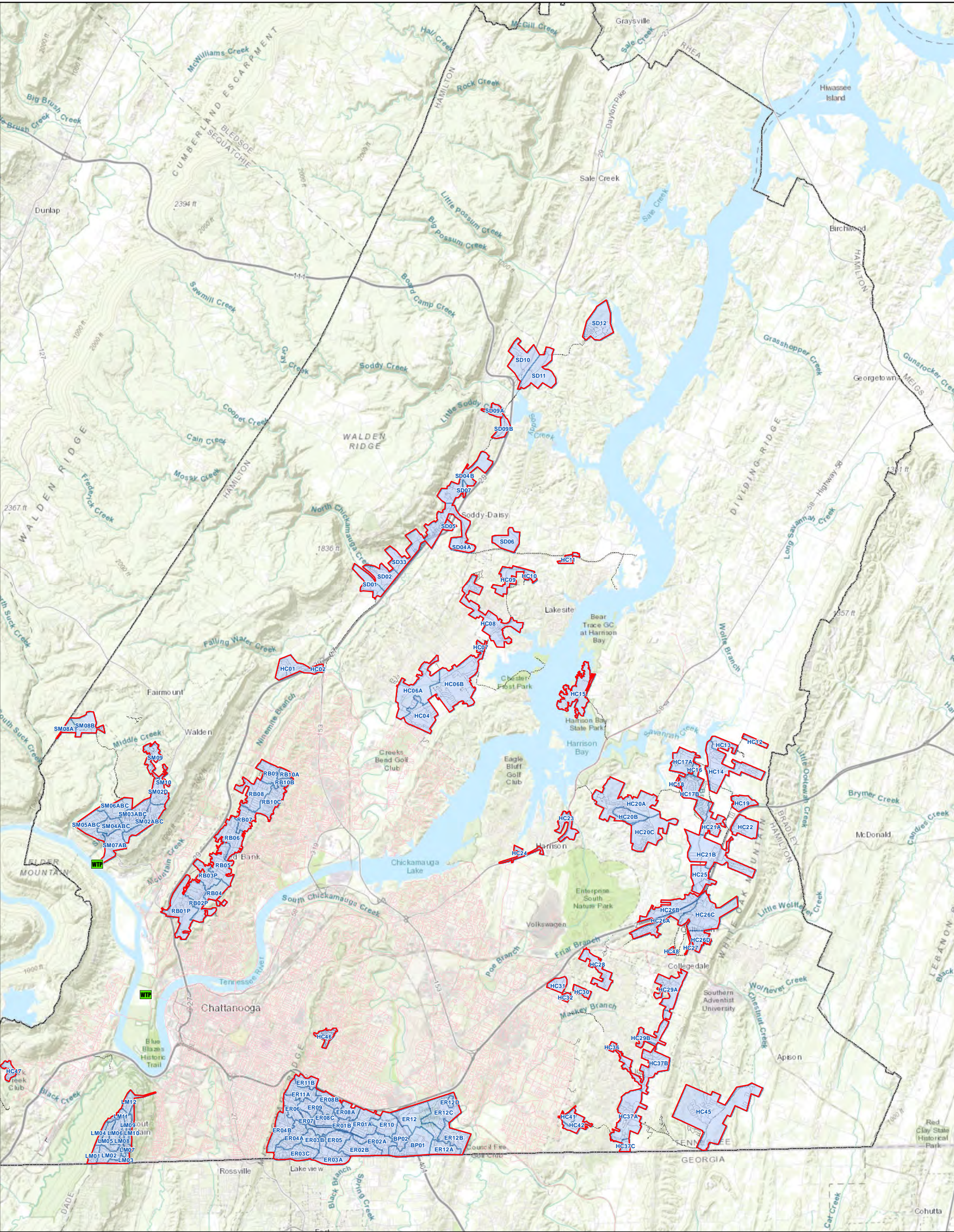


0 7,000 14,000 28,000
Feet

PROJECT NUMBER 2015-0759

APPENDIX B-2

WWTA Sewerbasins



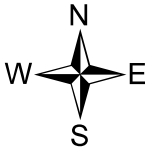
- Legend**
- Service Boundary
 - SSS Basins**
 - SSS Basins
 - Hamilton County Boundary
 - WTP** Treatment Plant
 - Gravity Main
 - Pressurized Main
 - Pipes

APPENDIX B-2
WWTA SEWERBASINS

FOR:
**HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY**

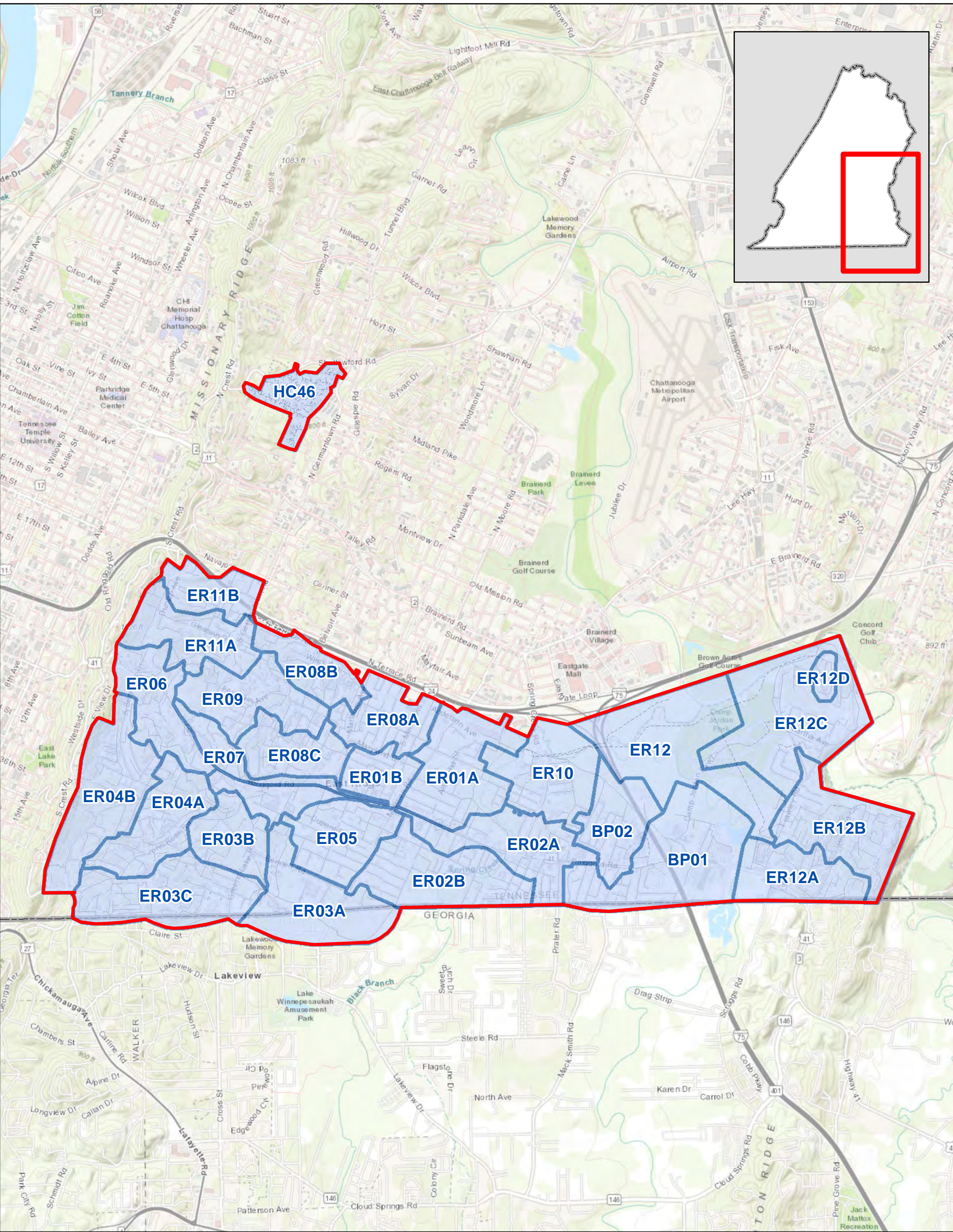


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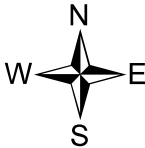
0 5,500 11,000 22,000 Feet

PROJECT NUMBER 2015-0759

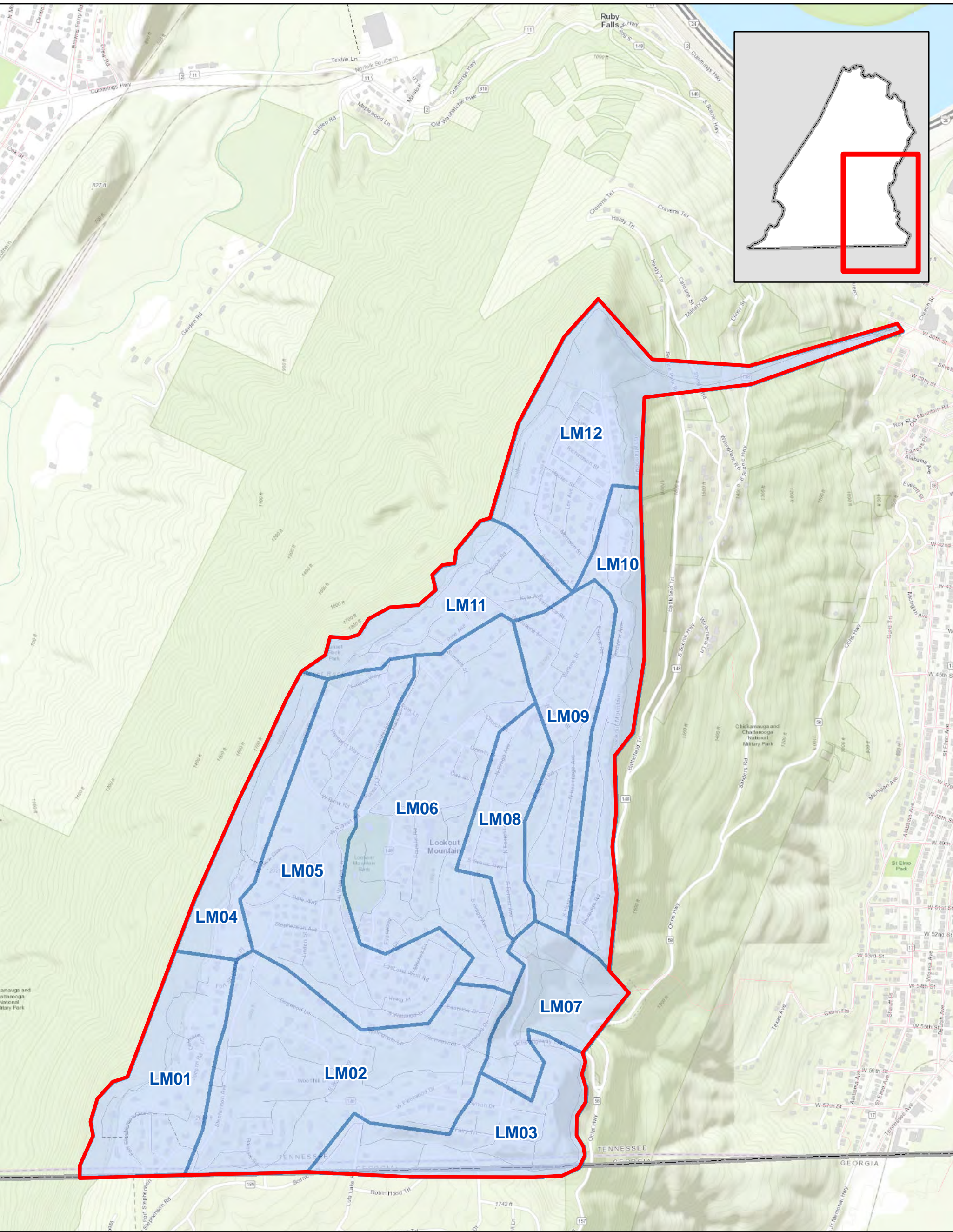


- Legend**
- SSES Basins
 - Service Boundary
 - Hamilton County Boundary
 - Treatment Plant
 - Gravity Main
 - Pressurized Main
 - Pipes

APPENDIX B-2-1
WWTA SUB BASIN GROUPS
EAST RIDGE
FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY



0 1,250 2,500 5,000 Feet



- Legend**
- SSES Basins
 - Service Boundary
 - Hamilton County Boundary
 - Treatment Plant
 - Gravity Main
 - Pressurized Main
 - Pipes

APPENDIX B-2-2
WWTA SEWERBASINS
LOOKOUT MOUNTAIN

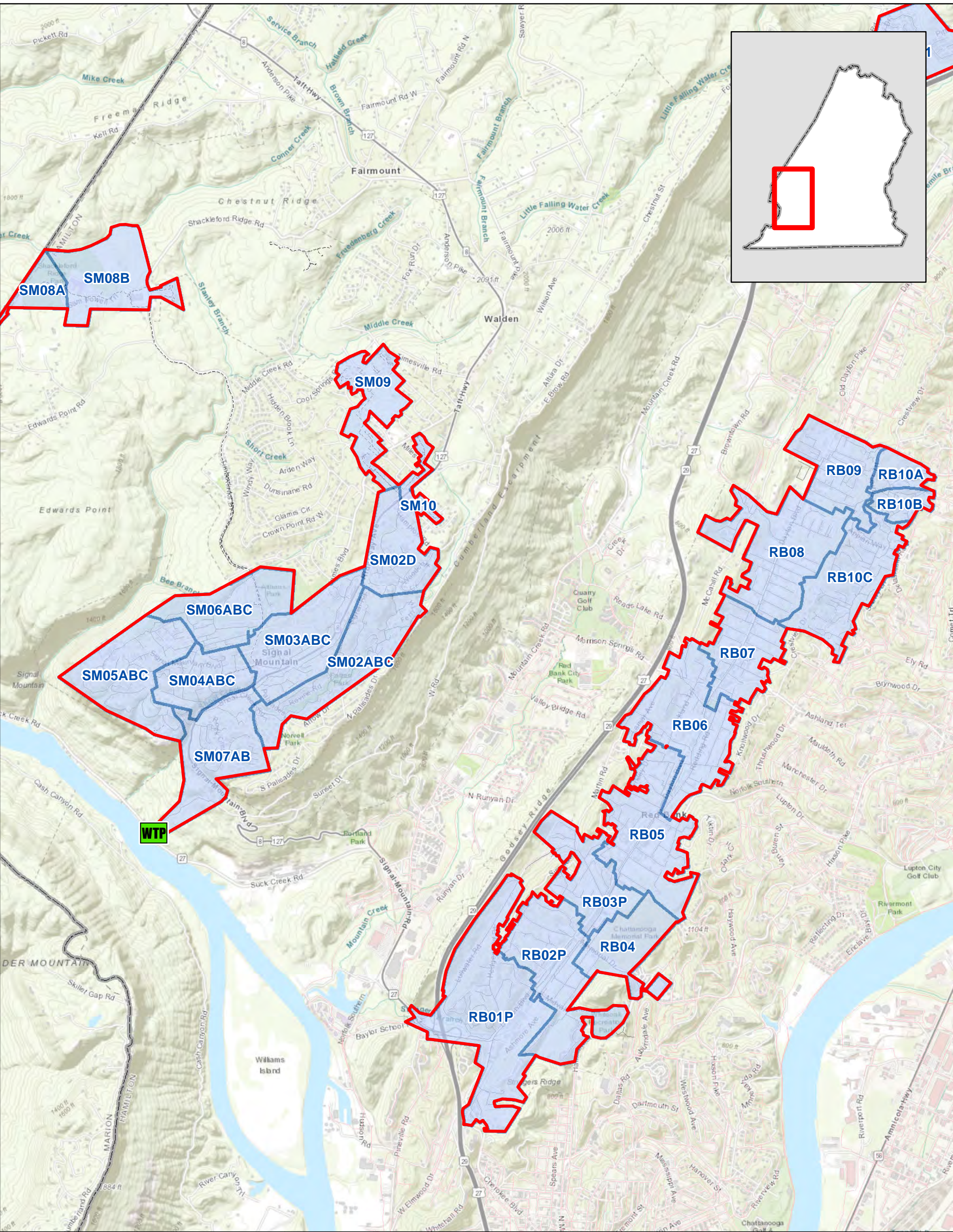
FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY



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0 500 1,000 2,000
Feet

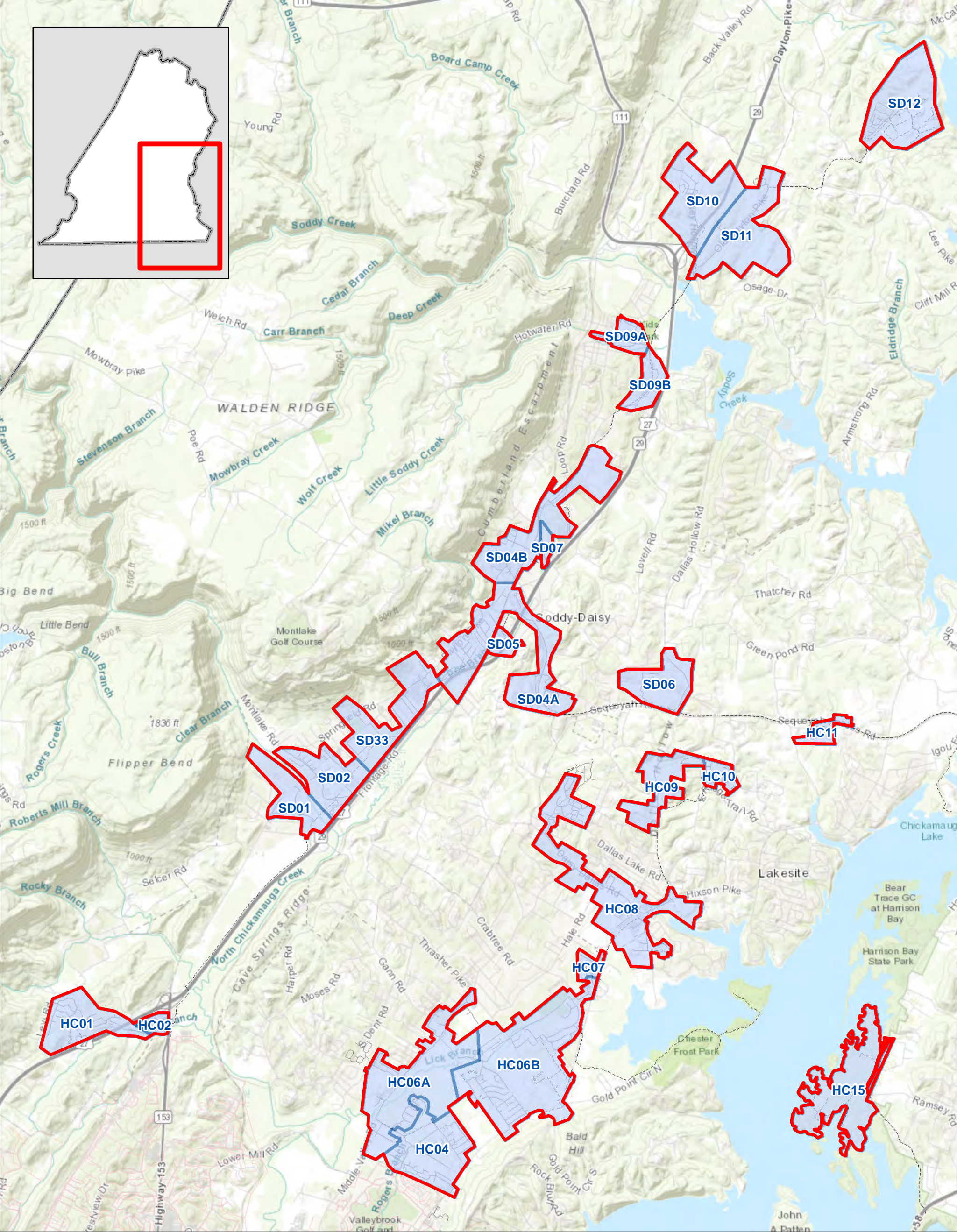


- Legend**
- SSES Basins
 - Service Boundary
 - Hamilton County Boundary
 - WTP Treatment Plant
 - Gravity Main
 - Pressurized Main
 - Pipes

APPENDIX B-2-3
WWTA SUB BASIN GROUPS
SIGNAL MOUNTAIN AND RED BANK
FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY



0 1,200 2,400 4,800 Feet

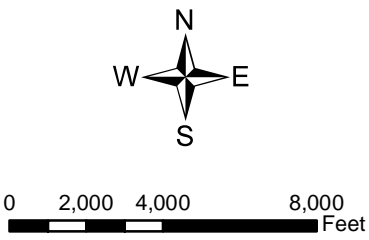


- Legend**
- SSES Basins
 - Service Boundary
 - Hamilton County Boundary
 - Treatment Plant
 - Gravity Main
 - Pressurized Main
 - Pipes

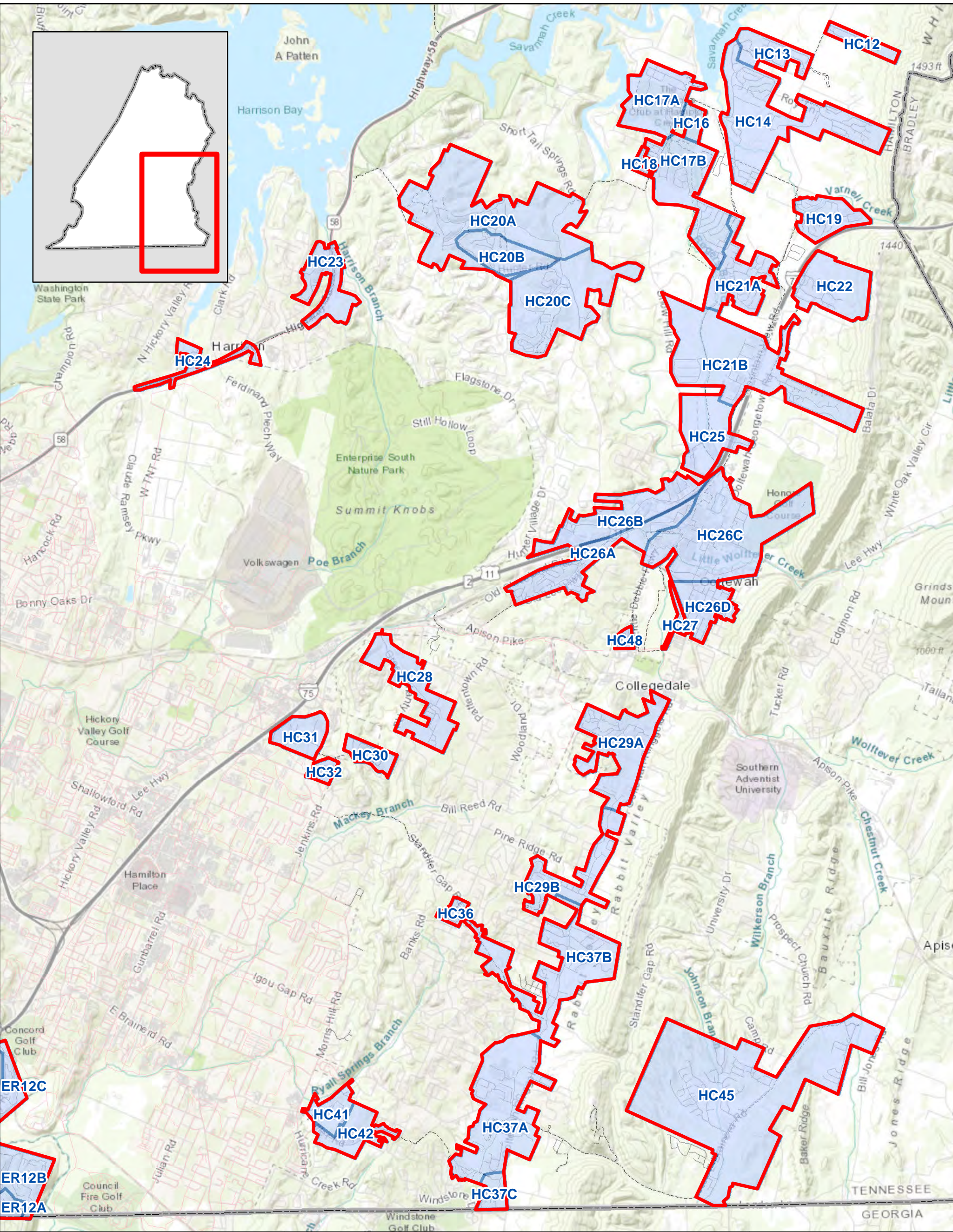
APPENDIX B-2-4
WWTA SEWERBASINS
SODDY-DAISY AND HAMILTON COUNTY

FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY








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PROJECT NUMBER 2015-0759



Legend

-  SSES Basins
-  Service Boundary
-  Hamilton County Boundary
-  Treatment Plant
-  Gravity Main
-  Pressurized Main
-  Pipes

**APPENDIX B-2-5
WWTA SEWERBASINS
UNINCORPORATED HAMILTON COUNTY**

FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY



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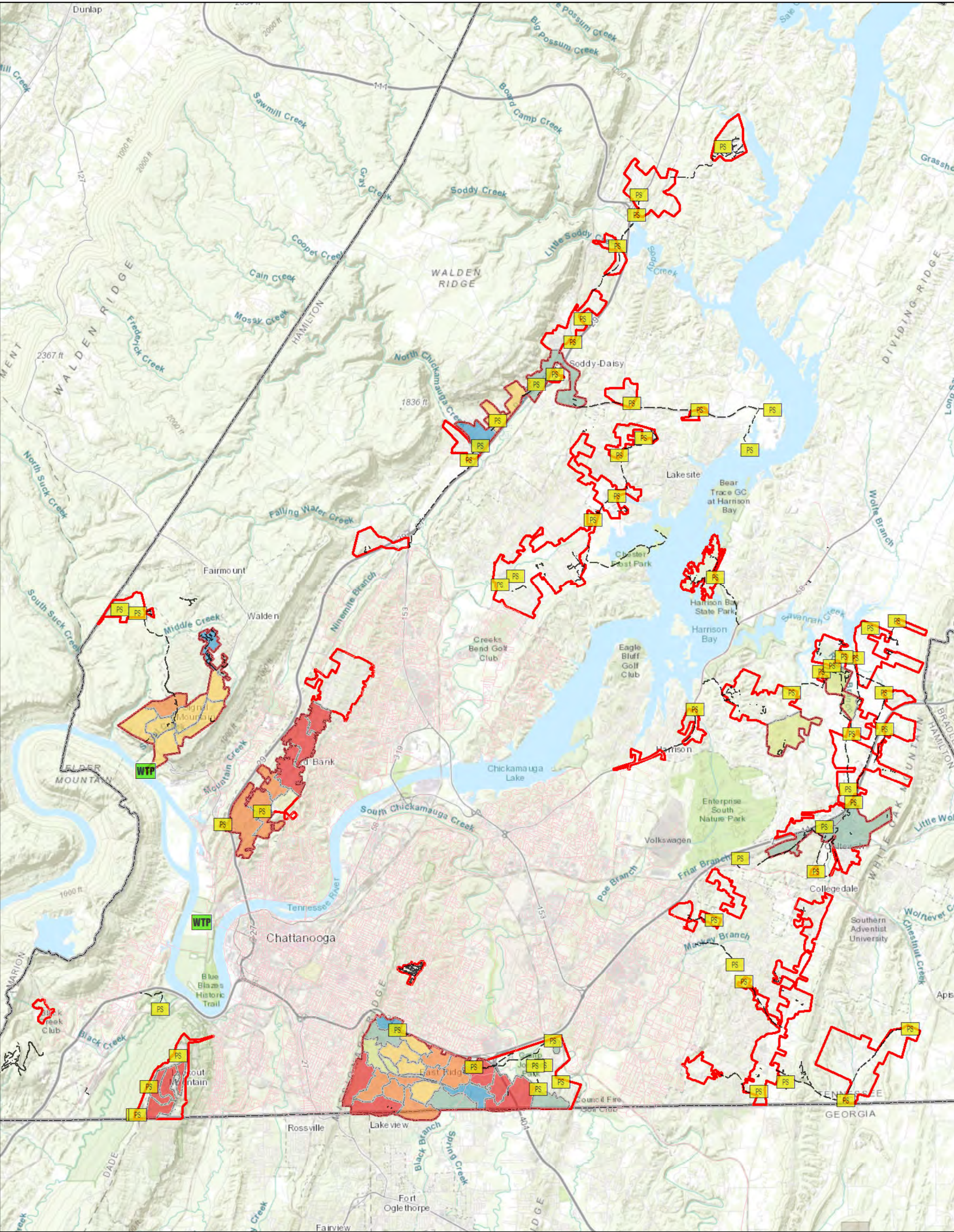
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0 2,000 4,000 8,000 Feet

APPENDIX B-3

WWTA Sub Basin Groups



- Legend**
- SSES Basins Updated**
- Basin Grouping**
- EA
 - 1
 - 2
 - 3
 - 4
 - 5
- Hamilton County Boundary
- Service Boundary
- Lift Station

- WTP Treatment Plant
- Pressurized Main
- Pipes

APPENDIX B-3

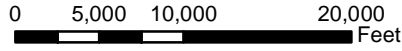
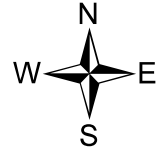
WWTA SUB BASIN GROUPS

FOR:

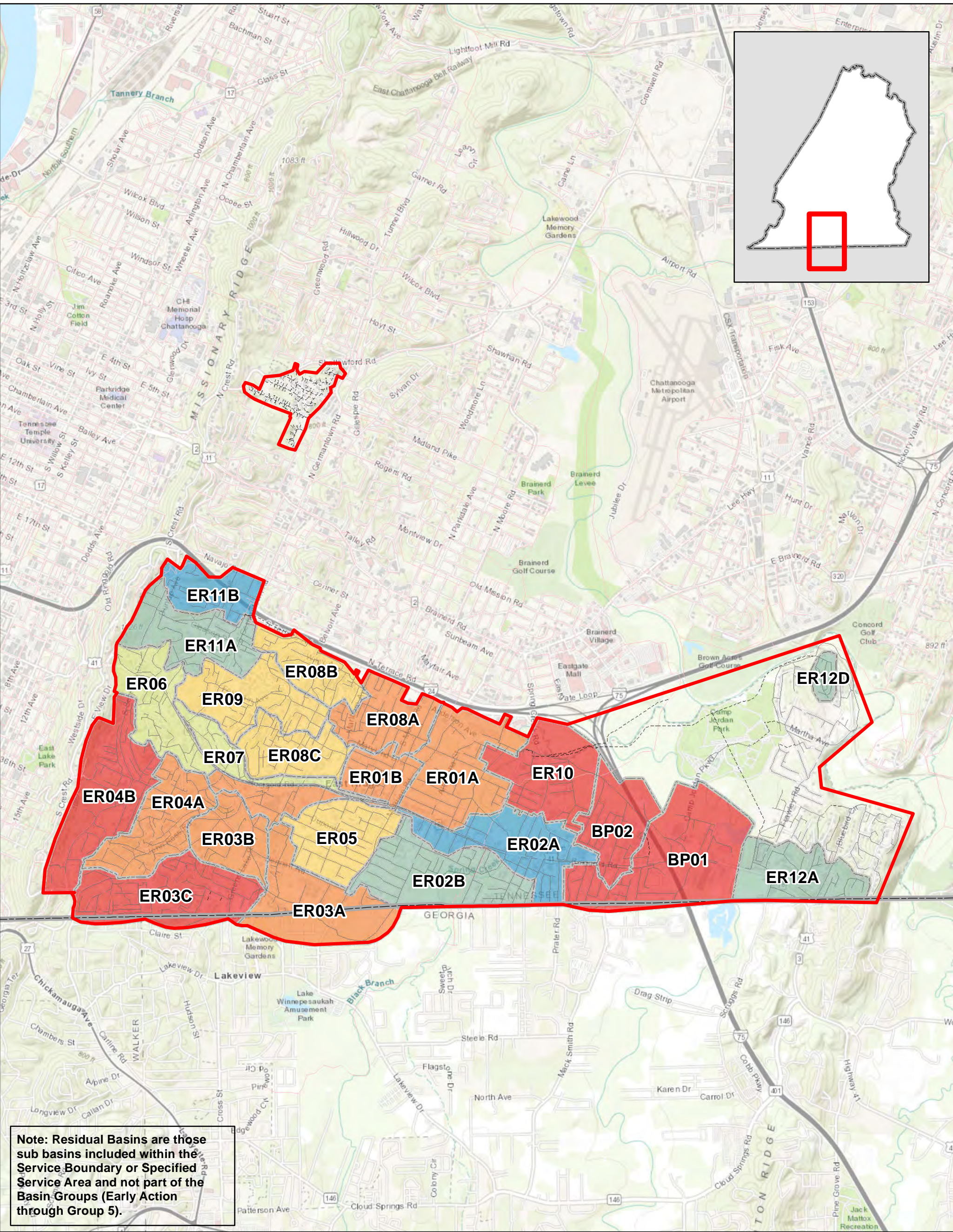
HAMILTON COUNTY WATER & WASTEWATER TREATMENT AUTHORITY



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PROJECT NUMBER 2015-0759



Note: Residual Basins are those sub-basins included within the Service Boundary or Specified Service Area and not part of the Basin Groups (Early Action through Group 5).

- Legend**
- SSES Basins Updated**
- Basin Grouping**
- EA
 - 1
 - 2
 - 3
 - 4
 - 5
- Service Boundary
- Hamilton County Boundary

- WTP** Treatment Plant
- Gravity Main
- Pressurized Main
- Pipes

APPENDIX B-3-1

WWTA SUB BASIN GROUPS

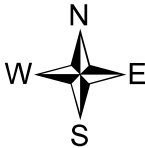
EAST RIDGE

FOR:

HAMILTON COUNTY WATER & WASTEWATER TREATMENT AUTHORITY

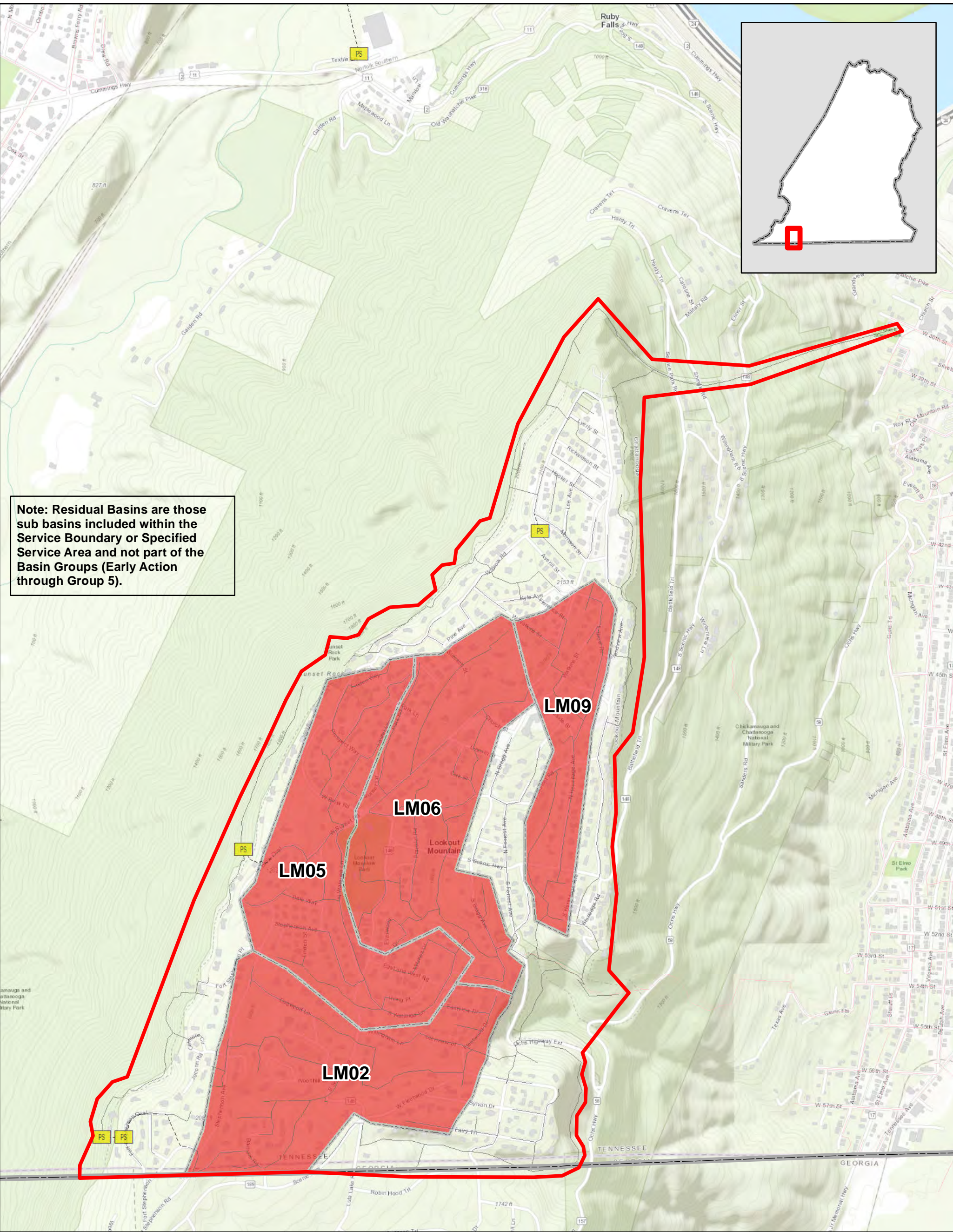


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0 1,250 2,500 5,000 Feet

#:
PROJECT NUMBER 2015-0759



- Legend**
- SSES Basins Updated**
- Basin Grouping**
- EA
 - 1
 - 2
 - 3
 - 4
 - 5
- Service Boundary
- Hamilton County Boundary

- WTP** Treatment Plant
- Gravity Main
- Pressurized Main
- Pipes
- PS** Lift Station

APPENDIX B-3-2

WWTA SUB BASIN GROUPS

LOOKOUT MOUNTAIN

FOR:

HAMILTON COUNTY WATER & WASTEWATER TREATMENT AUTHORITY



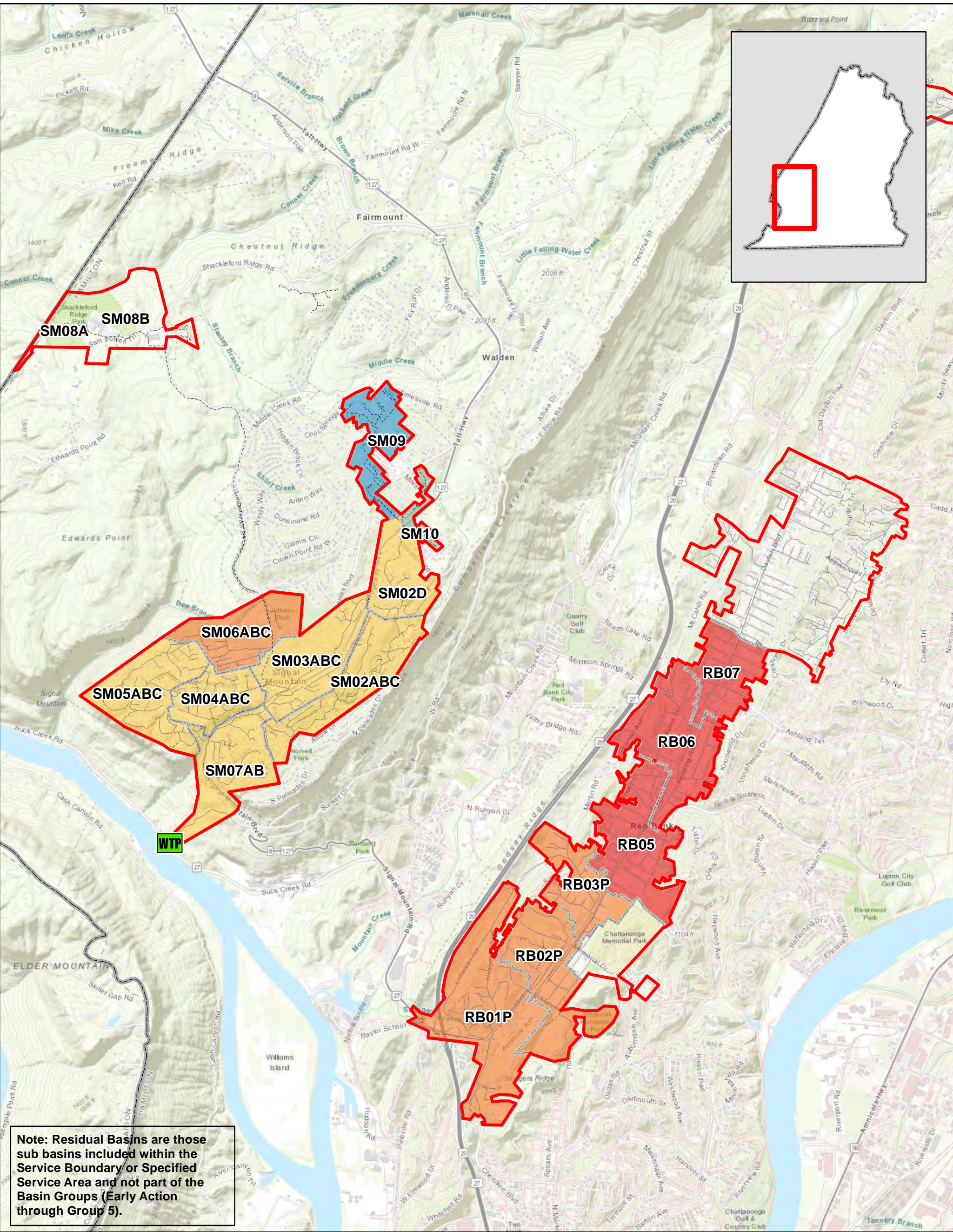
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0 500 1,000 2,000 Feet



- Legend**
- SSES Basins Updated**
- Basin Grouping**
- EA
 - 1
 - 2
 - 3
 - 4
 - 5
- Service Boundary
- Hamilton County Boundary

- WTP** Treatment Plant
- Gravity Main
- Pressurized Main
- Pipes

APPENDIX B-3-3

WWTA SUB BASIN GROUPS

SIGNAL MOUNTAIN AND RED BANK

FOR:

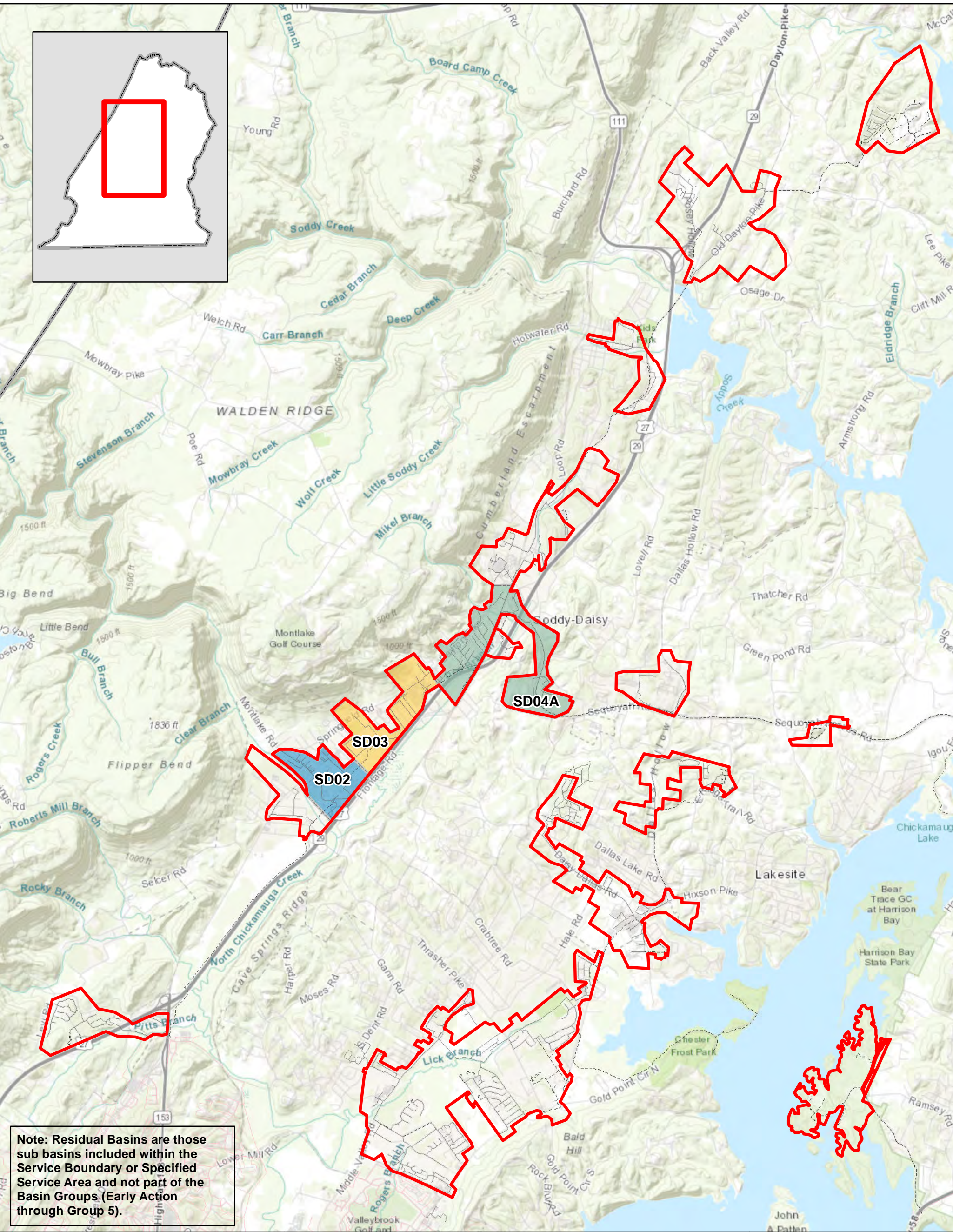
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0 1,250 2,500 5,000 Feet



- WTP** Treatment Plant
- Gravity Main
- Pressurized Main
- Pipes

APPENDIX B-3-4

WWTA SUB BASIN GROUPS

SODDY-DAISY AND HAMILTON COUNTY

FOR:

HAMILTON COUNTY WATER & WASTEWATER TREATMENT AUTHORITY

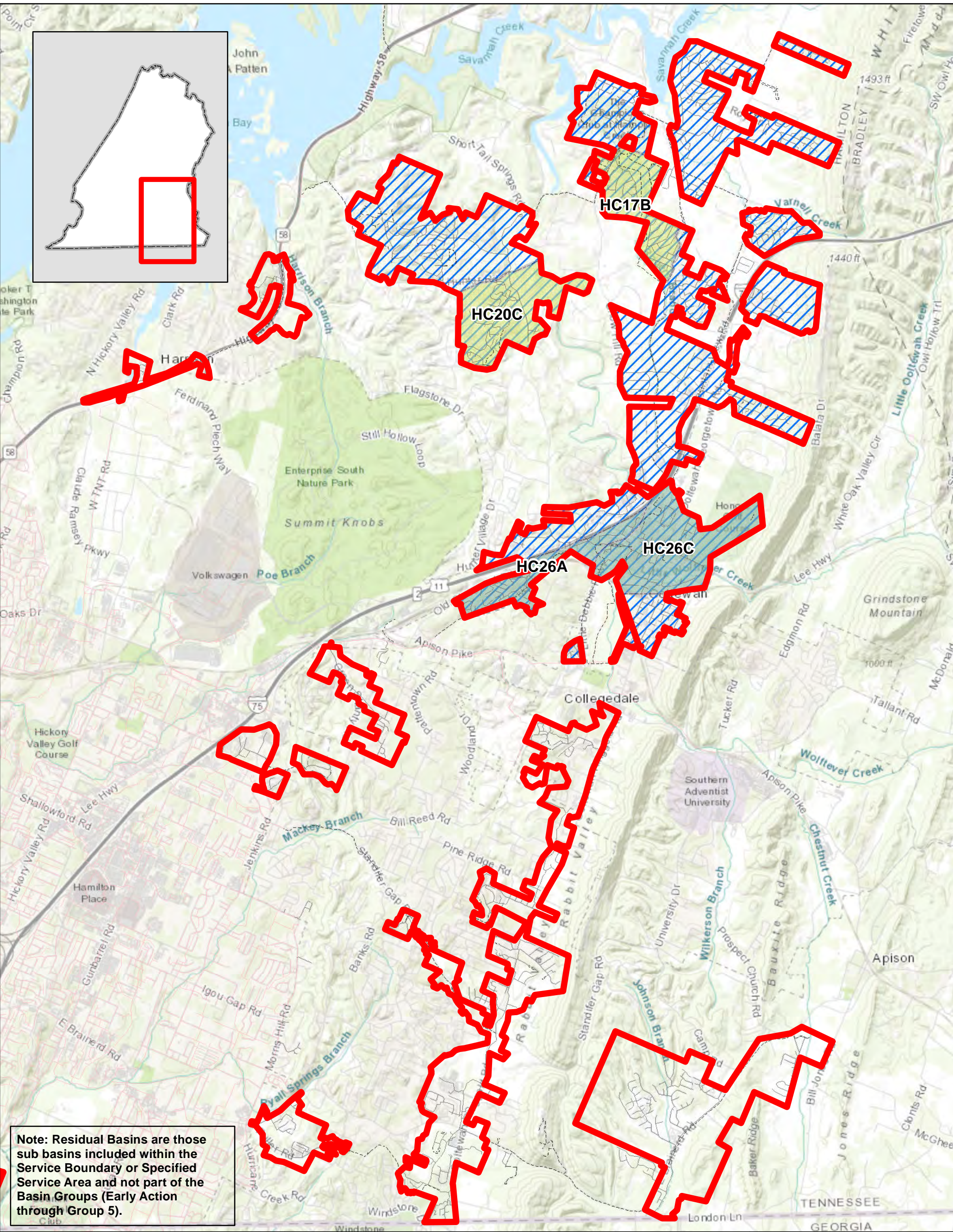


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






0 2,000 4,000 8,000 Feet

PROJECT NUMBER 2015-0759



Legend

- | | |
|--|--|
|  Ooltewah Service Area | Basin Groups |
|  Treatment Plant |  EA |
|  Service Boundary |  1 |
|  Gravity Main |  2 |
|  Pressurized Main |  3 |
|  Pipes |  4 |
| |  5 |

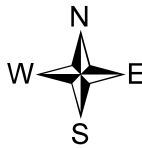
**APPENDIX B-3-5
WWTa SUB BASIN GROUPS
UNINCORPORATED HAMILTON COUNTY**

FOR:
HAMILTON COUNTY WATER & WASTEWATER
TREATMENT AUTHORITY



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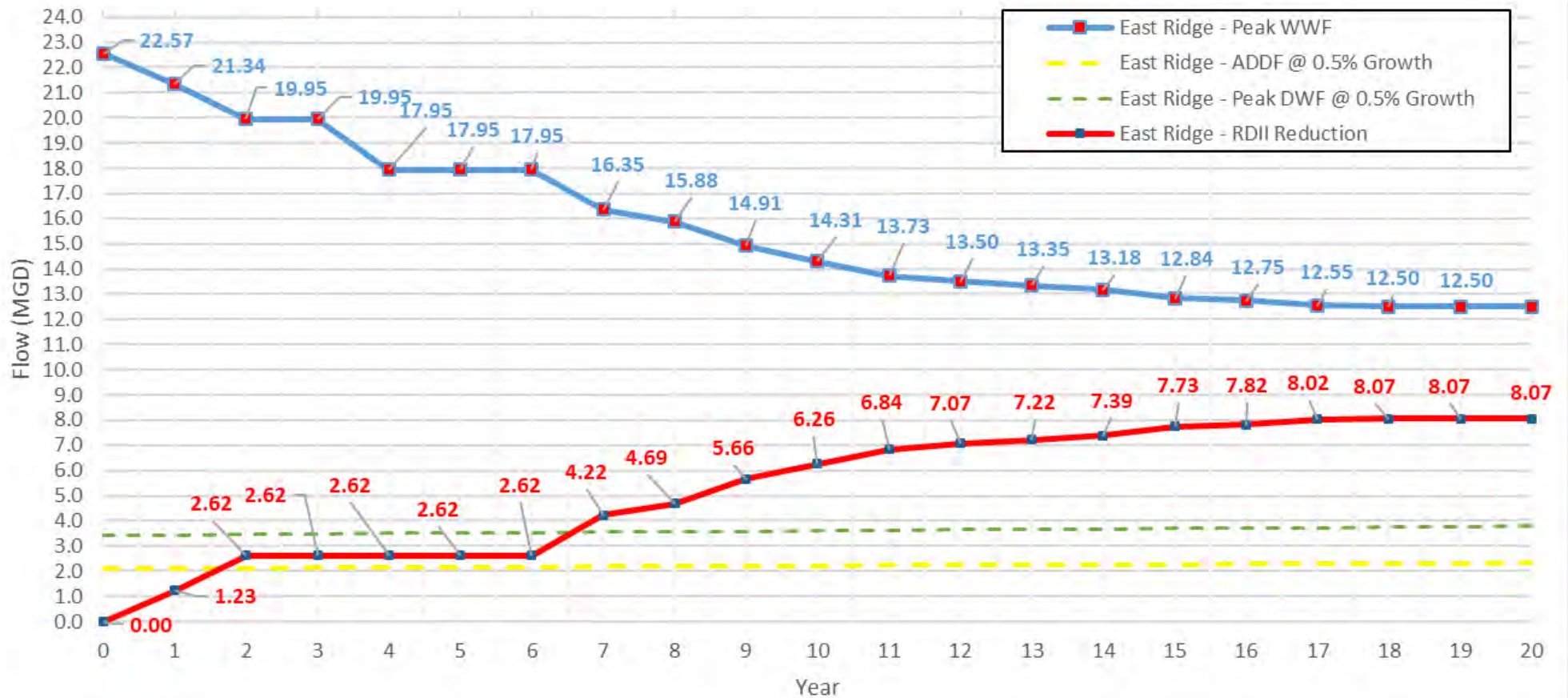
0 1,950 3,900 7,800 Feet

PROJECT NUMBER 2015-0759

APPENDIX C

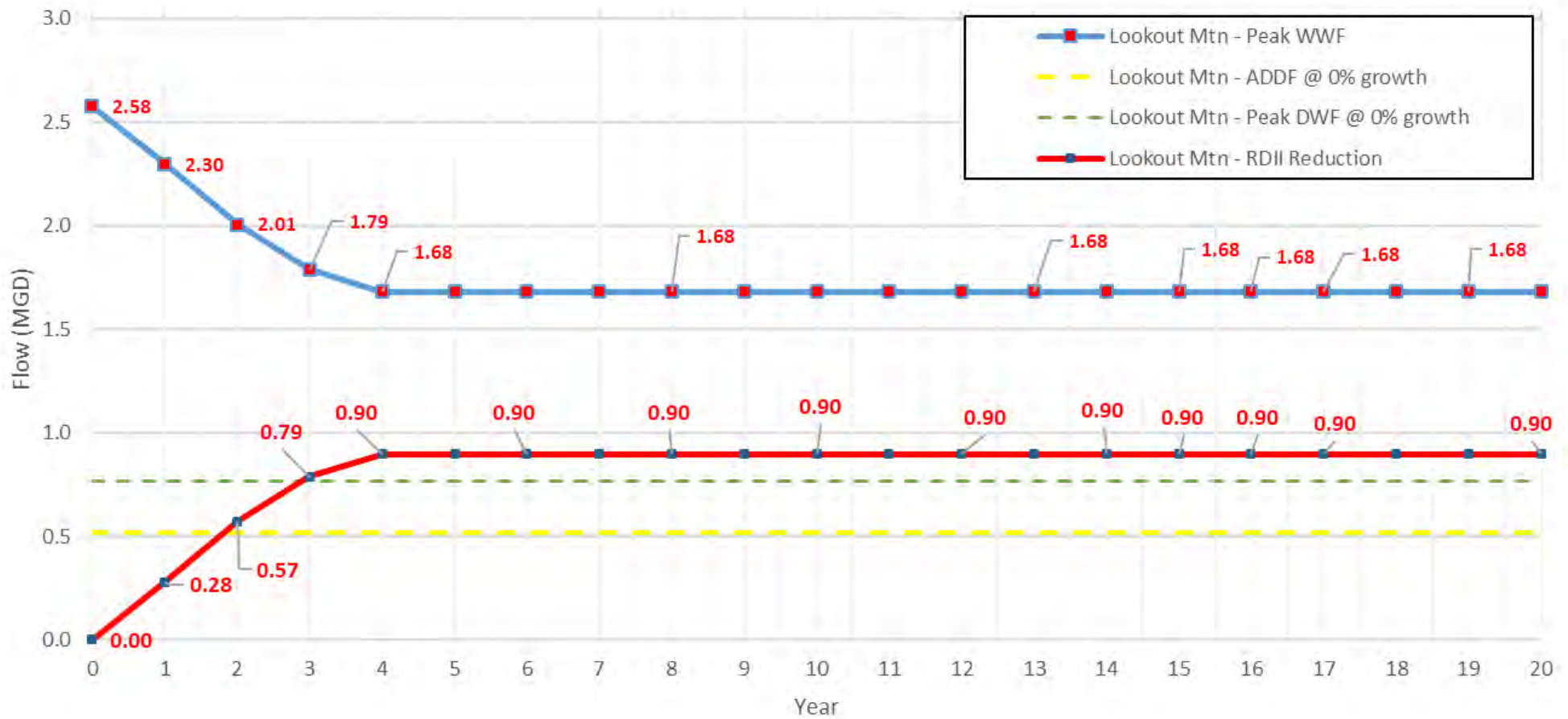
Flow Projection Graphs by Service Area

East Ridge Service Area - Flows CD Timeline



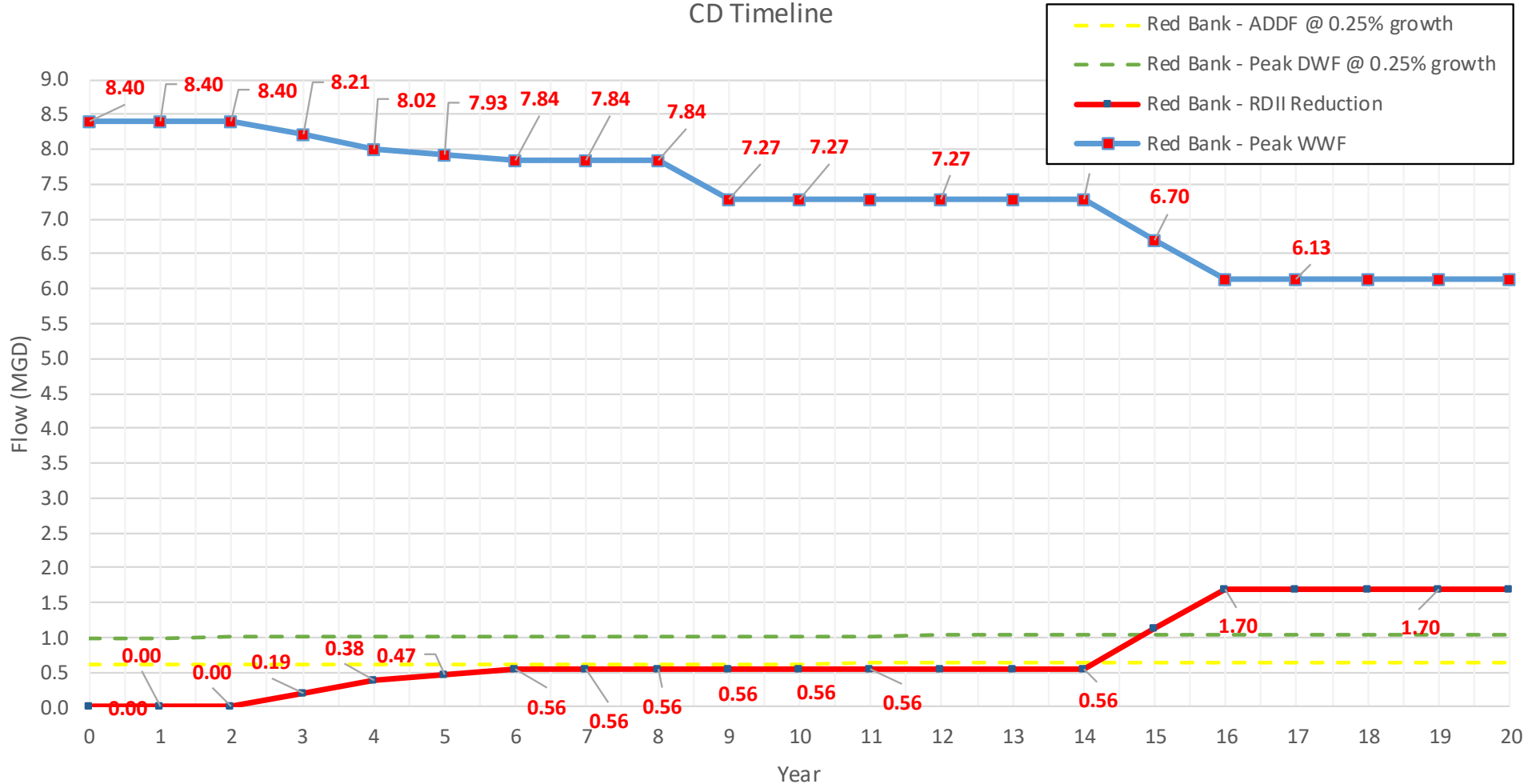
Flow projections are based upon temporary flow monitoring conducted between 2014-2015. Current and future Peak WWF is estimated based on 3-inch 24-hour storm event. These may be revised as more data becomes available and are not intended to represent guaranteed goals that will be reached under the Consent Decree, but to establish a base line estimate of anticipated flows. No credit for installed EQ Storage is shown.

Lookout Mtn Service Area Flows CD Timeline



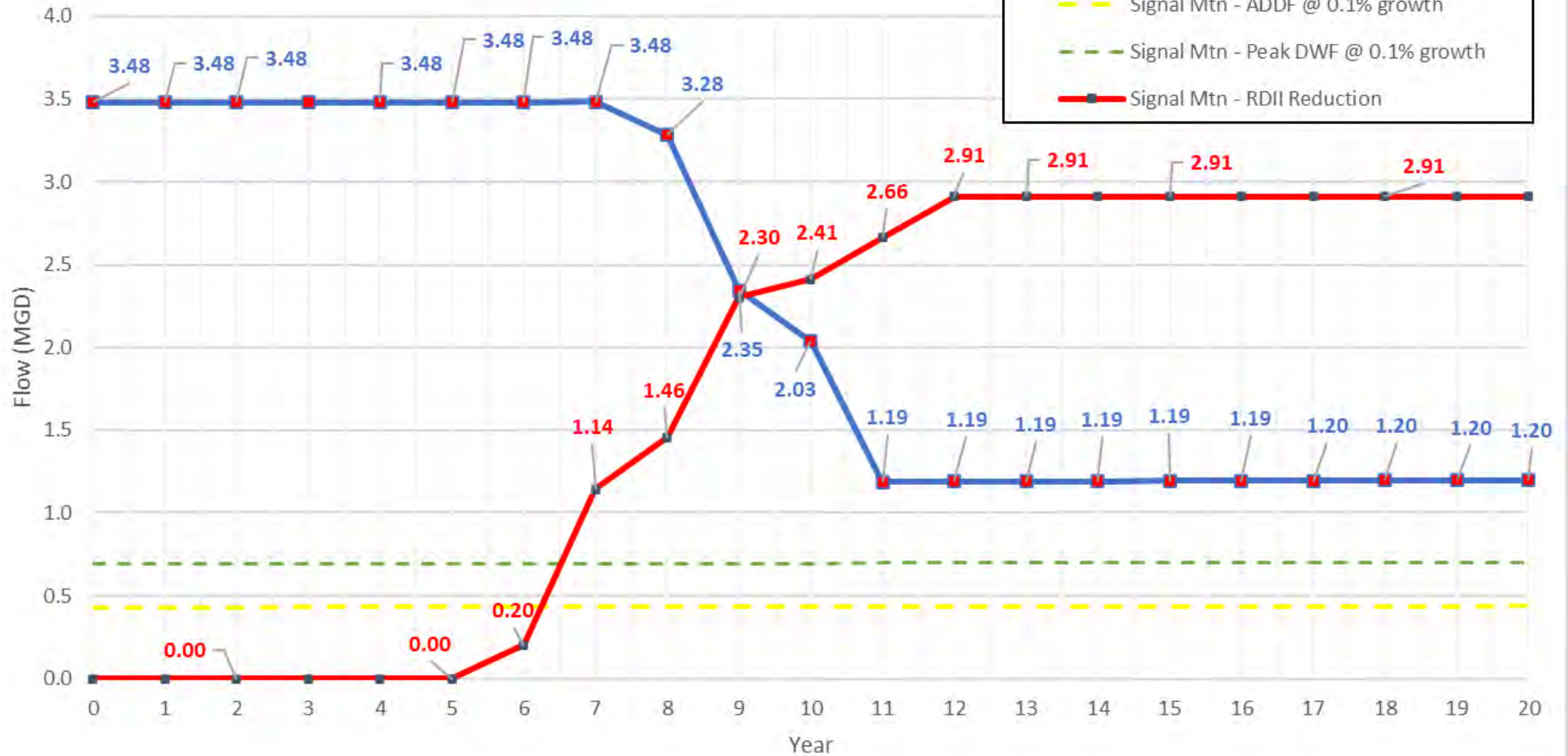
Flow projections are based upon temporary flow monitoring conducted between 2014-2015. Current and future Peak WWF is estimated based on 3-inch 24-hour storm event. These may be revised as more data becomes available and are not intended to represent guaranteed goals that will be reached under the Consent Decree, but to establish a base line estimate of anticipated flows.

Red Bank Service Area - Flows CD Timeline



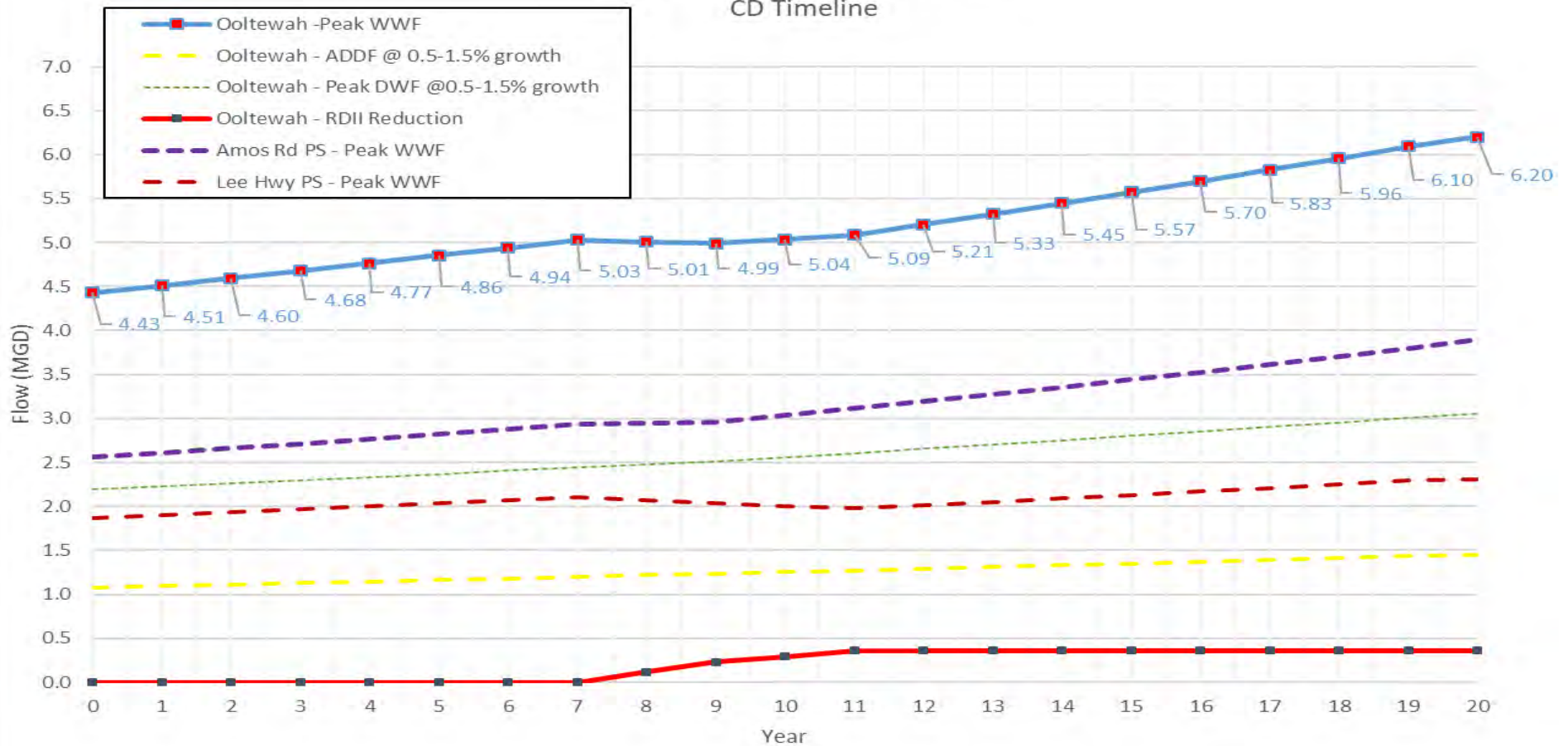
Flow projections are based upon temporary flow monitoring conducted between 2014-2015. Current and future Peak WWF is estimated based on 3-inch 24-hour storm event. These may be revised as more data becomes available and are not intended to represent guaranteed goals that will be reached under the Consent Decree, but to establish a base line estimate of anticipated flows. No credit for installed EQ Storage is shown.

Signal Mtn Service Area - Flows CD Timeline



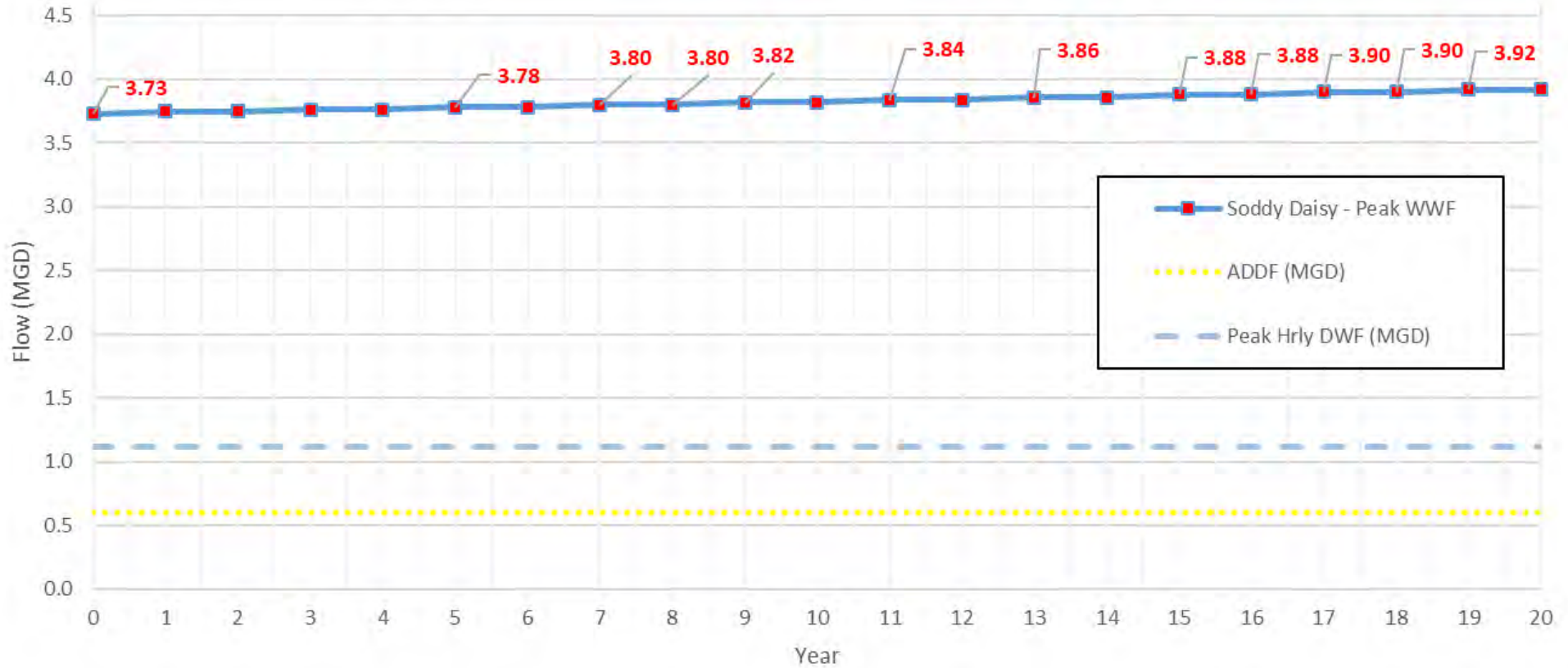
Flow projections are based upon temporary flow monitoring conducted between 2014-2015. Current and future Peak WWF is estimated based on 3-inch 24-hour storm event. These may be revised as more data becomes available and are not intended to represent guaranteed goals that will be reached under the Consent Decree, but to establish a base line estimate of anticipated flows. No credit for installed EQ Storage is shown.

Ooltewah Service Area Flows CD Timeline



Flow projections are based upon temporary flow monitoring conducted between 2014-2015. Current and future Peak WWF is estimated based on 3-inch 24-hour storm event. These may be revised as more data becomes available and are not intended to represent guaranteed goals that will be reached under the Consent Decree, but to establish a base line estimate of anticipated flows.

Soddy Daisy Service Area Flows CD Timeline



Flow projections are based upon temporary flow monitoring conducted between 2014-2015. Current and future Peak WWF is estimated based on 3-inch 24-hour storm event. These may be revised as more data becomes available and are not intended to represent guaranteed goals that will be reached under the Consent Decree, but to establish a base line estimate of anticipated flows.

APPENDIX D

Post-Pilot Study WWTP Performance Criteria

APPENDIX D

Post-Pilot Study WWTP Performance Criteria

WWTA shall be allowed a 90-day start up period after commencement of operation of the Filtration System before the Performance Criteria in this appendix shall become enforceable. During such start-up period, WWTA will be expected to make necessary adjustments to operation of the Filtration System so that it is capable of meeting these Performance Criteria. After such 90-day period, WWTA shall be in violation of the Post-Pilot Study Performance Criteria whenever effluent violations at the WWTP outfall fail to meet the following performance criteria and are attributable to the performance of the Filtration System.

Effluent Violations will be based on monitoring at permitted outfall compliance point. Any permit violations which do not meet these criteria are still potentially subject to enforcement as CWA and TWQCA violations.

1. End- of-Pipe Effluent Violations of Monthly Average Limits in NPDES Permit

(a) Acute End-of-Pipe Violations

(i) 40% (during the first 10 years of the Consent Decree Term) or 30% (during the second ten years of the Consent Decree Term) exceedance of NPDES Permit effluent limits for specific pollutants listed in Exhibit A, or a 20% exceedance of NPDES Permit effluent limits for specific pollutants from Exhibit B, for any two or more months during two consecutive quarters.

(b) Chronic End-of-Pipe Violations

(i) Violation of any NPDES Permit monthly effluent limit by 15% or more for any four or more months during two consecutive quarters.

2. End-of-Pipe Effluent Violations of Non-Monthly Average Limits in NPDES Permit

Acute and chronic Performance Criteria are the same for non-monthly average violations as for monthly average violations, as described in Sections a. and b. above. For example, if, during the first 10 years of the Consent Decree Term, a 40% exceedance of a weekly average or daily maximum violation occurs in two or more months during consecutive quarters for a pollutant on Exhibit A, that would violate the Performance Criteria. However, the following caveat also will apply to non-monthly average limits.

When a parameter has both a monthly average and a non-monthly average limit, the facility would only be in violation of Performance Criteria for the non-monthly limit if the monthly average is also violated to some degree (but not necessarily at the exceedance level in Sections 1 (a) and (b) above).

Appendix D: Post-Pilot Study WWTP Performance Criteria

*NOTE: Non-monthly average violation applies to all maximum and all average (other than monthly average) limits.

To facilitate evaluations of whether these Performance Criteria have been met, WWTa shall, upon EPA/TDEC request, allow EPA/TDEC to review all technical information relating to operation and performance of the WWTP, including the Filtration System. Accordingly, WWTa shall maintain for five years documentation of the WWTP and the Filtration System's operation and performance, including the various operational parameters and operating decisions, and make such records available to EPA/TDEC upon request.

WWTa must notify EPA/TDEC of any failure of the WWTP to meet these Performance Criteria within 7 days of the occurrence. Such notice shall include a report detailing the violation and its cause, and the steps taken by WWTa to remedy the cause. The first two occurrences of a violation of these Post-Pilot Study WWTP End-of pipe Performance Criteria shall trigger, in addition to the foregoing notice requirements, an obligation to correct conditions in the Filtration System believed to have caused such violations. After the third occurrence of a violation of these end-of-pipe Performance Criteria, WWTa shall be obligated to submit, upon demand by EPA/TDEC, a plan for eliminating bypasses at the Signal Mountain Plant that does not rely on continued use of the Filtration System, in accordance with Paragraph 28.b.(4) of the Consent Decree.

EXHIBIT A

Conventional Pollutants:

Group 1 Pollutants:

Biochemical Oxygen Demand (BOD ₅) Total Suspended Solids (TSS)
--

EXHIBIT B:

Toxic Pollutants:

Group 2 Pollutants:

Total Residual Chlorine E.coli

APPENDIX E

CMOM PROGRAMS

CMOM Programs

WWTA shall develop and implement the following Capacity, Management, Operation and Maintenance (CMOM) Programs in accordance with the requirements set forth in this Appendix E. All CMOM programs shall be developed in accordance with EPA Region 4 Guidance, as set forth in Exhibit 1 to this Appendix E. All references to “Consent Decree” in this Appendix refer to the Consent Decree to which this Appendix E is attached and incorporated.

a. Sewer Overflow Response Plan (“SORP”). WWTA currently has a SORP that it is implementing, which is attached as Exhibit 2 to this Appendix E. WWTA will continue to implement its existing SORP until it is replaced by an updated SORP (“Updated SORP”) that has been approved by EPA pursuant to the Consent Decree. Within seven (7) Months after the Effective Date of this Consent Decree, WWTA shall submit to EPA for review and approval an Updated SORP that establishes timely and effective methods and means of responding to, cleaning up, and/or minimizing the impact of SSOs and Prohibited Bypasses; timely reporting of the location, volume, cause, impact, and other pertinent SSO and Prohibited Bypass information to the appropriate regulatory agencies; and timely and effective notification of SSOs and Prohibited Bypasses to potentially impacted public. At minimum, the Updated SORP shall include and provide for the following:

(1) Within twenty-four (24) hours of the time WWTA first becomes aware of a SSO or Prohibited Bypass to waters of the United States or the State or of a SSO or Prohibited Bypass that could cause a threat to public drinking supplies or could constitute a threat to human health or the environment, WWTA shall provide in an oral report to TDEC the location of the SSO or Prohibited Bypass by

Appendix E: CMOM Programs

street address or any other appropriate method (i.e., latitude-longitude). The oral report shall be given to TDEC by calling (423) 634-5745.

(2) Within five (5) days of the time WWTa first becomes aware of a SSO or Prohibited Bypass to waters of the United States or the State or of a SSO or Prohibited Bypass that could cause a threat to public drinking supplies or could constitute a threat to human health or the environment, WWTa shall also provide a written report to TDEC for the SSO or Prohibited Bypass. WWTa shall maintain a copy of any written reports prepared pursuant to this Paragraph for a period of not less than five (5) years from the date of the SSO. The written report shall contain the following:

- (a) The location of the SSO or Prohibited Bypass by street address, or any other appropriate method (i.e., latitude-longitude);
- (b) The estimated date and time when the SSO or Prohibited Bypass began and stopped, or if it is still an active SSO or Prohibited Bypass, the anticipated time to stop the SSO or Prohibited Bypass;
- (c) The steps taken to respond to the SSO or Prohibited Bypass;
- (d) The name of the receiving water, if applicable;
- (e) An estimate of the volume (in gallons) of sewage spilled;
- (f) A description of the WCTS or WWTP component from which the SSO or Prohibited Bypass was released (such as manhole, crack in pipe, Pump Station wet well or constructed overflow pipe);

Appendix E: CMOM Programs

(g) Subject to available information, an estimate of the SSOs' or Prohibited Bypass's impact on public health and to water quality in the receiving water body;

(h) The cause or suspected cause of the SSO or Prohibited Bypass;

(i) The date of the last SSO or Prohibited Bypass at the same point;

(j) The steps taken or to be taken to reduce, prevent, or eliminate, reoccurrence of the SSO or Prohibited Bypass;

(k) A list of all notifications that WWTa has provided to the public and other agencies or departments; and

(l) The steps taken or to be taken to clean up any surfaces that have been in contact with and/or contaminated by the SSO or Prohibited Bypass.

(3) Procedures for documenting and reporting SSOs as required under paragraph a.(1) and (2) of this Appendix and in Quarterly Reports required to be submitted pursuant to Paragraph 33 of the Consent Decree based on demonstrable evidence that a SSO occurred, regardless of whether WWTa personnel directly witnessed the SSO occurring.

(4) WWTa shall maintain for all SSOs and Prohibited Bypasses for a period of not less than five (5) years from the date of the SSO or Prohibited Bypass all records documenting the steps that have been and will be taken to prevent the SSO or Prohibited Bypass from recurring, including work order records associated

Appendix E: CMOM Programs

with investigation and repair activities related to the SSO or Prohibited Bypass. WWTa shall also maintain for a period of not less than five (5) years from the date of the SSO or Prohibited Bypass a list and description of complaints from customers or others regarding the SSO or Prohibited Bypass.

(5) The Updated SORP shall provide procedures for responding to all SSOs and Prohibited Bypasses to minimize the environmental impact and potential human health risk of SSOs and Prohibited Bypasses. At a minimum, such response procedures shall include:

(a) A detailed description of the actions WWTa will undertake to immediately provide notice to the public (through the local news media or other means including signs or barricades to restrict access) of a SSO or Prohibited Bypass;

(b) A detailed description of the actions WWTa will undertake to provide notice to appropriate federal, state or local agencies/authorities;

(c) A detailed plan (including the development of response standard operating procedures) to minimize the volume of untreated wastewater transmitted to the portion of the WCTS or WWTP impacted by the events precipitating the SSO or Prohibited Bypass to minimize overflow volumes;

(d) A detailed description of WWTa's response to Building Backups, including the timeframe for responses and the measures to be taken to clean up Building Backups caused by conditions in WWTa's Sewer System. This description shall identify procedures necessary to disinfect

and/or remove items potentially contaminated by Building Backups, such as wet vacuuming or other removal of spillage, wiping floors and walls with cleaning solution and disinfectant, flushing out and disinfecting plumbing fixtures, carpet cleaning and/or replacement, and other appropriate measures to disinfect and/or remove items potentially contaminated by Building Backups. The description shall also identify follow-up procedures to ensure the adequacy of the cleanup;

(e) A detailed plan of the resources to be used to correct or repair the condition causing or contributing to the SSO or Prohibited Bypass;

(f) A detailed plan to ensure that WWTAs are prepared to respond to SSOs and Prohibited Bypasses, including response training of WWTAs' employees and personnel of other affected agencies necessary for the effective implementation of the Updated SORP;

(g) A detailed plan for establishing procedures and adequate training to response personnel for estimating SSO and Prohibited Bypass volumes;

(h) A list of those SSO locations within the area of the WCTS served by each Pump Station that have been recorded as overflowing more than once within the previous twelve (12) Month period and/or those locations at which a SSO is likely to occur first in the event of a Pump Station failure; and

(i) Pump Station emergency bypass/pump-around strategies and procedures.

Within thirty (30) days of EPA approval of the Updated SORP, WWTa will begin implementation of the updated SORP, which will replace WWTa's existing SORP.

b. Incident Response Plan ("IRP"). Within thirteen (13) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval an Incident Response Plan. The Plan shall address both routine incidents and catastrophic incidents. Routine incidents include such situations as overflowing manholes, line breaks, localized electrical failure, and pump station outages. Catastrophic incidents include floods, tornadoes, earthquakes, or other natural events; serious chemical spills; and widespread electrical failure. The Plan shall address areas of vulnerability and determine the effect of an incident-related failure to operations, equipment, and public safety and health based upon such factors as topography, weather, Sewer System size, and other site-specific factors. The Plan shall include standard forms. The Plan shall have the following components:

(1) The WWTP component of the Incident Response Plan shall establish standard operating procedures for use in responses to incidents, including changes in process controls.

(2) The WCTS component of the Incident Response Plan shall establish standard operating procedures for use in incident responses, including identification of the actions staff should take in the event of incidents (specific to the type of incident that could occur); criteria for initiating and ceasing responses to incidents; identification of appropriate repair equipment and sources thereof; and instructions on how to operate equipment and systems during

an incident when they are not functioning as intended but are not fully inoperable.

(3) In addition to the reporting requirements set forth in Section IX of the Consent Decree (Reporting Requirements), WWTa shall establish, in coordination with public health authorities:

(a) Criteria to be used as the basis for immediately notifying the public and other impacted entities, such as users with a downstream water intake, of an incident affecting the Sewer System, including the occurrence of a SSO, Prohibited Bypass, or effluent limit violation;

(b) A list identifying, by name and work phone number, all staff who are responsible for notifying the public;

(c) A list identifying, by name and work phone number, all public contacts, including local media outlets, who must be contacted during an incident;

(d) A list identifying staff, by name and phone number, who are authorized to make public statements during incidents; and

(e) Pre-scripted news releases for various types of incidents.

(4) In addition to the notification requirements set forth in the NPDES Permit, and the reporting requirements set forth in Section IX of the Consent Decree (Reporting Requirements), WWTa shall establish, in coordination with public health authorities:

(a) Criteria to be used as the basis for immediately notifying regulatory authorities, TDEC, and the Public Health Authorities of any

incident affecting the Sewer System, including the occurrence of a SSO, Prohibited Bypass, or effluent limit violation;

(b) A list identifying, by name and phone number, all staff who are responsible for notifying the regulatory authorities;

(c) A list identifying, by name and phone number, all officials who must be contacted; and

(d) Standard reporting forms.

c. Information Management System (“IMS”) Program. Within thirty-seven (37) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval an IMS Program, as more particularly described below. At a minimum, the IMS Program shall include the following:

(1) A management IMS component to provide WWTa’s managers with guidance and instruction to adequately evaluate operations, maintenance, customer service (including complaint tracking), and Sewer System rehabilitation activities so that overall Sewer System performance can be determined and utility planning can be conducted. This IMS component shall utilize management reports and standard management forms;

(2) An operations IMS component to provide WWTa’s managers and field supervisors with guidance to adequately track scheduled operational activities and to enhance operational performance. This IMS component shall utilize operating reports and standard operation forms for field personnel and shall provide for field supervisor review;

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(3) A maintenance IMS component to provide WWTa's managers and field supervisors with guidance to adequately track scheduled maintenance activities and to enhance maintenance performance. This IMS component shall utilize maintenance reports and standard maintenance forms used by field personnel. The system shall provide for field supervisor review;

(4) A description of what information will be fed into the system, how it will be entered, and by what means it will be recorded;

(5) A description of the management reports that will be generated from the input data (i.e., work reports), including examples and frequency for review of such reports;

(6) A description of the work reports that will be prepared and submitted, including examples and frequency for review of such reports;

(7) Standard forms that will be used by both field personnel and management for the Program, where applicable;

(8) A detailed description of how the records will be maintained;

(9) If computer software will be utilized, a description of the software to be used with cited references for software training and procedures for utilizing the software;

(10) Implementation of a Geographic Information Systems ("GIS") map of the entire WCTS within thirty-seven (37) Months after the Effective Date of this Consent Decree. Specifically, WWTa shall implement improvements to its current GIS as follows:

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(a) An updated GIS database to include all as-builts and Active As-built Supplemental Information System (“AAS IS”) forms, including new and corrected asset attribute data;

(b) Streamlining of the GIS data entry process for new assets, including electronic as-built data and necessary standards so that all new assets are added to the GIS system within ninety (90) calendar days of their activation in the field. WWTa shall also develop a system to interface with the Hydraulic Model to be developed pursuant to Paragraph d. below (Sewer System Hydraulic Model) so that the information can be efficiently exported to the Hydraulic Model;

(c) Simplification of the AAS IS process to facilitate wider usage;

(d) Development of a “flagging process” for damage investigators to note GIS inaccuracies;

(e) Provision for additional GIS training and refresher training;

(f) Use of online access to GIS maps to facilitate more widespread access to GIS resources to remote staff; and

(g) Determination via suitable as-built drawings, or GPS or traditional surveying field measurements, elevations of all manhole rims and sewer inverts at connections to manholes on Major Gravity Lines and at Pump Stations and inclusion of this data into GIS.

(11) Development and implementation of performance indicators to provide WWTa’s managers with guidance to adequately evaluate data collected in

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the IMS for use in determining the condition of the Sewer System and an evaluation of WWTAs' CMOM programs. Performance indicators shall include, without limitation, the linear footage of Gravity Sewer Line and Force Main inspections, the linear footage of Gravity Sewers cleaned, the number of manholes inspected, the number of manholes cleaned and maintained, the number of inverted siphons inspected, the number of inverted siphons cleaned and maintained, the number of SSOs per mile of Gravity Sewer, the number of SSOs per mile of Force Main, the number of SSOs per Pump Station, per capita wastewater flow, the number of Prohibited Bypasses, NPDES Permit effluent limitation compliance, and such other performance indicators as WWTAs may suggest and EPA approve.

(12) Maintenance activity tracked by type (corrective, preventative, and emergency).

d. Sewer System Hydraulic Model. WWTAs shall develop and maintain a calibrated Hydraulic Model of its Sewer System to establish existing hydraulic conditions and plan for future capacity needs of the Sewer System. The Model shall be developed on a Sewerbasin basis concurrent with the assessment of Groups 1 through 5 in accordance with Paragraph 23 of the Consent Decree. The Model development schedule, which shall include a schedule for Model development for any Sewerbasins not included in Groups 1 through 5, will be established based on system attribute data collected as part of the Sewer Mapping Program described in Paragraph e., below, and flow and rainfall data collected as part of the flow monitoring conducted pursuant to the SSER Work Plan, as required in Paragraph 22.c. of the Consent Decree.

(1) At a minimum, the Model shall be capable of:

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(a) Accurately predicting the flow rate and hydraulic grade line of wastewater in Force Mains from Major Pump Stations and the Major Gravity Sewer Lines under any historical dry or wet weather condition;

(b) Accurately predicting the location and severity of SSOs and Prohibited Bypasses under any historical dry or wet weather condition;

(c) Fully dynamic temporal analysis, including an accounting of downstream backwater impacts on upstream flows;

(d) Accurately predicting the impacts of changes to Pump Station capacities on upstream and downstream flow rates and hydraulic grade lines, including hydraulic losses which may result from either full or partial Pump Station failures; and

(e) Generating hydrographs depicting baseline wastewater flow and I/I for the Sewerbasins for various storm recurrence intervals. The Model shall include methods for accurately estimating the baseline wastewater flows and I/I components in each Sewerbasin using quality-controlled flow data obtained for the Sewer System.

(2) At a minimum, WWTa shall employ the Model to:

(a) Assist with the development and implementation of operation and maintenance procedures that optimize collection and transmission capacity;

(b) Evaluate the impacts that Infiltration/Inflow rehabilitation projects, proposed system modifications, and upgrades and expansions have

on collection and transmission capacity and the performance of the Sewer System;

(c) Prioritize the continuing evaluation of the WCTS pursuant to the SSER Work Plan required by Paragraph 21 of the Consent Decree;

(d) Prioritize rehabilitation projects; and

(e) Implement the Capacity Assurance Program described in Paragraph j. below.

(3) WWTa shall develop and employ written procedures, protocols, and schedules to routinely perform:

(a) Calibrations of the Model to account for age-related and other changes to Sewer System hydraulics, and to obtain and manage updated data from physical field observations and measurements for this purpose;

(b) Verification of the Model's accuracy and performance; and

(c) Sensitivity analyses to determine how the Model responds to changes in input parameters and variables.

(4) Within eighteen (18) Months after the completion of the assessment of each Group of Sewerbasins pursuant to Paragraph 22 of the Consent Decree, WWTa shall submit a report ("Model Report") for the relevant Group to EPA that:

(a) Identifies the functional attributes, characteristics, and limitations specific to the Model's software as compared to other products evaluated by WWTa, and explains how the Model meets the capabilities required in Paragraph d.(1) above;

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(b) Identifies the date that the Model was deemed to be calibrated and functional;

(c) Identifies all input and output parameters, constants, and assumed values used by the Model;

(d) Explains the bases for the input parameters used in each Sewerbasin to characterize baseline wastewater flows and I/I, the quality assurance procedures used in acquiring the input data, and the engineering bases for the selections of constants (e.g., friction factors) and assumed values; and

(e) Provides the schedules and a brief description of each procedure and protocol developed pursuant to Paragraph d.(3) above and lists that names and qualifications of the individual(s) who are employed to implement the procedures and protocols.

(5) Following receipt of the Model Report for each Group, EPA and TDEC may conduct compliance audits of the capabilities of the Model, the implementation of the Model, and the use of written procedures and protocols as required by this Paragraph d.

e. Sewer Mapping Program. Within thirty-six (36) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a Sewer Mapping Program to update its WCTS maps and update the capabilities and procedures for utilization of a future Geographic Information System (“GIS”) map of the WCTS. At minimum, the Sewer Mapping Program shall:

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- (1) Enable WWTAs to produce maps of the WCTS using GIS technology;
- (2) Be designed in such a manner so as to allow electronic integration with WWTAs' computer-based collection system model and computer-based operations and maintenance information management system;
- (3) Enable WWTAs to produce maps showing the location of all manholes, Gravity Sewer Lines, Pump Stations, Force Mains, valves, inverted siphons, and the WWTP;
- (4) Enable WWTAs to produce maps capable of integrating electronically the locations of sewer service connections on lines that are televised;
- (5) Enable WWTAs to produce maps that include attribute data for the WCTS including, but not limited to, size, material, estimated age or age range, slope, invert elevation, and rim elevation;
- (6) Enable WWTAs to produce maps that delineate the spatial boundaries of all Sewerbasins;
- (7) Enable WWTAs to produce maps that can integrate other electronically available maps that show the location of surface streets and street addresses, permitted FOG customers, surface water bodies, and political boundaries;
- (8) Enable WWTAs to produce maps in a manner that will allow use by all operation and maintenance crew leaders in the field;

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(9) Allow entry and mapping of work orders to identify and track problems geographically such as stoppages, service interruptions, SSOs, and Prohibited Bypasses, and to assist in the planning and scheduling of maintenance;

(10) Include written standard operating procedures for use of the Program, the acquisition and entry of updated mapping data for new assets or changes to existing assets, and updates to system software;

(11) Include locations of each permitted FOG establishment; and

(12) Include a schedule for the completion of the electronic mapping of each Sewerbasin in the WCTS.

f. Gravity Sewer System Operations and Maintenance Program. Within twenty-five (25) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a Gravity Sewer System Operations and Maintenance Program to eliminate SSOs and Prohibited Bypasses, particularly those caused by FOG, roots, and/or debris obstructions. At a minimum, the Gravity Sewer System Operations and Maintenance Program shall include the following:

(1) Written preventative operations and maintenance schedules and procedures that shall be scheduled appropriately and shall include, but not be limited to, written procedures for the following:

(a) Inspection and maintenance of all Gravity Sewers, manholes, and inverted siphons;

(b) Identifying and documenting Gravity Sewer, manhole, and inverted siphon conditions, including grease, roots, and/or debris accumulation;

- (c) Identifying maintenance needs; and
- (d) Scheduling preventative maintenance work/cleaning, which WWTa may schedule in connection with the SSER Work Plan as described in Paragraph 21 of the Consent Decree.

(2) An engineering evaluation of potential sulfide and corrosion control options and a summary report of findings, including a recommendation of the preferred sulfide and corrosion control method(s) and a schedule for implementation of selected measures, where applicable; provided, however, that such corrosion control options and methods shall not apply to components made of plastic or other similar materials.

(3) Prioritization for evaluating the Gravity Sewers based upon the size of the pipe (e.g., starting with the larger pipes and working back to smaller pipes), location of SSOs and Prohibited Bypasses, community input, and other criteria WWTa finds appropriate.

(4) Inspection of Gravity Sewers, manholes, and inverted siphon easements, including inspection of creek crossings, canal crossings, stream bank encroachment toward Gravity Sewers, manholes, and inverted siphons. Inspections shall also examine the accessibility of easements, including the effect of vegetative growth, encroachment of man-made structures, and activities that could threaten the integrity of the affected Gravity Sewer, manhole, or inverted siphon. Inspections shall include written reports, and, where appropriate, representative photographs or videos of appurtenances being inspected (Gravity Sewers, manholes, inverted siphons, creek crossings, canal crossings, etc.). Inspectors shall

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promptly report any observed SSOs to their area supervisors and shall record any evidence of SSOs which may have occurred since the last inspection. Any observed SSO shall be promptly reported in accordance with the SORP.

(5) A schedule for the maintenance of easements.

(6) A staffing and funding plan sufficient in structure, personnel skills, personnel numbers and funding to allow completion of the operation and maintenance activities required by this Paragraph f.

(7) Data attributes for the mapping program allowing program data to be compared in the IMS against other pertinent data such as the occurrence of SSOs and Prohibited Bypasses, including repeat SSO and Prohibited Bypass locations and permit violations.

(8) An inventory management system that includes:

(a) A list of critical equipment and critical spare parts;

(b) An inventory of critical equipment and critical spare parts stored at WWTAs facilities, and a list of where critical spare parts and critical equipment may be secured to allow repairs in a reasonable amount of time for those spare parts and critical equipment that are not stored by WWTAs, including spare pipe having a diameter of 24 inches or greater; and

(c) Written procedures for updating the critical spare parts and equipment inventories in the IMS.

(9) Reports listing equipment problems and the status of work orders generated during the prior Month.

g. Corrosion Control Program. Within twenty-five (25) Months after the Effective Date of this Consent Decree, WWTa shall develop and submit to EPA for review and approval a Corrosion Control Program. The Corrosion Control Program shall include a schedule providing for full implementation within twelve (12) Months of EPA approval. The Corrosion Control Program shall include provisions for inspecting the sewerage infrastructure for corrosion caused by hydrogen sulfide or other corrosives; the development and implementation of site-specific corrosion control measures; application of corrosion control measures where needed; a monitoring program to evaluate corrosion control programs and performance measures; and an information management system.

h. Pump Station Operations and Preventative Maintenance Program. Within twenty-five (25) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a Pump Station Operations and Preventative Maintenance Program to facilitate proper operation and maintenance activities for Pump Stations within the WCTS. At a minimum, the Pump Station Operations and Preventative Maintenance Program shall include the following:

- (1) Identification of the means and modes of communication between Pump Stations, field crews, and supervising staff.
- (2) Technical specifications of each Pump Station within the WCTS.
- (3) A description of each Pump Station monitoring system, which shall continuously monitor, report, and transmit information for each Pump Station.
- (4) Written preventative operations and maintenance schedules and procedures, which shall be scheduled appropriately and shall include, but not be limited to, written procedures for periodic service and calibration of

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instrumentation such as flow meters, liquid level sensors, alarm systems, elapsed time meters, and remote monitoring equipment. Such written preventative operations and maintenance schedules and procedures shall also include predictive (including non-physical) inspections and/or physical inspection and service for all Pump Stations including, but not limited to:

- (a) Reading, recording, and maintaining records of information from the elapsed time meters and pump start counters;
- (b) Observing and documenting wet well conditions, including grease and/or debris accumulation;
- (c) Checking and re-setting, as necessary to improve system performance, wet well pumping points (e.g., floats);
- (d) Checking, recording, and maintaining records of system pressure(s);
- (e) Checking SCADA and/or alarm components;
- (f) Checking stand-by power sources;
- (g) Checking motor electrical systems, including, but not limited to, line voltage on each leg quarterly, current draw on each leg quarterly, and resistance of windings on each leg quarterly; and
- (h) Identifying maintenance needs.

(5) Written standard emergency/reactive operations and maintenance procedures that may include the use of portable pumps, portable generators, or alternative power sources as it deems appropriate. At a minimum, the standard emergency/reactive Pump Station operating procedures shall include:

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- (a) Criteria used to determine the need for emergency operations and maintenance;
 - (b) Initiation/use of stand-by power (e.g., portable generators), where applicable;
 - (c) Initiation/use of portable pumps (e.g., bypass/pump-around operations), where applicable;
 - (d) Evaluation of the need for additional equipment for emergency/reactive operations, including, but not limited to, additional portable generators and/or additional portable pumps (for pump-around operations);
 - (e) Evaluation of the need for on-site standby power (e.g., on-site generator and/or second electrical feed from the power grid) for each Pump Station should WWTa choose not to have a portable pump available for the Pump Station; and
 - (f) Establishing standard forms, reporting procedures, and performance measures for emergency/reactive operations and maintenance.
- (6) An inventory management system that includes:
- (a) A list of critical equipment and critical spare parts;
 - (b) An inventory of critical equipment and critical spare parts stored at WWTa's facilities, and a list of where critical spare parts and critical equipment may be secured to allow repairs in a reasonable amount of time for those spare parts and critical equipment that are not stored by WWTa; and

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(c) Written procedures for updating the critical spare parts and equipment inventories in the IMS.

(7) Reports listing equipment problems and the status of work orders generated during the prior Month.

(8) A staffing and funding plan sufficient in structure, personnel skills, personnel numbers, and funding to allow completion of the operations and maintenance activities required by this Paragraph h.

i. Fats, Oils and Grease (“FOG”) Control Program. Within thirty-one (31) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a FOG Control Program. At a minimum, the FOG Control Program shall include the following:

(1) A FOG characterization study that shall identify the sources of FOG causing problems in the WCTS and the most appropriate method or mechanism for addressing those sources.

(2) The legal authority to control the discharge of FOG into the WCTS, including the ability to implement a permit and enforcement program for commercial and industrial sources.

(3) Specification of accepted devices to control the discharge of FOG into the WCTS.

(4) Establishment of enforceable standards for the design and construction of FOG control devices, including standards for capacity and accessibility, site maps, design documents, and as-built drawings.

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(5) Establishment of enforceable FOG control device management, operations and maintenance standards, or best management practices, that address onsite record keeping requirements, cleaning frequency, cleaning standards, use of additives, and ultimate disposal.

(6) Establishment of protocols for WWTAs to conduct construction inspections, including scheduling, inspection report forms, and inspection recordkeeping requirements, to assure that FOG control devices are constructed in accordance with established design and construction standards.

(7) Establishment of protocols for WWTAs to conduct compliance inspections, including scheduling, inspection report forms, and inspection record keeping requirements to assure that FOG control devices are being managed, operated, and maintained in accordance with the established management, operation, and maintenance standards or best management practices.

(8) Establishment of an enforceable FOG disposal manifest system, including the requirement that FOG and septage not be commingled and that the point of origin be specified on the manifest.

(9) Establishment of an enforcement program, including specific enforcement mechanisms, to ensure compliance with the FOG Control Program.

(10) Establishment of a compliance assistance program to facilitate training of FOG generators and their employees.

(11) Establishment of a comprehensive public education program directed at reducing the amount of FOG entering the WCTS from residences.

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(12) Establishment of staffing (technical and legal) and equipment requirements to ensure effective implementation of the FOG Control Program.

(13) A regularly maintained list of current commercial establishment FOG generators, including a description of their FOG generating processes and estimated average quantity of FOG generated daily.

(14) Establishment of performance indicators to be used by WWTa to measure the effectiveness of the FOG Control Program.

(15) A schedule to review, evaluate, and revise the FOG Control Program on at least an annual basis. Any revisions to the FOG Control Program shall be submitted to EPA in accordance with Section VI of the Consent Decree (Review and Certification of Deliverables, Documents, Notices, and Reports).

Upon EPA's approval of the FOG Control Program, WWTa shall immediately implement all components of the Program that do not require the enactment of new rules; such components shall be incorporated into, and become enforceable under, this Consent Decree upon EPA's approval of the Program. If any components of the Program depend on the enactment of new rules, WWTa shall enact such rules within twelve (12) Months of EPA's approval of the Program and shall then implement those components of the Program immediately after such rules become effective. Components of the FOG Control Program that depend on the enactment of new rules shall be incorporated into, and become enforceable under, this Consent Decree after such rules become effective. Such rules shall become effective no later than six (6) Months after the date of their enactment.

j. Capacity Assurance Program. Within forty-nine (49) months after the Effective Date, WWTa shall submit to EPA for review and approval a Capacity Assurance

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Program (“CAP”), including a schedule providing for full implementation of the CAP no later than twelve (12) Months after EPA approval of the CAP. Pursuant to the capacity assessment performed in accordance with Paragraphs 21 and 22 of the Consent Decree, the CAP shall identify each Sewerbasin with insufficient capacity under peak wet weather, average conditions, or both. It shall also analyze all portions of the WCTS that hydraulically impact all known SSOs and/or Prohibited Bypasses and all components of a WWTP that may contribute to violations of the NPDES Permit. The CAP shall assess peak flow capacity of all Pump Stations, all Major Sewer Gravity Lines, all Force Mains and siphons and their respective related appurtenances, all known SSO and Prohibited Bypass locations, and any other portions of the WCTS that must be assessed so as to allow a technically sound evaluation of the causes of SSOs and Prohibited Bypasses for existing and proposed flows. The CAP shall enable WWTa to authorize new sewer service connections, or increases in flow from existing sewer service connections, only after it certifies that the analysis procedures contained in the approved CAP have been used and that it has determined, based on those procedures, that there is Adequate Treatment Capacity, Adequate Transmission Capacity, and Adequate Collection Capacity, as set forth below. The Capacity Assurance Program shall include, at a minimum, the following:

- (1) The technical information, methodology, and analytical techniques, including the model or software, to be used by WWTa to calculate collection, transmission, and treatment capacity.
- (2) The means by which WWTa will integrate its certification of Adequate Treatment Capacity, Adequate Transmission Capacity, and Adequate

Collection Capacity with the issuance of building permits and WWTAs's acquisition of new or existing sewers from other owners.

(3) The means by which WWTAs will integrate its certification of Adequate Treatment Capacity, Adequate Transmission Capacity, and Adequate Collection Capacity with the regulatory or permit requirements of Tennessee that apply to WWTAs regarding the certification of capacity for the construction of new sewer lines that provide new flow into the Sewer System.

(4) The technical information, methodology, and analytical techniques, including the model or software, that WWTAs will use to calculate the net (cumulative) increase or decrease in volume of wastewater introduced to the Sewer System as a result of the authorization of new sewer service connections, increases in flow from existing connections, and the completion of: (1) specific projects that add or restore collection or transmission capacity to the WCTS or add or restore treatment capacity at a WWTP ("Capacity Enhancing Projects"); (2) specific projects that reduce peak flow through removal of I/I ("I/I Projects"); and (3) permanent removal of sewer connections ("Removal of Connections").

(5) An Information Management System capable of tracking the accumulation of banked credits, earned pursuant to Paragraph j.(9) below, from completion of Capacity Enhancing Projects, I/I Projects, and Removal of Connections; the capacity-limited portion of the Sewerbasin in which those credits were earned; and the expenditure of such credits on future increases in flow from new or existing sewer service connections in that capacity-limited portion of the Sewerbasin.

(6) All evaluation protocols to be used to calculate collection, transmission, and treatment capacity including, but not limited to, standard design flow rate rules of thumb regarding pipe roughness, manhole head losses, as-built drawing accuracy (distance and slope), water use (gallons per capita per day), projected flow impact calculation techniques, and metering of related existing peak flows (flows metered in support of analysis and/or manual observation of existing peak flows). WWTAs may identify sewer line segments that have been specifically designed and constructed to operate under surcharge conditions (e.g., with welded or bolted joints) and identify the level of surcharge for those segments.

(7) Capacity Certifications. Except as provided in j.(8) through j.(11) below, twelve (12) Months after EPA's approval of the CAP, new sewer service connections, or additional flow from an existing sewer service connection, shall be authorized only after WWTAs certify that the analysis procedures contained in the approved CAP have been used and that WWTAs have determined, based on those procedures, that there is Adequate Treatment Capacity, Adequate Transmission Capacity, and Adequate Collection Capacity, as defined below:

(a) Treatment Capacity Certifications. WWTAs' certification of "Adequate Treatment Capacity" shall confirm that, at the time the WWTP receives the flow from a proposed sewer service connection(s) or increased flow from an existing sewer service connection(s), when combined with the flow predicted to occur from all other authorized sewer service connections (including those that have not begun to discharge into the WCTS), the WWTP will not be in "non-compliance" for quarterly reporting as defined in

40 C.F.R. Part 123.45, Appendix A. In addition, WWTAs' certification of "Adequate Treatment Capacity" shall confirm that the new or increased flow to the WWTP will not result in a Prohibited Bypass.

(b) Transmission Capacity Certifications. WWTAs' certification of "Adequate Transmission Capacity" shall confirm that each Pump Station, through which the proposed additional flow from new or existing sewer service connections would pass to the WWTP receiving such flow, has the capacity to transmit, with its largest pump out of service, the existing one (1) hour peak flow passing through the Pump Station, plus the addition to the existing one (1) hour peak flow predicted to occur from the proposed connection, plus the addition to the existing one (1) hour peak flow predicted to occur from all other authorized sewer service connections that have not begun to discharge into the WCTS.

(c) Collection Capacity Certifications. WWTAs' certification of "Adequate Collection Capacity" shall confirm that each Major Gravity Line, through which the proposed additional flow from new or existing connections would pass, has the capacity to carry the existing one (1) hour peak flow passing through the Major Gravity Line, plus the addition to the existing one (1) hour peak flow from the proposed connection, plus the addition to the existing one (1) hour peak flow predicted to occur from all other authorized sewer service connections that have not begun to discharge into the WCTS without causing a Surge Condition.

(d) Definition of “One (1) Hour Peak Flow” and “Surcharge Condition.” The terms set forth below are defined herein only for purposes of implementation of the CAP; these terms do not establish any design criteria for the implementation of rehabilitation measures to the Sewer System. The term “one (1) hour peak flow” shall mean the greatest flow in a sewer averaged over a sixty (60) minute period at a specific location that is expected to occur as a result of a representative two-year, 24-hour storm event. The term “Surcharge Condition” shall mean the condition that exists when the supply of wastewater resulting from the one (1) hour peak flow is greater than the capacity of the pipes to carry it and the surface of the wastewater in manholes rises to an elevation greater than twenty-four (24) inches above the top of the pipe or within three (3) feet of the rim of the manhole, and the sewer is under pressure or head, rather than at atmospheric pressure; unless WWTa has, pursuant to Paragraph j(6) above, identified that pipe segment and manhole as designed to operate in that condition, in which case the identified level of surcharge will be used.

(8) Minor Sewer Connections. For minor sewer service connections, WWTa may elect to perform a monthly capacity analysis for each Sewerbasin by certifying that the Sewerbasin has adequate capacity, as defined above, to carry existing peak flows and the additional flows generated by all such minor sewer service connections projected to be approved in the subsequent month. For any Sewerbasin that can be so certified, WWTa may approve these projected minor sewer service connections without performing individual certifications for each

connection. For the purposes of this Paragraph j.(8) only, a “minor sewer service connection” is a connection with an average flow not to exceed 2500 gallons per day.

(9) Capacity for Treatment, Transmission, and Collection in Lieu of Certification. A new sewer service connection, or additional flow from an existing sewer service connection, may be authorized even if WWTa cannot satisfy the requirements of j.(7) above, provided that WWTa certifies that all of the following provisions, where applicable, are satisfied:

(a) WWTa is in substantial compliance with this Consent Decree;

(b) The sewer lines that will convey the proposed additional flow from new or existing sewer service connections have not experienced dry weather SSOs due to inadequate capacity within the previous twelve (12) Months; or, in the alternative, the causes of any dry weather SSOs due to inadequate capacity have been eliminated;

(c) WWTa has identified the sewer line segment(s), Pump Station(s) and/or wastewater treatment systems that do not meet the conditions for certification of Adequate Treatment Capacity, Adequate Collection Capacity, and/or Adequate Transmission Capacity;

(d) WWTa has completed, prior to the time the proposed additional flow from new or existing sewer service connections is introduced into the WCTS, specific Capacity Enhancing Projects, I/I Projects, and/or Removal of Connections that will add sewer capacity or reduce peak flows

to the identified sewer line segment(s), Pump Station(s), and wastewater treatment system(s) in accordance with the factors set forth in Paragraphs j.(9)(e) and j.(9)(f) below;

(e) Where WWTa has undertaken specific Capacity Enhancing Projects that provide for additional off-line storage or additional treatment capacity, and/or specific Removal of Connections to satisfy the requirements of Paragraph j.(9)(d) above, the estimated added capacity resulting from such projects is equal to or greater than the estimated amount of any proposed additional flow;

(f) Where WWTa has undertaken specific I/I Projects or Capacity Enhancing Projects, other than those that provide for additional off-line storage or additional treatment capacity, to satisfy the requirements of Paragraph j.(9)(d) above, the estimated reduction in peak flows or added capacity resulting from such projects exceeds the estimated amount of any proposed additional flow by a factor of 3:1;

(g) Commencing within twelve (12) Months of EPA's approval of the CAP and annually thereafter, WWTa has performed a review of specific Capacity Enhancing Projects and I/I Projects undertaken to determine if actual added capacity and peak flow reductions are in line with what WWTa originally estimated for such projects; and WWTa has used the results of this review to adjust future estimates as necessary;

(h) Any new sewer service connection or increase in flow to an existing connection authorized prior to the completion of a necessary added

capacity or peak flow reduction project as set forth above shall be conditioned upon completion of such project prior to the time that the new sewer service connection or flow increase is introduced into the WCTS; and

(i) In implementing the provisions of this Paragraph j.(9), WWTa may use a “banking credit system” for the sewer line segment(s), Pump Station(s), and/or wastewater treatment systems for which WWTa is not able to satisfy the conditions set forth in Paragraph j.(7) above.

(10) Essential Services. Notwithstanding the above provisions, a new sewer service connection, or additional flow from an existing sewer service connection, may be authorized even if WWTa cannot certify that it has Adequate Transmission Capacity, Adequate Collection Capacity, and/or Adequate Treatment Capacity, as defined above, for health care facilities, public safety facilities, and public schools and, subject to EPA review and approval, for other government facilities and those cases where a pollution or sanitary nuisance condition exists, as determined by the local county health department or its regulatory successor, as the result of a discharge of untreated wastewater from an on-site septic tank.

(11) Existing Illicit Connections. Notwithstanding the provisions above, a new sewer service connection, or additional flow from an existing sewer service connection, may be authorized even if WWTa cannot certify that it has Adequate Transmission Capacity, Adequate Collection Capacity, and/or Adequate Treatment Capacity, as defined above, for any illicit connections or discharge of wastewater to the stormwater system or to waters of the State. For purposes of this Paragraph j.(11), the term “illicit connection” shall mean any connection resulting in a

discharge to the municipal separate storm sewer system (“MS4”) that is not composed entirely of stormwater, except for discharges allowed under a NPDES permit or waters used for firefighting operations.

(12) Certifications. All certifications pursuant to this Paragraph j. shall be made by a professional engineer registered in the State of Tennessee and shall be approved by a responsible party of WWTa as defined by 40 C.F.R. § 122.22(b). WWTa shall maintain all such certifications, and all data on which the certifications are based, in its offices for inspection by EPA and TDEC. EPA and TDEC may request, and WWTa shall provide, any and all documentation necessary to support any certification made by WWTa pursuant to this Paragraph j., and make available, to the extent possible, individuals providing such certifications to meet with EPA and TDEC.

k. Financing and Cost Analysis Program. Within nineteen (19) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a Financing and Cost Analysis Program. The Financing and Cost Analysis Program shall include, at a minimum, the following:

(1) A process (including a schedule of implementation) that regularly analyzes, projects, plans, and finances management, operating, and maintenance costs of its Sewer System, including costs associated with labor and equipment needed to properly implement the CMOM programs required pursuant to this Consent Decree.

(2) A process, including a schedule of implementation that regularly analyzes, projects, plans, and finances capital improvements to its Sewer System,

including those capital improvements required pursuant to this Consent Decree. Capital improvement financing shall be planned using, at a minimum, a five (5)-year planning horizon followed by annual updates.

(3) A process, including a schedule of implementation, to ensure that life cycle cost analysis is incorporated into its operations cost analyses, maintenance cost analyses, and management cost analyses for all Sewer System equipment and infrastructure.

(4) A process, including a schedule of implementation, to establish its annual budget and set customer rates that assures that the budget and rates are based on the programs referenced in Paragraph k.(1) through k.(3) above.

l. Legal Support Program. Within thirty-one (31) Months after the Effective Date of this Consent Decree, WWTa shall submit to EPA for review and approval a Legal Support Program. At minimum, the Legal Support Program shall include the following:

(1) Rules and Regulations Program. WWTa has determined, after thorough analysis and documentation, and has represented to Plaintiffs (1) that it has the legal authority to take all actions necessary to implement this Consent Decree; (2) that it has properly exercised that legal authority by providing, among other things, fair notice to the public of the creation of all rules and regulations that are necessary to implement this Consent Decree; (3) that it has in place a legal process that allows it to enforce all such rules and regulations; and (4) that it is in fact enforcing all such rules and regulations, as necessary to implement this Consent Decree. If it becomes apparent to WWTa, after the Effective Date of this Consent Decree, that it lacks the appropriate authority to enforce its rules and regulations,

WWTA shall, as promptly as possible, take all legal and available actions to correct that deficiency. If it becomes apparent to WWTA, after the Effective Date of this Consent Decree, that it has improperly exercised its authority to establish a rule or regulation that is necessary to implement this Decree, or lacks a process sufficient to enforce a rule or regulation that is necessary to implement this Decree, WWTA shall, as promptly as possible, take all legal and available actions to correct that deficiency. Within thirty (30) Days after discovery of any deficiency, WWTA shall notify the Plaintiffs of the deficiency and its intended plan for correction of that deficiency. Upon correction of the deficiency, WWTA shall represent to Plaintiffs that it has, in fact, corrected the deficiency.

(2) FOG Control Legal Support Program. WWTA shall prepare an enforcement response guide to address violations of the FOG Control Program set forth in Paragraph i. above and other applicable rules and regulations. The guide, in conjunction with the rules and regulations, shall include an array of tools available to WWTA in the enforcement of the FOG Control Program and applicable rules and regulations. The guide and/or rules and regulations shall identify the process a customer must follow to request a waiver of any of the obligations imposed by the FOG Control Program and the other applicable rules and regulations, and the process WWTA will use to consider granting and revoking such waivers. WWTA shall maintain records of all decisions to grant or revoke such waivers, and the basis for each such decision. The guide shall set forth a series of graduated enforcement responses for violations of the FOG Control Program and of other applicable rules and regulations, such as:

Appendix E: CMOM Programs

- (a) Unauthorized grease discharges to the WCTS;
- (b) Unauthorized modifications to an approved grease interceptor or trap;
- (c) Failure to properly operate and maintain an approved grease interceptor or trap;
- (d) Failure to follow standard operating procedures;
- (e) Failure to maintain adequate manifest documentation or to use permitted haulers; and
- (f) Failure to timely pay administrative fees.

The guide and/or the rules and regulations shall describe the notice WWTa provides to customers who are found to be in violation and the process a customer must follow in order to challenge the issuance of a penalty or termination of services.

(3) Private Lateral Legal Support Program. Upon the Effective Date, WWTa shall continue the implementation of its current Private Sewer Lateral Program (“PSLP”) program for all WWTa customers, which provides for WWTa-financed repair of private sewer laterals when the customer notifies WWTa of laterals that need to be repaired or when WWTa discovers laterals that require repair. The program is financed by a monthly charge that is included on residential sewer bills of eight dollars per month, which may be adjusted upward or downward in the future depending on the status of the WWTa PSLP budget. WWTa reserves the right to change the PSLP, so long as the program meets the effectiveness criteria below.

Appendix E: CMOM Programs

The existing PSLP and any modified PSLP WWTAs may adopt will address Private Laterals that may contain defects and/or improper connections that:

- (a) Are potential sources of I/I to the WCTS that may cause or contribute to SSOs, Prohibited Bypasses, or other violations of the NPDES Permit;
- (b) Allow for the possible exfiltration of wastewater onto or below the surface of the ground that could then enter the stormwater system; or
- (c) Allow roots and/or debris to enter the WCTS through cracks, holes, or poorly sealed joints, thus restricting flow and increasing the likelihood of SSOs and/or Prohibited Bypasses.

The current and any modified PSLP, in conjunction with WWTAs' Rules, must include an array of tools available to WWTAs to require customers to repair or replace Private Laterals having such defects and/or improper connections, and a process for systematically evaluating and fixing Private Laterals identified as having such defects and/or improper connections after obtaining permission from the owner of property where the Private Lateral is located to access the owner's property.

Within six months of the Effective Date, WWTAs shall formalize and amend its PSLP program to add a series of graduated enforcement responses, including termination of services, that will be employed when necessary to i) require a customer to authorize the evaluation of private laterals by WWTAs, ii) require a customer to authorize the repair or replacement of private laterals determined by WWTAs to require repair or replacement, and/or, iii) require a customer to repair or replace private laterals if so required by the PSLP at the time. The enforcement procedures WWTAs adopt shall describe (i) the notice WWTAs provides to customers that WWTAs will be evaluating private laterals, (ii) the

Appendix E: CMOM Programs

notice WWTa provides to customers after determining that repair or replacement of identified Private Laterals is required, and the circumstances by which WWTa will determine whether WWTa will repair the laterals, require the customer to do so or whether the repair will involve a combination of both WWTa work and that of the customer. Any revision to the PSLP shall ensure that Private Laterals are repaired or replaced within a reasonable time frame.

Exhibit 1 to APPENDIX E

EPA Region 4 Guide to Collection and Transmission System Management, Operation,
and Maintenance Programs

EPA Region 4 Guide to Collection and Transmission System Management, Operation, and Maintenance Programs

Version 1.0



PURPOSE & DISCLAIMER

This document is the work product of the EPA Region 4, Water Management Division, Water Programs Enforcement Branch (WPEB) and supercedes a draft document, "Comprehensive List of Programs for Sewer and Treatment Systems," previously released. This document serves as an introduction for new Region 4 inspectors in the WPEB Municipal Infrastructure Enforcement Program and as descriptive information for utilities conducting self-assessments in the Region 4 Management, Operation, and Maintenance (MOM) Programs Project.

The MOM Programs Project is conducted in compliance with EPA Policy, EPA Guidance, and Rules and Regulations promulgated under the Clean Water Act. If some statement or part of the document is not in compliance with the Act, EPA Policy, EPA Guidance or the Rules and Regulations, then it should not be construed as conveying rights not conveyed by the Clean Water Act, EPA Policy, or the Rules and Regulations.

September 2003

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INTRODUCTION

A utility should develop an appropriate, comprehensive Management, Operation and Maintenance (MOM) Program for the sewerage infrastructure (sewer system and wastewater treatment plant) which it owns and operates. A comprehensive MOM Program is comprised of individual management, operation, and maintenance programs, each of which:

- is specific to, and tailored for, the utility's infrastructure;
- has a written purpose explaining why the program is needed;
- has specific written goal(s) establishing the accomplishment(s) desired for the current fiscal year;
- has the details of the activities and procedures that are followed to implement the program written down in the form of Standard Management Procedures (SP), Standard Operating Procedures (SOP), and/or Standard Maintenance Procedures (SMP) that are used by the utility's personnel;
- is implemented by well-trained personnel;
- has established appropriate performance measures which are tracked by management; and,
- has a written procedure requiring periodic review, evaluation, and any necessary revision.

An important concept is that MOM programs are utility-specific. Most, if not all, of the programs described in this guide are based on actual programs observed at proactive utilities. However, utilities may have different titles for the various MOM programs described in this guide and may have them organized very differently. Some utilities may be organized in a way that they consolidate some of the MOM programs described in this guide, or they may exclude part of a program described in this guide because of justifiable circumstances. Utilities may also have additional MOM programs that are not contained in this guide.

Tailored to the Utility

The utility should have programs tailored to match its geographic, physical, and climatic conditions; level of complexity; infrastructure configuration; and level of sophistication. Utilities may

also have a number of the their MOM programs implemented through a managed contract rather than by their own trained personnel.

Program Purpose

The purpose of a given MOM program is the reason why the program is needed and why it exists.

Example: The purpose our utility's smoke testing program is to identify sources of inflow our sewer system that need to be eliminated so that we can regain some of our peak flow capacity.

Program Goal

The individual program goal(s) establishes the accomplishments desired for the given MOM program during the upcoming fiscal year.

Example: The goal our smoke testing program for this fiscal year is to reclaim system peak capacity, and to reduce treatment plant hydraulic loading by identifying sources of inflow to the system by conducting investigations in the ABC and DEF sewersheds. This goal will be accomplished in a cost-effective manner using our personnel and by using a contractor.

Program Documentation

The program documentation specifies, in writing, the specific details of the activities and procedures that personnel follow to implement the program. Program documentation should be maintained in a central location and made available to all personnel.

Example: Our utility has a long-term, ongoing, smoke testing program. The program priorities and standard operating procedures are contained in a manual entitled "Smoke Testing Program for Utility X."

Implemented by Trained Personnel

Training programs are established and followed to ensure that utility personnel are well-trained to implement each program and successfully achieve each program's goals.

Example: All personnel assigned to our smoke testing activity receive three hours of basic training followed by eighty (80) hours of on-the-job training to assure competency. Our contract with outside sources to conduct smoke testing requires the contractor to follow our standard operating procedures.

Performance Measures

Appropriate performance measures should be established for each program and reviewed at minimum on an annual basis.

Example: During this fiscal year, the performance goal is to smoke test 200,000 lineal feet of gravity sewer in two sewersheds selected according to our priority procedures. Last year, we exceeded our performance goal of 178,000 lineal feet of gravity sewer by smoke testing 193,000 lineal feet. As a result, 623 defects were identified and passed on to our rehabilitation and private service lateral programs for correction.

Periodic Evaluation

An evaluation by utility management should occur for each program, annually at minimum, to evaluate how well a program accomplished the program goals established at the beginning of the period and to determine whether the program, as presently implemented, is using the most efficient approach. Remedies should be identified and scheduled to correct any deficiencies. Questions the evaluation should answer are:

- Are there program design, resource or implementation deficiencies that keep the program from achieving its performance measures?
- Are these program deficiencies leading to sanitary sewer overflows, permit violations or other Clean Water Act violations?
- Are there program deficiencies leading to decreased customer service and/or unwarranted deterioration of utility assets?
- Are there changes that should be made to the program that will make its implementation more efficient, thereby conserving resources for better implementation of other programs?

Example: The smoke testing program has yielded good results during the past four years. Following our priority criteria, most of the significant inflow problems have been eliminated. Next year the program will be reduced by 25% and the resources applied to our maintenance of way program. Peak flows will be monitored at key locations to determine if this reduction in the smoke testing program will need to be reversed in the future. Additionally, we are conducting a cost analysis to determine whether we should contract out for all smoke testing work in the future.

SYSTEM PROFILE AND PERFORMANCE SUMMARY

A proactive utility will maintain a profile of its system as a basis for explaining its situation to regulatory agencies, the public, and when networking with other utilities. A profile typically contains basic population and inventory information as well as a recent system performance summary. An example of a system performance summary is provided on the following page.

Population Served: _____

Number of Customers: _____

Number of Treatment Plants: _____

Total Wastewater Design Treatment Capacity: _____

Total Volume of Wastewater Treated: _____

Miles of Gravity Sewers: _____

Number of Manholes: _____

Number of Inverted Siphons: _____

Number of Pump Stations: _____

Miles of Force Main: _____

Number of Employees: _____

Annual Capital Improvement Budget: _____

Annual Operation and Maintenance Budget: ... _____

Total Annual Operating Budget: _____

MANAGEMENT PROGRAMS

1. Organization

a. Organizational Chart

An organizational chart clearly depicts all units in the organization, the lines of authority between the various organization units, a description of the functions of each of the organization units, the title and duties of each position in the organization units and an indication of whether or not each position is currently budgeted and filled.

b. Relation to Other Municipal Functions

An organizational chart clearly depicts the relationship of the sewerage utility to other municipal functions such as public works, streets and drainage, building inspection, building permits, and public health. There is a mechanism for updating the chart in manner timely to changes which may occur in the organization.

2. Training

a. Technical Training Program

This program specifies requirements (curriculum) for initial and refresher training to ensure each employee has a level of knowledge, commensurate with duties, of the overall functions of the utility's infrastructure. This program also includes outside technical training and networking opportunities, such as conferences and seminars, that are made available to employees.

The program includes the extent to which employee certification, at either the State or the utility's organization level, is required as a basis for obtaining or maintaining a position. Records of technical training are maintained and the degree to which completed technical training is tied to promotion and pay is specified. Finally, the program specifies the technical training required before an employee is permitted to undertake specific work assignments or tasks.

b. Skills Training Program

This program specifies requirements (curriculum) for initial and refresher training to ensure each employee has a level of knowledge, commensurate with duties, of the specific equipment to be used and the procedures to be followed in carrying out duties. This program should include

outside skills training opportunities, such as manufacturers' or vendors' training workshops, that are made available to employees.

The program includes the extent to which employee certification, at either the State or the utility's organization level, is required as a basis for obtaining or maintaining a position. Records of skills training, whether formal or on-the-job apprenticeship, are maintained and the degree to which completed training is tied to promotion and pay is specified. Finally, the program specifies the skills and on-the-job training required before an employee is permitted to undertake specific work assignments or tasks.

c. Safety Training Program

This program specifies requirements (curriculum) for initial and refresher training to ensure each employee has an adequate level of knowledge regarding on-the-job safety. The program includes the extent to which employee safety certification at the State or at the utility's organization level is required as a basis for obtaining or maintaining a position. Records of safety training, including on-the-job safety meetings, are maintained. Finally, the program specifies the safety training required before an employee is permitted to undertake specific work assignments or tasks.

3. Safety

a. Safety Authority

A Safety Authority (whether a safety department, safety committee, safety officer, or similar mechanism) is present to establish utility safety policy, oversee compliance, and maintain the overall Safety Program. Program maintenance includes specifying safety resources needed for utility activities, assuring record of appropriate standard reporting forms, and establishing a Safety Review Board if appropriate.

b. Confined Space Program

This program provides marking for confined spaces, and uses a permitting system and written standard procedures for confined space entry.

c. General Safety Procedures Program

This program provides instruction in defensive driving, first aid, CPR, personal sanitation, personal protection clothing, and similar general work-related safety issues.

d. Traffic Management Procedures Program

This program provides for standard traffic management techniques, off-hour scheduling of line work, and coordination with law enforcement.

e. Lock-Out/Tag-Out Program

This program provides signs on equipment involved in the program, limitation to authorized personnel, required tag information, and permit requirements.

f. Safety Equipment Program

This program assures the availability of appropriate safety equipment such as tripods and hoists, well-calibrated atmospheric testing equipment, self-contained breathing apparatuses, lights and barricades, exhaust fans, and personal protective clothing.

g. Safety Performance Program

This program tracks parameters such as number of injuries, lost days, and workman's compensation claims to be used by management to assess Safety Program effectiveness.

4. Information Management Systems (IMS)

a. Management Programs IMS

This information management system enables utility management to adequately evaluate operation, maintenance, customer service (complaint response), and system rehabilitation activities so that overall system performance can be determined and utility planning can be conducted.

b. Operation Programs IMS

This information management system is used to track scheduled operational activities and to enhance operational performance. The system ensures timely production of operating reports and standardized data collection methods are used by field personnel (e.g., forms or PDA files). The system requires data review by the field supervisor and securely preserves operating records. While the system need not be computer-based, it should be capable of feeding information to the Management Programs IMS.

c. Maintenance Programs IMS

This information management system is used to track scheduled maintenance activities and to enhance maintenance performance. The system ensures timely production of maintenance reports and standardized data collection methods are used by field personnel (e.g., forms or PDA files). The system requires data review by the field supervisor and securely preserves maintenance records. While the system need not be computer-based, it should be capable of feeding information to the Management Programs IMS.

d. Customer Service IMS

This information management system is used to track reactive activities (i.e., emergencies or customer complaints) and to enhance customer service. The system ensures timely production of complaint reports and standardized data collection methods are used by field personnel (e.g., work order forms or PDA files). The system requires data review by the field supervisor and securely preserves service records. While the system need not be computer-based, it should be capable of feeding information into the Management Programs IMS.

5. Engineering

a. Collection and Transmission System Plans Program

This program ensures a full set of as-built plans for the collection and transmission system are available, field crews have ready access to the plans, and a written standard procedure is present to account changes, update the plans, and supply revised versions to field crews in a timely manner.

b. System Inventory Program

This program ensures an inventory of the utility's collection and transmission system is present, updated, and cataloged by service area or sewershed. The inventory lists the system components with their attributes and characteristics (e.g., pipe age, pipe size, pipe material, invert elevation, pump sizes, location of inverted siphons, pump stations, manholes, etc.).

c. Mapping Program

This program ensures adequately detailed maps are available to be used in conjunction with the utility's MOM programs. At minimum, the maps depict the location of gravity sewer lines, force mains, air valves, manholes (by identifying numbers), pump stations, major appurtenances, and the size of pipes.

d. Sewer System Design Program

This program ensures all new sewer system construction will be adequately designed and constructed using specifications that assure the integrity of the infrastructure. The program includes documented design criteria (e.g., slope and bedding materials), use of standardized construction details, use of standardized materials and construction practices, a standard design review process which includes review by utility personnel for possible maintenance concerns, standardized review forms, and record keeping procedures.

e. New Construction and Rehabilitation Inspection Program

This program ensures new construction or rehabilitative work is properly inspected, and built using the utility's standard construction specifications (including use of best management practices to prevent stream pollution). The program includes use of standardized construction procedures, standardized construction testing procedures, standardized inspection and testing forms/reports, and assurance that the inspection is conducted under the authority and supervision of a registered Professional Engineer. The program also provides subsequent closed circuit television (CCTV) inspection of line construction prior to expiration of the warranty, and retention of the tapes for reference.

f. Acquisition Considerations Program

This program ensures prospective infrastructure is inspected and evaluated for compliance with the utility's standard design and construction criteria before it is acquired by the utility from another entity. The program includes written standard procedures to conduct the evaluation and estimate the time/cost requirements to bring the infrastructure into compliance with utility standards.

g. Continuous Sewer System Assessment Program

i.) Prioritization

This program prioritizes sewer service areas (i.e., sewersheds) for sewer system assessment activities. Prioritization is based upon information such as complaints, flow monitoring (including flow isolation studies), historical location of sewer overflows, pump station run times, field crew work orders, and other relevant information available to the utility.

ii.) Dyed Water Flooding

This program conducts dyed water testing, when appropriate, to locate sources of inflow and other illicit connections to the sewer system. The program includes written standard

procedures, standard forms, performance measures, and a mechanism for including dyed water testing information in the IMS.

iii.) Corrosion Defect Identification

This program identifies locations within the sewer infrastructure subject to corrosion and provides for inspection of those locations for corrosion on a routine basis. The program includes written procedures for corrosion identification, corrosion identification forms, performance goals, corrosion defect analysis, and a mechanism for including corrosion defect information in the IMS.

iv.) Manhole Inspection

This program ensures routine inspection of manholes within the sewer system. The program includes standard manhole inspection procedures, manhole inspection forms, performance goals, manhole defect analysis, and a mechanism for including manhole inspection information in the IMS.

v.) Flow Monitoring

This program supplies flow monitoring data to support engineering analyses related to sewer system capacity and peak flow evaluations, and to assist scheduling of sewer line maintenance. The program may include installation of an appropriate number of calibrated permanent and/or temporary flow meters, or rudimentary use of visual flow observations taken during base flow periods in wet and dry seasons. The latter option is more cost-effective for some very small utilities. Either program should include a procedure for adequate rainfall measurement, servicing meters, and a mechanism for including flow monitoring information in the IMS.

vi.) Closed Circuit Television (CCTV)

This program provides internal inspection of the integrity of gravity sewer lines. The appropriate number of qualified CCTV personnel and dedicated equipment, or the scope of a CCTV contract, is determined to ensure sewer inspection work is completed properly. The program includes standard operating procedures (including pre-inspection cleaning), performance measures, and mechanisms for including CCTV information in the IMS and retaining CCTV tapes.

vii.) Gravity System Defect Analysis

This program analyzes gravity sewer system defects. The program includes standard defect codes, written defect identification procedures and guidelines, a standardized process for cataloging gravity system defects, a mechanism for including gravity system defect information in the IMS, and training specified for personnel.

viii) Smoke Testing

This program identifies sources of inflow into the gravity sewer system by use of smoke testing equipment. The program includes written standard smoke testing procedures, smoke testing forms, performance goals, smoke testing defect analysis, and a mechanism for including smoke testing information in the IMS.

ix.) Service Lateral Investigations

This program investigates infiltration and inflow contributions and other problems originating in service laterals. The program includes written standard investigation techniques, standard investigation forms, performance goals, standard analysis procedures, and a mechanism for including service lateral investigation information in the IMS.

x.) Pump Station Performance and Adequacy

This program permits evaluation of pump station performance and pump station adequacy. The program includes trend analysis of pump run-time meter, pump start-counter, or amperage data; historical review of the fundamental causes of pump failures; use of appropriate remote monitoring and alarm notification equipment; and a mechanism for including pump station performance information in the IMS.

h. Infrastructure Rehabilitation Program

This program rehabilitates gravity sewer lines, force mains, manholes, pump stations, and related appurtenances. The program includes a process for prioritizing rehabilitation, inventory of all completed rehabilitation (including a breakdown of the rehabilitation techniques used), inspection and performance measurement for all completed rehabilitation, written schedules for rehabilitation work, and a mechanism for including rehabilitation information in the IMS.

i. System Capacity Assurance Program

i.) Capacity Assurance for New Connections

This program ensures there is adequate capacity to collect, transmit, and treat additional sewage expected as a result of prospective new sewer connections. The program is integrated into, or thoroughly coordinated with, the building permit process. It is also integrated into the Acquisition Considerations Program described above in 5(f). The program has a mechanism for including capacity assurance information in the IMS.

ii.) **Protocols for Capacity Assurance**

The program includes, but is not limited to: use of standardized design flow rate rules of thumb (i.e., regarding pipe roughness, manhole head losses, accuracy of distance and slope on as-built drawings, and water use); use of techniques to predict the impacts of additional flow (i.e., use of a hydraulic model of gravity system, pressure system, and other appropriate techniques); and use of flow metering to confirm mathematical estimations of existing peak flow. The program requires certification of adequate capacity by a registered Professional Engineer, and includes an IMS mechanism for integrating analysis from this program with information on infiltration/inflow reduction activities.

6. Overflow Tracking

a. State Agency Reporting Program

This program includes written standard operating procedures which clearly define the minimum State Agency reporting requirements for events where sewage leaves the infrastructure before treatment, and the steps utility personnel must follow to meet or exceed those reporting requirements.

b. Local Agency Reporting Program

This program provides secondary notice to the public and to other appropriate organizations (e.g., downstream utilities with water intakes and local public health authorities) when an overflow presents an imminent and substantial threat to public health or the environment. The program includes written criteria for making this notice, procedures for notifying news media and posting notices at stream locations, and may also prepare an annual summary report available to the public.

c. Records Management Program

This program tracks all events where sewage leaves the utility's collection or transmission system before treatment (i.e., overflows to land, directly to waters, or indirectly to waters by storm drains or other paths). The program uses standardized forms which record, at minimum, the following information for response and inclusion in the IMS:

- Location of the discharge
- Name of the receiving water and description of the pathway (e.g., storm drain)
- Estimation of the discharge volume and the method of estimation
- Description of the system component that is source of the discharge
- Date and time the discharge started and stopped
- Root cause, or suspected root cause, of the discharge
- Steps taken to eliminate the discharge and steps taken to prevent reoccurrence.

7. Financial Analyses

a. Cost Analysis Program

This program regularly analyzes and projects future utility management, operations, and maintenance costs needed to properly implement these utility programs. The cost analyses include, at a minimum: overhead, labor and equipment, financial impacts of outsourcing certain activities, overtime, and the financial impacts imposed by organizational departments or agencies outside the utility. Cost analyses are performed for all management, operations, and maintenance equipment and the capital infrastructure investment. Cost analyses incorporate life cycle depreciation and establish cost-effective points for replacement. The program has a mechanism for including such replacement points in the IMS.

b. Capital Improvement Financing Program

This program analyzes, projects, plans and finances capital improvement needs established through proper engineering study. Capital improvement financing is planned using a five (5) year planning horizon with annual updates.

c. Budget and Customer Rate Program

This program establishes the annual utility budget and recommends customer rates. The program assures that the budget and funding provided by customer rates will meet the cost and capital financing needs set by programs 7(a) and 7(b) above.

8. Equipment and Supplies

a. Spare Parts Inventory Program

This program ensures proper management of the utility spare parts inventory including spare pipe. The program includes adequate parts storage facilities, identification and retention of an adequate number of critical spare parts (i.e., those which are difficult to obtain quickly but critical to proper operations), control of access to spare parts, an organized system for

inventory management (either manual or computerized), arrangement with local vendors for common parts, and specification of spare parts to be carried on vehicles.

b. Equipment and Tools Inventory Program

This program ensures proper management of the utility equipment and tools inventory. The program includes adequate equipment and tools storage facilities, control of access to equipment and tools, an organized system for inventory management (either manual or computerized), and specification of equipment and tools to be carried on vehicles.

c. Vehicle Repair Program

This program ensures proper management of utility vehicles. The program includes provisions for vehicle maintenance and vehicle repair. Performance measures for the program will consider turn-around time, cost factors, contract maintenance, and the life cycle cost analysis performed for vehicles.

9. Customer Service

a. Complaint Management Program

This program ensures proper complaint management. The program includes written standard management procedures for dispatchers (i.e., dispatch priorities, work order generation, and standardized complaint and problem codes). The program uses an organized record keeping procedure (including the use of standardized forms) which facilitates tracking work orders and follow-up with customers, and uses a mechanism to evaluate response performance and supply this information to the IMS.

b. Public Information Program

This program communicates utility activities which may closely impact the public (e.g., smoke testing, major construction or maintenance, or emergency maintenance), and ensures communication of activities which may coincide with those of other departments and agencies (e.g., street paving).

c. Public Education Program

This program educates the public and solicits support regarding issues such as service lateral maintenance, grease management, food disposals, inflow sources, maintenance/rehabilitation needs requiring increased rates, and problems caused by basement sump pumps.

10. Legal Support

a. Inter-Jurisdictional Agreement Program

This program develops, negotiates, and enforces agreements with neighboring utilities which send the utility flow or with major volume sewer customers. The program ensures that the agreements require the second party to have proper management, operation, and maintenance programs so the utility's infrastructure is not stressed by problems originating across jurisdictional boundaries. The program also ensures the agreements address flow-based capacity issues, specify the life of the agreement, have credible provisions for enforcement, and have provisions for modification.

b. Sewer Ordinance Program

This program develops, revises, and amends sewer ordinances as needed to support the proper management, operation, and maintenance of the utility. The program provides adequate legal authority for the utility regarding sewer use, grease management, pretreatment, private service laterals, sump pumps and roof drains, private haulers, recovering costs of damage to utility infrastructure, and other legal authorities as required. Legal support is provided for case work and guidance for utility staff.

11. Water Quality Monitoring

a. Routine Monitoring Program

This program determines the existence of unpermitted discharges originating at locations where sewers cross waterways or at other isolated or remote sewer locations. The program includes scheduled sampling during dry weather periods from a network of monitoring stations. The program also includes a map of the sampling network, and formally establishes sampling frequency, sampling parameters (i.e., fecal coliform and others), standard sampling procedures, quality assurance/quality control procedures, and a mechanism for including program information in the IMS.

b. Investigative Monitoring Program

This program determines the source of industrial, commercial, or sanitary wastewater resulting from cross connections with the stormwater drainage system, and typically activates through complaints or discovery by operations personnel. The program has formally established sampling parameters (i.e., fecal coliform and others), standard sampling procedures, quality assurance/quality control procedures, and a mechanism for including program information in the IMS.

c. Impact Monitoring Program

This program determines the impact of pollution resulting from discharges occurring within the utility infrastructure before treatment. Combined with the reporting programs described in Overflow Tracking (6) above, this program assists the utility, regulatory authorities, and public health authorities determine the appropriate response to protect health and/or the environment. The program has formally established sampling parameters (i.e., fecal coliform and others), standard sampling procedures, quality assurance/quality control procedures, and a mechanism for including program information in the IMS.

12. Contingency Plan for Utility Infrastructure

a. Contingency Planning Program

This program develops and modifies contingency plans for the sewer system and the treatment facilities that will be implemented during emergency situations. The planning process includes a preparedness committee of senior and experienced management and field personnel. A system overview is conducted to determine vulnerability to a variety of events which may be due to utility failures, natural causes, or failures caused by another party. Based upon these hypothetical events and past experience taken from root cause failure information in the IMS, prediction system component failure is made. Strategies to timely repair or overcome such component failures are developed, and the six (6) major contingency plan components are available in writing: public notification, agency notification, emergency flow control, emergency operation and maintenance, preparedness training, and water quality monitoring (described in 11(c) above).

i.) Public Notification

The public notification component includes a set of criteria, developed with input from local public health authorities, which are used as a basis for initiating public notification; a step-by-step procedural flow diagram; a list of manager names and phone numbers; a plan for regular business hours, off-hours, weekends, and holidays; a list of *Public Contacts* with phone numbers; identification of managers authorized to give statements; and pre-scripted news releases.

ii.) Agency Notification

The agency notification component includes a set of criteria, developed with input from appropriate local, State, and Federal authorities, which are used as a basis for initiating agency notification; a step-by-step procedural flow diagram; a list of manager names and phone numbers; a plan for regular business hours, off hours, weekends, and holidays; a list

of *Agency Contacts* with phone numbers; identification of personnel authorized to contact agencies; and copies of standard reporting forms used by the agencies.

iii.) Emergency Flow Control

The emergency flow control component is used to reduce overflow volumes and pollution where possible. The component includes a set of criteria which are used as a basis for initiating emergency flow control procedures; a step-by-step procedural flow diagram; a list of manager names and phone numbers; a plan for regular business hours, off-hours, weekends, and holidays; a list of *Emergency Flow Control Contacts* with phone numbers; identification of personnel authorized to initiate the emergency flow control program; and standard emergency flow control reporting forms.

Flow control activities may include flow re-routing, flow diversion, household flow reduction and advisories, commercial flow reduction and advisories, water pressure reduction and advisories, or use of pretreatment program protocols set forth in permits for significant industrial users. The initiating criteria, reporting forms and report formats should be developed in cooperation with significant industrial users and appropriate local, State, and Federal authorities.

iv.) Emergency Operation and Maintenance

The emergency operation and maintenance component includes a set of criteria which are used as a basis for initiating emergency operation and maintenance procedures; a step-by-step procedural flow diagram; a list of manager names and phone numbers; a plan for regular business hours, off-hours, weekends, and holidays; a list of *Emergency Operation and Maintenance Contacts* with phone numbers; identification of personnel authorized to initiate emergency operation and maintenance procedures; and standard reporting forms.

The initiating criteria, reporting forms, and report formats should be developed in cooperation with utility's insurance representatives, State and Federal emergency management agencies, and the State regulatory authority. Further, development of the emergency operations and maintenance component should include analyses of the need and use of stand-by equipment (prearranged rentals), stand-by contractors, and access to critical spare parts.

v.) Preparedness Training

The preparedness training component ensures that all personnel are fully aware of procedures and able to efficiently implement the Contingency Plan. The preparedness

training component includes specialized training courses, field trials, and special emergency situation safety training.

b. Response Flow Diagram

This diagram includes the roles of senior management and field personnel and shows the relationship of the six (6) major contingency plan components: public notification, agency notification, emergency flow control, emergency operation and maintenance, preparedness training, and water quality monitoring.

OPERATION PROGRAMS

1. Pump Station Operation

a. Preventative Operation Program

This program ensures reliable operation of the transmission system through use written standard operating procedures available for both manned and unmanned stations. Procedures may include reading and recording information from pump run-time meters, or start counters, or taking amperage readings; recording wet well conditions and grease accumulation; checking and resetting (as necessary) wet-well set points; checking and recording system pressure; checking remote monitoring and alarm equipment components; checking operation of alarms and stand-by power; and reporting maintenance needs. The program has established schedules, routes, priorities, standard forms, performance measures, and a mechanism for including program information in the IMS.

b. Reactive Operation Program

This program ensures timely response to atypical situations in the transmission system through use of written standard operating procedures available for both manned and unmanned stations. Procedures may include initiating auxiliary power with portable generators, installing portable pumps during high flow, or initiating the Contingency Plan. The program has established standard forms and reporting procedures, performance measures, and a mechanism for including program information in the IMS.

2. Pretreatment Program

This program ensures that operation of the utility's treatment facility is protected from pollutant pass-through or interference. If a utility has industrial or commercial users it may have this program which includes industrial user identification, permitting, monitoring and inspections, enforcement, and other components. Personnel involved with the utility pretreatment program will have frequent communication with operation and maintenance personnel to detect possible pretreatment permit violations. The program has standard operating procedures, performance measures, inspection schedules, and a mechanism for including program information in the IMS.

3. Corrosion Control Program

This program provides for inspection of the utility infrastructure for corrosion caused by hydrogen sulfide or other corrosives, the development and implementation of site-specific corrosion control

measures, a monitoring program to evaluate corrosion control measures, program performance measures, and a mechanism for including program information in the IMS.

4. Fats, Oils, and Grease Control Program

This program prevents fats, oils, and grease from entering the utility infrastructure, therefore preserving sewer capacity, prolonging the infrastructure life, reducing overflow events, and saving the utility maintenance costs. The program includes a grease control ordinance, grease trap and interceptor design standards, permitting and inspecting commercial grease traps and interceptors, a credible enforcement component, a public education component for residential sources, performance measures, and a mechanism for including program information in the IMS.

5. Service Connection/Disconnection Program

This program includes written standard procedures for new sewer tap installation or for sewer disconnection; inspection of all new service connections to, or disconnections from, the utility sewer; a credible enforcement program; performance measures; and a mechanism for notifying personnel in the Mapping Program or including program information in the IMS.

6. Private Haulers Program

This program issues permits to private commercial or septic tank waste haulers discharging to the utility, and includes written standard operating procedures for inspection/sampling of the haulers, a credible enforcement program, program performance measures, and a mechanism for including program information in the IMS.

7. Line Location Program

This program responds to requests for utility sewer line locates, and includes written standard line location procedures, defined prioritization to assist scheduling, appropriate staffing and equipment for the average number of requests, standard line location procedures, standard forms, performance measures, and a mechanism for including program information in the IMS.

MAINTENANCE PROGRAMS

1. Pump Station Preventative Maintenance

a. Pump Station Repair Program

This program is a reactive maintenance component intended to repair pump stations that are currently in a state of disrepair but still cost-effective to service. The program includes established priorities for pump station repairs, maintaining an ongoing inventory of completed repairs, a work schedule for pump station repairs, and a mechanism for including pump station repair information in the IMS. Upon completion of pump station repairs, service activities are transferred to the pump station preventative maintenance program.

b. Electrical Maintenance Program

This program is a component of the pump station preventative maintenance program. The program includes an established number of crews and personnel required to perform effective electrical maintenance, written standard electrical maintenance procedures, scheduling preventative maintenance, standard forms, performance measures, and a mechanism for including electrical maintenance information in the IMS.

c. Mechanical Maintenance Program

This program is a component of the pump station preventative maintenance program. The program includes an established number of crews and personnel required to perform effective mechanical maintenance, written standard mechanical maintenance procedures, scheduling preventative maintenance, standard forms, performance measures, and a mechanism for including mechanical maintenance information in the IMS.

d. Physical Maintenance Program

This program is a component of the pump station preventative maintenance program. The program includes an established number of crews and personnel required to perform effective physical maintenance, written standard physical maintenance procedures, scheduling, standard forms, performance measures, and a mechanism for including physical maintenance information in the IMS.

2. Gravity Line Preventative Maintenance

a. Routine Hydraulic Cleaning Program

This program includes accurately determined cleaning needs, established priorities and scheduled cleaning activities, support of an appropriate number of crews and personnel, acquired necessary equipment (e.g., Jet Unit, Combination Unit, etc.), written standard hydraulic cleaning procedures, standard forms, performance measures, and a mechanism for including hydraulic cleaning information in the IMS.

b. Routine Mechanical Cleaning Program

This program includes accurately determined cleaning needs, established priorities and scheduled cleaning activities, support of an appropriate number of crews and personnel, acquired necessary equipment (e.g., Rodders, Bucket Machine, etc.), written standard mechanical cleaning procedures, standard forms, performance measures, and a mechanism for including mechanical cleaning information in the IMS.

c. Root Control Program

This program includes accurately determined root control needs, established priorities and scheduled activities, support of an appropriate number of crews and personnel, acquired necessary equipment (e.g., mechanical, chemical, etc.), written standard root control procedures, standard forms, performance measures, and a mechanism for including root control information in the IMS.

d. Manhole Preventative Maintenance Program

This program includes accurately determined manhole maintenance needs, established priorities and scheduled activities, support of an appropriate number of crews and personnel, acquired necessary equipment (rings and lids, structural repair, etc.), written standard manhole maintenance procedures, standard forms, performance measures, and a mechanism for including manhole maintenance information in the IMS.

3. Air Valve Preventative Maintenance Program

This program provides for inspection and maintenance of air valves located on force mains (including regular valve exercise). The program includes an established number of crews and personnel required to perform effective preventative maintenance, written standard air valve maintenance procedures, scheduling, standard forms, performance measures, and a mechanism for including air release valve maintenance information in the IMS.

4. Maintenance of Way

a. Maintenance of Rights-of-Way and Easements Program

This program includes accurately determined maintenance needs, established priorities and scheduled activities, support of an appropriate number of crews and personnel (based on the number of waterway crossings and/or miles of sewer off-street), written standard maintenance procedures, standard forms, performance measures, and a mechanism for including maintenance information in the IMS.

b. Street Paving Monitoring Program

This program includes accurately determined monitoring needs, established priorities and scheduled activities, coordination with storm drain projects and street and highway officials, support of an appropriate number of crews and personnel, acquired necessary equipment (e.g., manhole and valve raising, etc.), written standard monitoring procedures, standard forms, performance measures, and a mechanism for including monitoring information in the IMS.

5. Reactive Maintenance Program

This program provides response to customer complaints or other unscheduled system problems forwarded by dispatchers. The program includes support of an appropriate number of crews and personnel, written standard response procedures including a protocol for initiating the Contingency Plan, standard forms, collection of information in support of failure analysis, sewer map availability, performance measures, and a mechanism for including reactive maintenance information in the IMS.

Exhibit 2 to APPENDIX E

Sanitary Sewer Overflow Response Protocol



**Sanitary Sewer Overflow
Response Protocol
(SORP)**

Prepared for
**Hamilton County
Water & Wastewater
Treatment Authority (WWTA)**

Submitted by



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Acronyms and Abbreviations

CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CMMS	Computerized Maintenance and Management System
CMOM	Capacity, Management, Operations, and Maintenance
CSO	Combined Sewer Overflow
CSOTF	Combined Sewer Overflow Treatment Facility
CSS	Combined Sewer System
DMR	Discharge Monitoring Report
EPA	United States Environmental Protection Agency
GIS	Geographic Information System
gpm	Gallons Per Minute
HAZMAT	Hazardous Material
I&I	Infiltration and Inflow
ISS	Interceptor Sewer System
MGD	Million Gallons Per Day
MOM	Management, Operations, and Maintenance
MOR	Monthly Operating Report
NPDES	National Pollution Discharge Elimination System
O&M	Operation and Maintenance
SCADA	Supervisory Control and Data Acquisition System
SOP	Standard Operating Procedures
SORP	Sewer Overflow Response Protocol
SSO	Sanitary Sewer Overflow
SSS	Sanitary Sewer System
TDEC	Tennessee Department of Environment and Conservation
TWRA	Tennessee Wildlife Resources Agency
WRD	Waste Resources Division
WWTA	Water and Wastewater Treatment Authority
WWTP	Wastewater Treatment Plant

1.0 Introduction

1.1 Purpose

The Hamilton County Water and Wastewater Treatment Authority (WWTA) prepared this Sewer Overflow Response Protocol as part of their Management, Operations and Maintenance (MOM) Program. This document was prepared to provide employees and regulatory agencies with a written framework for how responses to SSOs will be addressed.

The purpose of the SORP is to establish timely and effective methods and means of:

1. Mitigating the impacts of SSO's through the effective response to these events;
2. Providing information such as location, volume, cause and impact of confirmed SSOs;
3. Reporting SSO information to regulatory agencies;
4. Notifying the public about these events; and
5. Reducing the environmental impact and potential health hazards of these events.

This SORP has been prepared as a guidance document that provides standard operating procedures (SOPs) for the response and actions taken when SSOs are reported. This document was prepared in accordance with U.S. EPA Region IV MOM guidance and information available from the American Public Works Association and Water Environment Federation.

1.2 Authority

Authority for this SORP is derived from the following:

1. Tennessee Code Annotated (TCA), § 68-221-601 and Resolution 493-27 that created and established the Hamilton County Water and Wastewater Treatment Authority on April 7, 1993.
2. Tennessee Department of Environment and Conservation State Operating Permit Number SOP-89044 issued on November 1, 2009.
3. National Pollution Discharge Elimination System (NPDES) Permit Number TN0021211 for the Signal Mountain Wastewater Treatment Plant issued on May 20, 1977.
4. Tennessee Water Quality Control Act TCA § 69-3-108(b) (1), (2), (3), (4), and (6)
5. Federal Clean Water Act 33 U.S.C. §1251 et seq. (1972)

2.0 General

This program is designed to assist the WWTa in immediately responding to and addressing SSOs so that the effects of the SSOs can be minimized and to ensure that any required notification or reporting is made to the appropriate local, state, and federal authorities.

2.1 Objectives

The primary objectives of the program are to:

1. Protect public health and the environment;
2. Provide appropriate customer service;
3. Protect the wastewater collection system personnel;
4. Protect private and public property beyond the wastewater collection system,
5. Comply with regulatory agencies and permit conditions that address procedures for managing confirmed SSO.

2.2 Key Elements of the SORP

The key elements of the SORP are addressed individually as follows:

Section 3.0 Overflow Response Procedure

Section 4.0 Regulatory Notification Procedure

Section 5.0 Public Advisory Procedure

Section 6.0 Distribution and Maintenance of the SORP

2.3 Definitions

Act: The Clean Water Act (33 U.S.C. 1251 et seq., as amended)

Building Backup: A building backup occurs when wastewater backs up into buildings due to blockages or flow conditions in the WWTa's collection system (other than a private service lateral). A wastewater backup into a building that is caused by a blockage or other malfunction in a private service lateral is not considered to be a Building Backup for the purposes of this document.

CCTV: Closed circuit television used to visually inspect the internal condition of pipes and subsurface structures.

Cleanout: A cleanout is a vertical pipe with a removable cap extending from a private service lateral to the surface of the ground. It is used for access to the private service lateral for inspection and maintenance.

Computerized Maintenance and Management System (CMMS): A Computerized Maintenance and Management System (currently Cityworks®) is used to maintain records of WWTAs assets, including physical properties and any maintenance and repair records. It also generates work orders and facilitates workflow to or between departments.

Collection System: The network of pipes, manholes, and associated appurtenances that transports wastewater from homes and businesses to the treatment plant is referred to as the collection system.

Combination Cleaners: Combination cleaners are mechanical equipment with flushing and suction capabilities. This equipment is used to clear or collect wastewater and related debris from the collection system.

Dispatcher: A designated WWTAs employee who contacts, notifies, and sends a First Responder to respond to possible SSO events.

Discharge: A discharge is any release of untreated wastewaters (including that combined with storm waters) induced by infiltration and inflow (I&I) from a sanitary sewer system.

Dry Weather SSO: A discharge of untreated sewage from a sanitary sewer system due to flow restrictions or system disruptions.

EPA: United States Environmental Protection Agency.

Excessive infiltration/inflow: The quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow. (See §§ 35.2005(b) (28) and (29) and 35.2120.)

First Responder: Typically, a designated WWTAs Sewer Maintenance employee or any qualified WWTAs employee who assumes initial responsibility for responding to an SSO event.

Force Main: A pressurized pipeline that conveys wastewater from a pump station.

Geographic Information System (GIS): A mapping and location based data management software and process created, owned, and funded by Hamilton County and other regional users. GIS maintains digital geographic and asset data for all of Hamilton County, Tennessee. The GIS Office manages some of the core mapping information, including topography and aerial photography, while respective WWTAs, County, and other regional users maintain other map “layers,” such as property, utility information, and address data.

Gravity Lines: Gravity or “main” pipelines represent the largest portion of the wastewater collection system. They use changes in elevation to transport sewage between points (typically manholes or junction boxes).

Industrial user: Any nongovernmental, nonresidential user of a publicly owned treatment works which is identified in the Standard Industrial Classification Manual, 1972, Office of Management and Budget, as amended and supplemented, under one of the following divisions:

Division A. Agriculture, Forestry, and Fishing

Division B. Mining

Division D. Manufacturing

Division E. Transportation, Communications, Electric, Gas, and Sanitary Services

Division I. Services

I&I or I/I: Inflow and infiltration, or extraneous surface or ground water that enters the wastewater collection system.

Interceptor Sewer System (ISS): The ISS is the entire sewer system for the City of Chattanooga which is the owner and operator of the regional wastewater treatment plant at Moccasin Bend.

Impacted Areas: Impacted areas are sites where sanitary sewage or combined sewage has collected or areas that have been affected as the result of a discharge from the collection system.

Infiltration: As defined by 40 CFR § 35.2005(b)(20), Water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

Inflow: As defined by 40 CFR § 35.2005(b)(21), Water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from, infiltration.

Interceptor sewer: A sewer which is designed for one or more of the following purposes:

- (i) To intercept wastewater from a final point in a collector sewer and convey such wastes directly to a treatment facility or another interceptor.
- (ii) To replace an existing wastewater treatment facility and transport the wastes to an adjoining collector sewer or interceptor sewer for conveyance to a treatment plant.
- (iii) To transport wastewater from one or more municipal collector sewers to another municipality or to a regional plant for treatment.
- (iv) To intercept an existing major discharge of raw or inadequately treated wastewater for transport directly to another interceptor or to a treatment plant.

Junction Box: A junction box provides a connection point for gravity lines, private service laterals, or force mains, as well as an access point for maintenance and repair activities. This is typically separate and distinctive from a manhole.

Manhole: is the top opening to an underground utility vault used to house an access point for making connections or performing maintenance on underground and buried public utility and other services including sewers, telephone, electricity, storm drains and gas.

Non-excessive infiltration: The quantity of flow which is less than 120 gallons per capita per day (domestic base flow and infiltration) or the quantity of infiltration which cannot be economically and effectively eliminated from a sewer system as determined in a cost-effectiveness analysis. (See 40 C.F.R. §§ 35.2005(b) 16) and 35.2120.)

Non-excessive inflow: The maximum total flow rate during storm events which does not result in chronic operational problems related to hydraulic overloading of the treatment works or which does not result in a total flow of more than 275 gallons per capita per day (domestic base flow plus infiltration plus inflow). Chronic operational problems may include surcharging, backups, bypasses, and overflows. (See 40 C.F.R. §§ 35.2005(b)(16) and 35.2120).

Operation and Maintenance (O&M): Activities required assuring the dependable and economical function of transport and treatment works.

- (i) Maintenance: Preservation of functional integrity and efficiency of equipment and structures. This includes preventive maintenance, corrective maintenance and replacement of equipment as needed. (See 40 C.F.R. § 35.2005(b)(36))
- (ii) Operation: Control of the unit processes and equipment which make up the treatment works. This includes financial and personnel management, records, laboratory control, process control, safety and emergency operation planning.

Private Service Lateral: Private Service Lateral shall mean that portion of a sanitary sewer pipe, not owned or operated by WWTa that extends from a structure to the point at which such pipe connects to the WWTa's portion of the collection system.

Priority water quality areas: For the purposes of 40 C.F.R. § 35.2015, specific stream segments or bodies of water, as determined by the State, where municipal discharges have resulted in the impairment of a designated use or significant public health risks, and where the reduction of pollution from such discharges will substantially restore surface or groundwater uses.

Public System: Public system refers to the portion of the wastewater collection system, excluding private service laterals and connections with private systems.

Pump Station: A pump or lift station is a mechanical method of conveying wastewater to higher elevations.

Sanitary Sewer: A conduit intended to carry liquid and water-carried wastes from residences, commercial buildings, industrial plants and institutions together with minor quantities of ground, storm and surface waters that are not admitted intentionally.

Sanitary Sewer Overflow (SSO): An SSO is any discharge of wastewater to waters of the United States or the State from the sanitary sewer from a point source not permitted in the NPDES permit, as well as any overflow, spill, or release of wastewater to public or private

property from the sewer system that may not have reached waters of the United States or the State, including building backups.

Sanitary Sewer System (SSS): A sanitary sewer system collects, conveys, and treats residential, commercial, and industrial wastewaters through a complex network of infrastructure.

Sewer Overflow Response Protocol (SORP): A SORP provides structured guidance, including a range of field activities to choose from, for a uniform response to overflows.

Sewersheds: Sewersheds or basins are small portions of the sanitary sewer system and combined sewer system defined by boundaries of natural topography or system configuration. Separating the system into sewersheds or basins allows the WWTa to better identify and monitor system performance in those smaller areas.

Supervisory Control and Data Acquisition System (SCADA): SCADA is automated sensory control equipment that monitors the operation of the pump stations. The SCADA system will convey alarms when predetermined conditions occur. Monitoring parameters include, but are not limited to, power failures, high wet well levels, and pump failures that could potentially cause overflows.

TDEC: Tennessee Department of Environment and Conservation.

TWRA: Tennessee Wildlife Resources Agency.

Unpermitted Discharges: A discharge of pollutants from any location within the sanitary sewer system that reaches waters of the State and which are not authorized by an NPDES Permit.

Wastewater Collection and Transmission System (WCTS): The WCTS is the wastewater collection, retention, and transmission systems, including all force mains, gravity sewer lines, pump stations, manholes, and other related appurtenances thereto owned or operated by an entity that are designed to collect and convey municipal sewage (domestic, commercial, and industrial) to a WWTP.

Waters of the State: Waters of the State (Tennessee) shall have the same meaning as "Waters" defined under TCA § 69-3-103 (33).

Wet Weather SSO: A discharge of untreated sewage from a sanitary sewer system due to excessive flows during rain events or elevated ground and surface water conditions causing inflow and infiltration of additional water into the WWTs.

WRD: Waste Resources Division of the City of Chattanooga

WWTa: Hamilton County Water and Wastewater Treatment Authority.

WWTP: Wastewater treatment plant.

2.4 Types of SSOs

SSO is a broad term used to describe the discharge of wastewater from a sanitary sewer system (SSS) anywhere except from a permitted discharge point. All suspected SSOs that are reported to the WWTa will be investigated to verify, identify and correct the problem.

2.4.1 Wet Weather SSOs

Wet weather SSOs result from excessive flows during significant rain events and/or elevated ground and surface water conditions causing inflow and infiltration of unwanted additional water into the SSS. Wet weather SSOs can be attributed to a number of factors, including, but not limited to, the following:

- Downspout connections to the SSS
- Footing drains connections to the SSS
- Sump pumps connections to the SSS
- Leaking service laterals;
- Flooding from the storm water system.

2.4.2 Dry Weather SSOs

SSOs during dry weather are most often caused by flow restrictions or system disruptions. Dry weather SSOs can be attributed to a number of factors including, but not limited to, the following:

- Bottlenecks and/or blockages;
- Grease;
- Roots;
- Debris;
- Mechanical or electrical failures;
- Loss of electrical power;
- System overloads;
- Sewer main breaks; and
- Treatment facility malfunctions and/or overloads.

2.5 General Categories of SSOs

SSOs may occur in any part of the SSS, however, where they occur generally dictate the type of response needed to identify, isolate, control, correct, and remediate the SSO location. SSOs can be separated into three (3) primary categories, which are the following:

- Collection System;
- Pump Station or WWTP; and

- Building Backups.

2.5.1 Collection System

SSOs related to the collection system portion of the SSS may occur in wet weather and/or dry weather and will require crews with different skills and equipment to address the problem.

Typical causes associated with SSOs in this category are the following:

- Bottlenecks and/or blockages;
- Grease;
- Roots;
- Debris;
- Pipe collapses; and
- Capacity issues.

2.5.2 Pump Stations or WWTP

SSOs related to pump stations or the WWTP portion of the SSS may occur in wet weather and/or dry weather and will require crews with different skills and equipment to address the problem.

Typical causes associated with SSOs in this category are the following:

- Loss of electrical power;
- Electrical and mechanical failures;
- Malfunctions of WWTP unit processes;
- Stoppages in wet well piping, valves, and force mains; and
- Capacity limitations.

2.5.3 Building Backups

SSOs related to building backups may occur in wet weather and/or dry weather and will require crews with different skills and equipment to address the problem. Typical causes associated with SSOs in this category are similar to that for the collections system and include the following:

- Bottlenecks and/or blockages;
- Grease;
- Roots;
- Debris;
- Pipe collapses; and
- Capacity issues.

2.6 Description of Collection System

The wastewater collection and transport system for East Ridge, Soddy Daisy, Redbank, Signal Mountain, Lookout Mountain, Lakesite, Ridgeside and the unincorporated areas of Hamilton County is operated and maintained by the Hamilton County Water & Wastewater Treatment Authority (WWTA). The system is comprised of 473 miles (2,500,000 LF) of gravity sewers ranging in size from 6-inch to 24-inch in diameter, 10,592 manholes, 60 lift stations with 80 miles of force main, 260 grinder pumps with 30 miles of low pressure force main, and one wastewater treatment plant (WWTP) serving the Signal Mountain area. The majority of the collection system area flows into the collection system owned and operated by the City of Chattanooga's Waste Resources Division's Interceptor Sewer System (ISS), where it is treated at the Moccasin Bend WWTP before being discharged into the Tennessee River. The collection system is operated under Permit No. SOP-89044.

The majority of the collection system was designed and installed between 1957 and 2007, with additional commercial, institutional and residential developments added over the last 8 years. WWTA serves a total of 27,000 customer accounts. The service area is approximately 249,926 acres, of which 11% (28,159 acres) is currently served with sewers.

2.7 Organization of WWTA

The WWTA was created on April 7, 1993, by the Hamilton County Board of Commissioners pursuant to the provisions of Tennessee Code Annotated (TCA), Section 68-221-601 and was approved under Resolution 493-27. The governing board has twelve members. Five members are appointed by the Hamilton County Board of Commissioners. Each of these five members serve staggered five-year terms. The remaining seven members are appointed by each of the participating municipalities. The Executive Director is the senior manager of the WWTA and reports directly to the WWTA Board of Commissioners. The WWTA management structure consists of four (4) functional areas reporting to the Executive Director. These functional areas are Collection Systems Operations, Administrative Operations, Service Lateral Program and Engineering. WWTA has a total of twenty-nine (29) employees among the four functional areas shown in the organization chart for WWTA provided in Appendix A. The WWTA service area has been broken down into 5 separate areas and an Area Supervisor assigned to each. Detailed information for the areas and pertinent staffing and contact numbers are provided in Appendix A.

3.0 SSO Response Procedures

An SSO response procedure provides the WWTa with a strategy for mobilizing labor, materials, tools, and equipment to correct or repair a condition that may cause or contribute to an SSO. The procedures described herein consider a range of potential failures that could lead to an SSO to surface waters, land, or buildings.

3.1 Receipt of Information Regarding an SSO

3.1.1 SSO Report Sources

Reports of a possible SSO may be received by the WWTa from one or more of the following:

- A telephone call, e-mail, text or other social media contact, or written communication from a customer or citizen;
- A telephone call, email, text, or other social media contact from a WWTa or Hamilton County employee;
- The remote telemetry system for the WWTa’s pump stations;
- An outside party such as a regulatory agency, customer, or other interested party; or
- WWTa employee(s) checking “hot spot” locations where SSOs had previously occurred during wet weather events.

The WWTa’s administrative staff is generally responsible for receiving calls from the public regarding possible SSOs.

3.1.2 SSO Report Information

When a telephone call is received concerning a possible SSO, the Administrative Staff representative records as much as possible relevant information regarding the potential SSO on the Hamilton County WWTa Complain Form (CF) in Cityworks®. Hard copies of the complaint form are also available should the staff be unable to access the Cityworks® program. The Complaint Form supporting document templates are provided in Appendix B-1. The following information is captured on the Complaint Form:

- Time and date call was received;
- Specific location and description of problem;
- Time that possible SSO was noticed by the caller;
- Caller’s name and phone number;
- Observations of the caller (e.g., odor, duration, location of the SSO, any impacts); and

- Other relevant information that will enable the quick identification, assessment, and corrective actions to be taken by WWTa field personnel.

In the event that an SSO call is received by WWTa personnel from sources other than an administrative staff representative, the WWTa personnel taking the call or report will, if possible, collect the same information noted above.

3.1.3 SSO Reporting for Collection System and Building Backups

During normal business hours, (normal business hours are from 8:00 AM to 4:00 PM, Monday through Friday), customer complaints or SSO reports are received by Administrative Staff located at the Development Resource Center at 1250 Market Street, Suite 3050, via calls to the WWTa main telephone number (423-209-7842) or via email to wwta@hamiltontn.gov. When the Administrative Staff receives a customer complaint regarding a possible SSO, the Administrative Staff then contacts by cell phone the Senior Wastewater Technician responsible for the service area where the SSO was reported. The Senior Wastewater Technician or their designated Resident Project Representative (RPR), or “First Responder”, investigates the complaint to determine if an SSO has occurred or is occurring. The First Responder then creates a work order (See Appendix B) via their truck mounted laptop and coordinates with the Senior Wastewater Technician to call in other maintenance personnel and equipment as needed to address the SSO. Outside of normal business hours, reports of SSO’s can be made to the emergency number (423) 209-6408 listed on customer bills and the website located at <http://www.hamiltontn.gov/wwta/index.html>. The WWTa on-call maintenance personnel will receive all calls occurring outside of normal working hours and will follow the same procedure of filling out a customer complain form with the necessary details described above and will then investigate the complaint to determine if an SSO is occurring or has occurred. The on-call maintenance personnel will then call the appropriate Senior Wastewater Technician for additional manpower and equipment necessary to respond to the SSO.

3.1.4 SSO Reporting for Pump Stations and Other Mechanical Assets

Each pump station in the WWTa collection system has a remote telemetry system installed with an autodialer connected to a land line telephone or a cellular modem. When a fault at the station occurs, the autodialer is programmed to alert the respective Assistant Wastewater Manager, Senior Wastewater Technician and Wastewater Technician responsible for maintaining the station in ascending order until the alarm or fault has been acknowledged. Specific faults or alarms that are monitored at each station include, but are not limited to:

- Power failures, phase failure;
- Mechanical failures;
- Wetwell levels; and
- Pump failures

When an alarm is received the Assistant Wastewater Manager or his designee acknowledges the alarm and investigates the cause. If an SSO has occurred or is occurring, a work order is created and the appropriate personnel and equipment necessary to respond to the SSO are called in. As part of the routine maintenance of each station, alarms and defaults are tested weekly and no less than quarterly to ensure that the remote telemetry system is operating as required.

3.2 Dispatch of WWTa Crews to Location of SSO

Crews are dispatched to any location of a reported/suspected SSO immediately. Additional WWTa maintenance personnel are “on call” should extra personnel or crews be needed.

3.2.1 General

A Senior Wastewater Technician will receive notification of SSOs as outlined in Section 3.1 of the SORP and dispatch an appropriate Wastewater Technician or First Responder and/or the appropriate crews and resources as needed. The Senior Wastewater Technician will notify the appropriate Wastewater Manager or Assistant Wastewater Manager by telephone, cell phone, text or email regarding SSO and field crew locations.

3.2.2 Dispatching Crews

WWTa employees being dispatched to the site of an SSO should proceed immediately to the location of the suspected SSO, typically within one (1) hour after notification. Any delays or conflicts in assignments should be immediately reported to the Senior Wastewater Technician and/or WWTa Director and/or Chief Engineer and/or Wastewater Manager and/or Assistant Wastewater Manager for resolution.

3.3 SOPs for Responding to SSOs

3.3.1 General

SSOs of different types and in different categories will require responses from various crews and equipment. The general categories are as follows:

- Collection System;
- Pump Stations or WWTP;
- Building Backups;
- Hazardous Wastes;
- Fish Kills; and
- Wet Weather Related.

3.3.2 Responses in the Collection System

A. General – SOP for Collection System Response

1. SSOs can occur anywhere in the collection system, including along creeks and within public right-of-ways or dedicated public easements. The WWTa First Responders should understand that each event may require a unique plan of action.
2. The WWTa First Responders provide the initial response to SSOs or other unscheduled wastewater issues in the collection system. They are typically the first WWTa representatives to arrive at a suspected SSO and will initiate the field response per this SORP.
3. The First Responders may request additional support as needed based on the SSO event. Additional support crews will generally have additional capabilities such as hydraulic cleaning equipment to mitigate blockages and CCTV equipment to perform follow-up inspections. Sewer maintenance crews will perform any containment and cleaning activities prescribed by this SORP.

B. Procedure Steps for Collection System Response (“SOP”)

Once at the location of the suspected SSO the First Responder will:

1. Identify and isolate the cause of the SSO or (See Section 3.4.1 – Responsibilities upon Arrival for detail); usually, the causes can be identified as one of the following:
 - Pipe blockages due to grease, roots or debris;
 - Pipe breaks; or
 - Capacity issues.

Note any potential for the release of oil or hazardous substance or potential for fish kills.
2. Attempt to correct the problem by taking the following steps:
 - Removing the blockage;
 - Initiating point repairs to the pipe;
 - Utilizing bypass pumping, if appropriate;
 - Contacting the Area Supervisor to evaluate shutting off an upstream pump station if the SSO involves a force main;
 - Coordinating with the Area Supervisor; or
 - Requesting additional sewer maintenance resources as required.

3. Determine the infrastructure configuration and the necessary investigation points to be evaluated, such as upstream and downstream manholes (minimum of two (2) in both directions), and other potential problem areas using GIS maps of the collection system.
4. Determine the total impacted area and assess the necessary remediation techniques or practices needed by taking the following actions:
 - Outlining the impacted area;
 - Determining what environmental impacts and potential hazards to public health are present;
 - Evaluating the following factors, at a minimum:

Streams and creeks, stormwater infrastructure, private property, or public health, safety, and accessibility; and
 - Coordinating with the Area Supervisor and Chief Engineer.
5. Establish an initial containment area and control zone around the impacted area (See Section 3.4.2 - SSO Containment for detail) by taking the following steps:
 - Determining the number of barricades to distribute based on the size of the area impacted and best judgment;
 - Using appropriate signs and barricading practices around the perimeter of the impacted area to limit public access and warning public of potential health hazards;
 - Coordinating with Area Supervisor; and
 - Requesting additional sewer maintenance resources as necessary.
6. Evaluate, determine, and coordinate with Senior Wastewater Technician about additional sewer maintenance resources needed to correct, contain, and remediate the SSO location.
7. Request guidance and development of action plans from Wastewater Manager, Assistant Wastewater Manager, and Chief Engineer as needed for unusual situations to help meet the goals of the SORP to isolate, confirm, correct, contain, and remediate the SSO.
8. Assist with site clean-up and remediation as needed.
9. Prepare or assist in preparation of SSO reports (See Appendix B), activity sheets (See Appendix B), GIS maps, and work orders (See Appendix B) including before, during, and after photos and/or videos of the event and ensure that the SSO Report will be provided within the specified time to appropriate agencies.

10. Assist, as required, Senior Wastewater Technician with the final inspection of the SSO location to determine that the SSO has been adequately addressed as set forth in this SORP.

C. Cleanup and Remediation Resources – SOP for Collection System Response

1. WWTa will follow the response procedures outlined above and use its available resources to correct, contain, and cleanup SSOs. WWTa will make available the additional personnel, material, supplies, and equipment necessary at the site of an SSO (See Section 3.4.4 - SSO Site Cleanup or Remediation Practices for detail).

The following resources will be available as needed:

- Trained personnel;
- Excavation equipment, track hoes, excavators, etc.;
- Combination cleaner/flushing equipment;
- Closed circuit television equipment;
- By-pass pumping equipment;
- Other materials, such as sand bags, silt fences, lime, signs, hand tools etc.; and
- External specialty contractors.

3.3.3 Responses at Pump Stations and Other Assets

A. General - SOP for Pump Stations or WWTP Response

1. WWTa maintenance personnel are responsible for operation and maintenance of the pump stations and any WWTP located in their service areas.
2. Each pump station and WWTP is equipped with remote telemetry systems that monitor the operation of the stations and/or WWTP. The remote telemetry system will convey alarms when predetermined conditions are present at the pump station or WWTP.
3. In addition to the continuous monitoring by remote telemetry system, each pump station, and WWTP is inspected on a weekly basis. WWTa Maintenance personnel perform service checks on the instrumentation devices and if necessary coordinate with third party vendors for calibration and repair of any instrumentation, such as flow meters, level sensors, alarms, and telemetry equipment on a periodic basis.
4. Pump Station maintenance personnel serve as the First Responders for pump station, or WWTP service calls. For any incident that involves an SSO, pump station maintenance personnel in conjunction with a Senior Wastewater Technician will coordinate and implement the requirements of the SORP and take the appropriate action to contain the

SSO. WWTa will dedicate additional resources to the SSO response as needed to satisfy the requirements of this SORP.

B. Procedure Steps - SOP for Pump Stations or WWTP Response

Once on the site of the pump station or WWTP SSO, the First Responder will:

1. Identify and isolate the cause of the disruption to the pump station or WWTP (See Section 3.4.1 - Responsibilities upon Arrival for detail); usually, these causes can be identified as the loss of power or the failure of a critical mechanical or electrical component. Note any potential for the release of hazardous substances or potential for fish kills.
2. Attempt to correct the problem by taking the following actions, as needed:
 - Restoring power;
 - Using a redundant power supply;
 - Placing a standby pump in service;
 - Using portable pumping equipment;
 - Coordinating with Senior Wastewater Technician or Plant Operations Supervisor; or
 - Requesting additional Plant Maintenance resources as required.
3. Determine the infrastructure configuration and the necessary investigation points to be evaluated, such as upstream and downstream manholes (minimum of two (2) in both directions) or upstream and downstream WWTP unit processes, and other potential problem areas using GIS maps as needed.
4. Determine the total impacted area and assess the necessary remediation techniques or practices needed by taking the following actions:
 - Outlining the impacted area;
 - Determining what environmental impacts and potential hazards to public health are present;
 - Evaluating the following factors, at a minimum:

Streams and creeks; stormwater infrastructure, private property; and public health, safety, and accessibility; and
 - Coordinating with plant operations personnel or Senior Wastewater Technician

5. Establish an initial containment or control zone around the impacted area (See Section 3.4.2, SSO Containment for detail) by taking the following actions:
 - Determining the number of barricades to distribute based on the size of the area impacted and best judgment;
 - Using appropriate signs and barricading practices around the perimeter of the impacted area to limit public access and warning public of potential health hazards;
 - Coordinating with Senior Wastewater Technician; and
 - Requesting additional sewer maintenance resources as required.
6. Evaluate and determine additional plant maintenance and/or sewer maintenance resources needed.
7. Request guidance and development of action plans from Wastewater Manager, Assistant Wastewater Manager, and Chief Engineer as needed for unusual situations to ensure goals of SORP are addressed.
8. Assist with site clean-up and remediation as needed.
9. Prepare or assist in the preparation of SSO reports, activity sheets, GIS maps, and work orders related to SSOs including before, during, and after photos and/or videos of the event and ensure that the information required to report the SSO will be provided within the specified time to appropriate agencies.
10. Assists, as required, the Senior Wastewater Technician with inspection of site to ensure that provision of SORP and other directives are met.

C. Cleanup and Remediation Resources - SOP for Pump Stations or WWTP Response

1. WWTa will follow response procedures outlined above and use its available resources to correct, contain, and clean up SSOs. The following resources will be made available as needed:
 - Trained personnel;
 - Excavation equipment, track hoes, backhoes, etc.;
 - Combination cleaner/flushing equipment;
 - Closed circuit television equipment;
 - By-pass pumping equipment;
 - Other materials, such as sand bags, silt fences, lime, signs, hand tools etc.;

- Portable generators; and
- External specialty contractors.

3.3.4 Responses at Building Backups

A. General - SOP for Building Backup Responses

1. Building backups occur when wastewater backs up into buildings as the result of blockages or flow conditions in the collection system. A wastewater backup into a building that is caused by a blockage or other malfunction in a private service lateral is not classified as a building backup and the building owner will be responsible for any cleanup. Repairs to the private service lateral may be covered under the WWTAs Private Service Lateral Program (PSLP) if performed by a pre-qualified plumbing contractor.
2. The First Responders for SSOs in the collection system are typically the Senior Wastewater Technician or their designated Resident Project Representative. They will initiate the field response per this SORP.
3. The focus is to resolve the problem. The response crews should use discretion in assisting the property owner/occupant. Be aware that the WWTAs could face increased liability for any further damages inflicted to the private property during such assistance.

B. Procedure Steps - SOP for Building Backup Responses

Once on site of the building backup related SSO, the First Responder will:

1. Identify and isolate the cause of the building backup related SSO (See Section 3.4.1 - Responsibilities upon Arrival for detail); usually, the causes can be identified as the following:
 - Pipe blockages from grease, roots or debris;
 - Pipe breaks; or
 - Capacity issues.
2. Attempt to correct the problem by taking the following actions:
 - Inspecting flow in WWTAs owned portion of the sewer pipeline in the street or right-of-way upstream and downstream of private lateral connection for free flowing condition;
 - Examining the cleanout on the customer's private lateral, if available, to inspect flow in private service laterals;
 - Dye testing (with customer permission) of private lateral lines;

- Removing any blockages in the WWTA sewer pipeline in the street or right-of-way by hydraulic cleaning;
 - Inspecting WWTA sewer pipeline in street or right-of-way and private lateral connection with CCTV;
 - Coordinating with Senior Wastewater Technician; or
 - Requesting additional sewer maintenance resources as required.
3. Confirm that the building backup is not a result of private lateral blockage or malfunction. Conditions that may indicate a private service lateral issue include, but are not limited to the following:
- Free-flowing conditions upstream and downstream of customer's private lateral connection before hydraulic line cleaning in WWTA sewer pipeline;
 - Stagnant with little or no flow conditions observed in private lateral after clean out cap is removed for inspection after WWTA sewer pipeline cleaning;
 - Little or no dye appearing in private lateral at the clean-out or in the WWTA sewer pipeline;
 - CCTV inspection of WWTA sewer pipeline indicates no damaged pipe or blockages; and
 - CCTV inspection of customer's private service lateral connection indicates no flow or damaged condition.
4. If the SSO is determined to be caused by the private party, take the following steps:
- Notify Senior Wastewater Technician of findings.
 - Notify customer that problem is in the customer's plumbing or private lateral service line. If the customer disputes that the backup is caused by a blockage or other malfunction of a private lateral, see section 3.3.4.D for dispute resolution steps.
 - Prepare or assist in the preparation of SSO reports, activity sheets, GIS maps, and work orders related to SSOs including before, during, and after photos and/or videos of the event.
 - Assist, as required, the Senior Wastewater Technician with the final inspection of the site to ensure that provisions of this SORP and other directives are met.
5. If the SSO is confirmed to be a building backup, caused by the main sewer system, take the following steps:

- Notify Senior Wastewater Technician of findings.
 - Senior Wastewater Technician notifies Executive Director and Chief Engineer of findings and initiates a call to the Independent Claim Adjuster. The Claim Adjuster evaluates the damage with the respective property owner for possible building cleanup. Building cleanup is further specified in section 3.3.4.C.
 - If any public property is involved, determine the infrastructure configuration and the necessary investigation points to be evaluated, such as upstream and downstream manholes (minimum of two (2) in both directions) and other potential problem areas using GIS maps of the collection system.
 - If any public property is involved, determine the total impacted area and assess the necessary remediation techniques or practices needed by taking the following actions:
 - Outlining the impacted area;
 - Determining what environmental impacts and potential hazards to public health are present;
 - Evaluating the following factors, at a minimum, streams and creeks, stormwater infrastructure, private property, and public health, safety, and accessibility;
 - Coordinating with Senior Wastewater Technician and requesting additional sewer maintenance resources as required.
6. If any public property is involved, establish a control zone around the impacted area (See Section 3.4.2, SSO or CSO Containment for detail), by taking the following steps:
- Using appropriate signs and barricading practices around the perimeter of the impacted area to limit public access and warning public of potential health hazards;
 - Determining the number of barricades to distribute based the size of the area impacted and best judgment;
 - Coordinating with the Senior Wastewater Technician;
 - Requesting additional sewer maintenance resources as required; and
 - Evaluate and determine any additional sewer maintenance resources needed;
7. If any public property is involved, take the following additional steps:
- Request guidance and development of action plans from Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, Chief Engineer, and Executive Director as needed to ensure goals of SORP are addressed;
 - Assist with site clean-up and remediation as needed;

- Prepare or assist in the preparation of SSO reports, activity sheets, GIS maps, and work orders including before and after pictures of the event; and
- Assist, as required, the Senior Wastewater Technician with the final inspection of the site to ensure that provisions of this SORP and other directives are met.

C. Cleanup and Remediation Resources - SOP for Building Backup Responses

1. The WWTa will follow the response procedures outlined above and use its available resources to correct, contain, and clean up SSOs. For building backups, independent cleaning and restoration contractors are used to assist in cleaning, sanitizing and repairing damages caused by the building backup. The Independent Claim Adjuster will manage the building backup claim. If it is determined to be appropriate, the Independent Claim Adjuster will ensure that damaged areas of private or public property are properly sanitized and repaired, including the removal and replacement of contaminated materials, such as carpeting, drywall and other property as needed. The WWTa will make available any additional personnel, material, supplies, equipment or crews needed for cleaning the outside of the building backup (See 3.4.5 SSO Site Cleanup or Remediation Practices for details).

The WWTa also:

- Will either reimburse the property owner or pay for the cost for cleaning, disinfecting, and any necessary structural repairs after an SSO event, via the Independent Claim Adjuster on a case-by-case basis;
 - Works very closely with the Independent Claim Adjuster concerning each customer to address losses and damage on a case by-case basis;
 - Provide an Independent Claim Adjuster to coordinate work tasks between WWTa work crews and the independent contractors while keeping the customer informed of progress.
2. The following resources are available as needed to clean up public property:
 - Trained personnel;
 - Excavation equipment, track hoes, backhoes, etc.;
 - Combination cleaner/flushing equipment;
 - Closed circuit television equipment;
 - By-pass pumping equipment;
 - Other materials, such as sand bags, silt fences, lime, signs, etc.; and

- External specialty contractors.

D. Dispute Resolution for Private Lateral Backups

Consistent with the Sewer Use Ordinance and WWTa policies and procedures, the customer owns the service line from the WWTa sewer main to the structure served. If the service lateral has not previously been repaired under the PSLP program, the customer is responsible for all cleanup costs associated with the blockage. The gravity portion of the service lateral may be repaired or replaced under the PSLP program by a pre-qualified plumbing contractor. If a customer disputes the determination that the backup is caused by a private sewer lateral blockage or malfunction, the following process will be followed to resolve the dispute:

1. The Wastewater Manager and Assistant Wastewater Manager will be notified of the dispute, and all materials resulting in the determination of a private lateral issue, including photographs, CCTV video, inspection reports and/or dye testing results, will be provided to the Wastewater Manager, Assistant Wastewater Manager and Chief Engineer for review.
2. The Wastewater Manager, Assistant Wastewater Manager, and Chief Engineer will review the materials, and will determine if the results of the site investigations are accurate. Using professional experience, the Wastewater Manager and Assistant Wastewater Manager will determine if the customer's private lateral or the WWTa's portion of the collection system is the source of the backup and confirm with the Chief Engineer.
3. If the Wastewater Manager, Assistant Wastewater Manager, and Chief Engineer confirms that the backup is the customer's responsibility, the results of the investigation will be provided to the customer. At this point the customer will be advised that they are responsible for all cleanup costs and that their service lateral may be repaired or replaced under the PSLP program.
4. If the customer further disputes the determination by the WWTa that a building backup is due to a private lateral blockage or malfunction, then the customer may appeal to the Executive Director of WWTa, who will bring the appeal before the Variance Committee of the Board of Commissioners for the WWTa.

3.3.5 Responses to Hazardous Substance

A. General - SOP for Hazardous Substance Response

1. Although infrequent, it is possible to have SSOs involving a hazardous substance which would tend to occur in the industrialized or commercial areas of the collection system. They may also result from an illicit discharge or spills. These are typically identified when there is a foamy or oily sheen or uncommon odor in the collection system.
2. The First Responders for SSOs will initiate the field response per this SORP.

B. Response for Hazardous Waste Events- SOP for Hazardous Substance Response

Once on the site of SSO, the First Responder will take the following actions:

1. Note the appearance and odors of the wastewater on the ground or being discharged from the SSO. If suspicious or uncommon to the collection, they will immediately contact Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, and/or Chief Engineer.
2. Until the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, or Chief Engineer arrives to investigate they will take no further action. They will assist the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, or Chief Engineer with site investigations to determine if a call to the municipal fire department or Hazardous Materials Response Unit (HAZMAT) is warranted.
3. If considered to be a serious problem, the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, or the Chief Engineer will contact the Fire Department (FD) of the local municipality to dispatch its HAZMAT team.
4. Standby until arrival of local HAZMAT team.
5. Upon arrival of the HAZMAT response team, the First Responder or crew will take direction from the Incident Commander of that team.
6. Provide support to HAZMAT team as required.
7. Once the HAZMAT Incident Commander determines the site is safe and appropriate for the First Responder and crew to proceed, proceed with response procedure outlined in Section 3.3.2 Response at Collection System.

3.3.6 Responses for Fish Kill

A. General - SOP for Fish Kill Response

1. Although infrequent, it is possible for an SSO to cause a fish kill. SSOs involving these events will generally occur in areas of the collection system along streams, ponds, or sloughs. The fish kills normally are the result of oxygen depletion in these areas. They may occur as the result of SSOs in the collection system or from pump stations.
2. The First Responders for SSOs will initiate the field response per this SORP.

B. Response to Fish Kill Events - SOP for Fish Kill Response

Once on site of the SSO, the First Responder will

1. Identify nearby potential waterways or water bodies adjacent to the SSO location.

2. Note the appearance of water surfaces. If floating dead fish and wastewater debris from the collection system are apparent, immediately contact the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, and/or Chief Engineer for site investigation and further guidance.
3. Take no further action and assist the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, and Chief Engineer with site investigation and determination to call or contact TDEC or the Tennessee Wildlife Resources Agency (TWRA).
4. Identify and isolate the cause of the SSO, usually one of the following:
 - Pipe blockages due to grease, roots or debris;
 - Pipe breaks;
 - Capacity issues;
 - Loss of power; or
 - Failure of a critical mechanical or electrical component.
5. Attempt to correct the problem by
 - Removing the blockage;
 - Performing point repairs to the pipe;
 - Utilizing bypass pumping as appropriate
 - Contacting other Senior Wastewater Technicians to evaluate shutting off an upstream pump station if the SSO involves a force main;
 - Restoring power;
 - Applying a redundant power supply;
 - Placing a standby pump in service; or
 - Utilizing portable pumping equipment.
6. Assist the Senior Wastewater Technician with a determination of the cause of the fish kill and the extent of the fish kill (number, species, etc.).
7. Assist, as required, with coordination of TDEC and TWRA on site until their investigation is complete.

8. Once TDEC and TWRA determines it is appropriate for the First Responder and crew to proceed, then proceed with response procedure outlined in Section 3.3.2 Response for Collection System and Section 3.3.3 Response for Pump Station, CSOTF or WWTP.

3.3.7 Wet Weather Procedures

A. General - SOP for Wet Weather Procedures

1. SSOs may occur during significant rainfall events and from flooding of creeks and streams within the collection system area. Generally these SSOs are the result of excessive I/I. These SSOs are generally the responsibility of the Senior Wastewater Technician and generally appear on the “Hot Spot” list of sites to be checked during rainfall events.
2. During Wet Weather SSOs, the volume of the discharge can exceed the ability of the field crews to successfully contain. For example, containment might not be practical during an intense rain event with a high volume of discharge.
3. The First Responders for SSOs will initiate the field response per this SORP.

B. Response for Wet Weather Events - SOP for Wet Weather Procedures

Once on site of the SSO, the First Responder will:

1. Identify and isolate the cause of the SSO (See Section 3.4.1 - Responsibilities on Arrival for detail), usually one of the following:
 - Pipe blockages from grease, roots or debris;
 - Pipe breaks; or
 - Capacity issues.
 - Note any presence of potential for the release of hazardous substances or the potential for a fish kill.
2. Attempt to correct the problem by requesting additional sewer maintenance resources for:
 - Removing of the blockage,
 - Initiating point repairs to the pipe,
 - Utilizing of bypass pumping,
 - Contacting the Senior Wastewater Technician to evaluate shutting off an upstream pump station if the SSO involves a force main,
 - Coordinating with the Senior Wastewater Technician, and

- Requesting additional sewer maintenance resources as required.
3. Determine the infrastructure configuration and the necessary investigation points to be evaluated, such as upstream and downstream manholes (minimum of two (2) in both directions) and other potential problem areas using GIS maps of the collection system.
 4. Determine the total impacted area and assess the necessary remediation techniques or practices needed by taking the following actions:
 - Outlining the impacted area;
 - Determining what environmental impacts and potential hazards to public health are present;
 - Evaluating the following factors, at a minimum:
 - Streams and creeks;
 - Stormwater infrastructure;
 - Private property; and
 - Public health, safety, and accessibility; and
 - Coordinating with the Senior Wastewater Technician.
 5. Establish an initial containment area and control zone around the impacted area (See Section 3.4.2, SSO Containment for detail) by taking the following actions:
 - Using appropriate signs and barricading practices around the perimeter of the impacted area to limit public access and warning public of potential health hazard;
 - Determining the number of barricades to distribute based on the size of the area impacted and best judgment;
 - Coordinating with the Senior Wastewater Technician; and
 - Requesting additional sewer maintenance resources as required.
 6. Evaluate, determine, and coordinate with Senior Wastewater Technician about additional sewer maintenance resources needed to correct, contain, and remediate SSO location.
 7. Request guidance and development of action plans from the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager or Chief Engineer as needed to meet the goals of the SORP.
 8. Assist with site clean-up and remediation as needed.

9. Prepare or assist in the preparation of SSO reports, activity sheets, GIS maps and work orders including before, during, and after photos and/or videos of the event and the information necessary to complete the SSO Report and provide it to the appropriate agencies in a timely manner.
10. Assists, as required, the Senior Wastewater Technician with the final inspection of the SSO location to meet the goals of the SORP.

C. Cleanup and Remediation Resources - SOP for Wet Weather Procedures

1. The WWTa will follow the response procedures outlined above and use its available resources to correct, contain, and clean up SSOs. The WWTa will make available necessary additional personnel, material, supplies, equipment and crews working at the site of an SSO (See 3.4.4 SSO Site Cleanup or Remediation Practices for detail).

The following resources are available as needed:

- Trained personnel;
- Excavation equipment, track hoes, backhoes, etc.;
- Combination cleaner/flushing equipment;
- Closed circuit television equipment;
- Bypass pumping equipment;
- Other materials, such as sand bags, silt fences, lime, signs, hand tools etc.; and
- External specialty contractors.

3.4 SSO Correction, Containment and Cleanup

3.4.1 General

When responding to SSOs, temporary actions should be taken to divert flows, to repair the collection system, and to restore it to normal operation without leading to negative effects elsewhere in the system. For example, repairing a force main could require the temporary shutdown of a pump station and diversion of the flow at an upstream location. If not handled properly, backups upstream of the pump station may create other SSOs. Under most circumstances, the WWTa will handle response actions with its own maintenance forces. WWTa personnel have the experience and skills necessary to respond rapidly and in the most appropriate manner. Circumstance may arise, however, when internal field crews will benefit from the support of private sector construction assistance, and the WWTa will use private sector assistance under these circumstances. The WWTa may also choose to use private contractors for open excavation operations that may exceed one (1) day to complete.

3.4.2 Responsibilities Upon Arrival

The goal of the First Responder that arrives at the site of an SSO is to protect the health and safety of the public by mitigating the impact of the SSO to the greatest extent possible. Should the SSO not be the responsibility of the WWTa, but poses an imminent danger to public health, public, or private property or to the quality of waters of the State or of the United States, then prudent emergency action will be taken until the responsible party assumes responsibility and takes appropriate action.

Upon arrival at a SSO location, WWTa personnel should take the following actions:

1. Determine the cause of the SSO (e.g., sewer line blockage, pump station mechanical or electrical failure, sewer line break, etc.);
2. Identify and request assistance or additional resources, personnel, materials, supplies or equipment that will expedite and minimize the impact of the SSO, correct the SSO and assist in the determination of the cause;
3. Determine if private property is impacted; and
4. Take immediate steps to stop the SSO (e.g., relieve pipeline blockage, manually operate pump station controls, repair pipe, etc.); and
5. Initiate the generation of an SSO Report (See Appendix B-3 for the SSO Report).

3.4.3 SSO Containment

Upon arrival at an SSO location, ISS personnel should initiate measures to contain the overflowing wastewater and recover, where possible, wastewater which has already been discharged, to minimize the impact to public health or the environment, including the following:

1. Determine the immediate destination of the SSO (storm drain, street curb gutter, body of water, creek bed, etc.);
2. Identify and request the necessary materials and equipment to contain or isolate the SSO, if not readily available; and
3. Take immediate steps to contain the SSO (e.g., block or bag storm drains, recover through vacuum truck, divert into downstream manhole, etc.).
4. When the First Responder identifies the area impacted by the SSO, the next step of the initial overflow response stage is to develop and implement a control zone around the contaminated area.
5. The First Responders should use best judgment in determining the number of barricades to distribute and the decision will depend on the size of the area affected.

6. Using appropriate signs and barricading practices to establish the containment area or control zone will help prevent public access to the contaminated area, the purpose of the containment area or control zone is to warn those who may enter the areas of potential health hazards associated with contact with SSOs.

3.4.4 Additional Measures under Prolonged SSO Conditions

Where possible, flow diversion techniques provide an effective means of conveying an SSO discharge back into the collection system. This procedure reduces additional potential impact on the immediate area and possible impact downstream. The flow diversion techniques employed by the WWTa shall, when practicable include, but not be limited to, the following:

Bypassing measures - Portable bypass pumps can be used in certain situations to collect wastewater from the environment and convey it back into the collection system beyond the disruption of service point. This method is most effective in bypassing a single identified problem area when the discharge can be directed to the next downstream manhole. Bypassing may not be appropriate in wet weather overflows. This type of equipment can be used in conjunction with other containment measures or may be used independently.

Combination cleaner/flusher measures - Combination cleaner/flusher equipment provides an additional resource for collecting discharged wastewater and conveying it back into the collection system beyond the disruption of service point. This equipment can be used in certain situations in conjunction with other containment measures or may be used independently. Like portable bypass pumps, this equipment may not be effective in wet weather situations.

In the event of a prolonged sewer line blockage or a sewer line collapse, a determination should be made to set up a portable bypass pumping operation around the obstruction, which may include the following:

- Appropriate measures will be taken to determine the proper size and number of pumps required to effectively handle the wastewater flow;
- Continuous or periodic monitoring of the bypass pumping operation will be implemented, as required; and
- Notification of and consultation with the appropriate regulatory agency in conjunction with emergency repairs.

3.4.5 SSO Site Cleanup or Remediation Practices

A. General – SOP for SSO Site Cleanup or Remediation Practices

1. SSO locations should be thoroughly cleaned and remediated after an SSO event. The goal of the cleanup practices is to restore the site to pre-event conditions. One or more of the practices may be required, depending on the size and duration of the SSO and the area

affected. No readily visible residue (sewage solids, papers, rags, plastics, rubber products, etc.) is to remain.

2. WWTA management and any impacted property owner should be kept informed on the status of the cleanup and remediation.
3. After securing the site of the SSO from public contact, the following cleanup practices will be considered and implemented:

B. Manual Practices – SOP for SSO Site Cleanup or Remediation Practices

1. Manual cleanup techniques may include the use hand tools or flushing of the area with water to remove residue. The following should be considered for manual practices:
 - Hand tools, such as rakes, shovels, brooms, etc., are used to sweep, rake, collect, and remove all visible residue (sewage solids, papers, plastics, rubber products, etc.) originating from the sewer system and properly dispose of it.
 - Unless the wash down water can be safely isolated, collected, vacuumed up, and removed, flushing with water is not advised if the SSO site is anywhere near a stream or ditch with flowing water. Any water used in cleanup should be held to a minimum.
 - When warranted, it may be necessary to remediate the disturbed area by allowing the area to dry, followed by the application of grass seed, fertilizer, and straw.

C. Mechanical Practices – SOP for SSO Site Cleanup or Remediation Practices

1. Mechanical cleanup techniques may include the use of mechanical equipment to remove all impacted substances and properly dispose of them. The following should be considered for mechanical practices:
 - The Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager and Chief Engineer or other designated individuals will direct these practices.
 - Track hoes, backhoes, dump trucks, and other specialized excavating equipment can be used to remove, dispose of, and replace contaminated soil from the SSO location.
 - Combination cleaner/flushers trucks can be used to flush, collect, remove, and dispose of liquid residues from the SSO location.
 - Portable aerators and bypass pumps may be used where complete recovery of wastewater is not practical and where severe oxygen depletion in existing surface water such as ponds and sloughs could be expected. This action should also include the monitoring of dissolved oxygen levels in the surface water until acceptable levels are obtained. This action will be coordinated, if possible, with TDEC.

- Bypass pumps may be used to pump around collapsed lines and point repairs in the collection system and disabled pump stations while repairs are being made. Bypass pumps may be used to pump large areas of ponded wastewater resulting from the event back in to the sewer system.
- When warranted, it may be necessary to remediate the disturbed area by allowing the area to dry, followed by the application of top soil, grass seed, fertilizer, and straw.

D. Disinfection Practices – SOP for SSO Site Cleanup or Remediation Practices

1. Disinfection techniques may include the application of lime or other disinfection and deodorization agents. The following should be considered for disinfection practices:
 - The Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager and Chief Engineer, or other designated individuals will direct these practices.
 - Lime and/or disinfectants will be applied as necessary without excess and will not be applied if the site is anywhere near a stream or ditch with flowing or ponded water.
 - When warranted, it will be necessary to remediate the disturbed area by allowing the area to dry before disinfection, followed by the application of grass seed, fertilizer, and straw.

E. Contracting Practices – SOP for SSO Site Cleanup or Remediation Practices

1. Contracting practices are used to support and supplement WWTa staff during cleanup and remediation of SSO or CSO events. The following should be considered for contracting practices:
 - The Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager, and Chief Engineer, or other designated individuals will direct these practices.
 - Contractors that specialize in building cleaning are under contract with WWTa to clean, disinfect, and/or replace damaged carpet or flooring; to replace and paint damaged drywall and insulation; to clean, disinfect, and/or repair/replace and disinfect damaged plumbing fixtures; and to repair/replace damaged electrical fixtures.
 - Contractors that specialize in landscaping and lawn remediation are available for contracting with the WWTa to repair/replace damaged shrubs, flowers, specialty lawns.
 - Contractors that specialize in hazardous waste cleanup and remediation are available to the WWTa to collect, remove, and dispose of any hazardous or industrial wastes; and to collect, remove, and dispose of any dead fish, floating substances, or debris that might be discharged to surface waters during an SSO event.

- Contractors that have excavating equipment are under contract with the WWTa to support the cleanup and remediation of large areas impacted by the SSO event.

3.5 SSO Related Reports

There are four (4) reports that are used to collect information that may be relevant to SSOs events and are provided in Appendix B. These include the following:

- B-1 Cityworks® Service Request Form / WWTa Complaint Form
- B-2 Cityworks® Work Orders / Overflow Event Form
- B-3 Sewer Overflow Report Sheet

3.5.1 SSO Report

Using information provided by the First Responder an Overflow Event Report (See Appendix B-2) will be completed by the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager or Chief Engineer. The Senior Wastewater Technician will promptly notify TDEC and the Executive Director when the SSO is eliminated. WWTa Administrative Staff will record relevant SSO information and dispatch a First Responder and additional response crews, as needed. A First Responder will confirm the SSO or CSO with the concurrence of the Senior Wastewater Technician. Until verified, the report of a possible spill should not be referred to as a “SSO”. SSO Reports must be kept for a period of 5 years, at a minimum.

Information regarding the SSOs in the SSO Report will include the following:

1. Date
2. Who Reported By
3. Wet Weather or Dry Weather Overflow
4. Time Notified or Dispatched
5. Time Crew Responded
6. Date and approximate Time SSO Started, based on:
 - a. Date and time information received and/or reported to have begun and later substantiated by a First Responder or response crew;
 - b. Visual observation; or
 - c. Pump station and lift station flow charts and other recorded data.
7. Date and Time SSO Stopped
 - a. When the blockage is cleared or flow is controlled or contained; or

- b. The arrival time of the First Responder or response crew, if the SSO stopped between the time it was reported and the time of arrival.
- 8. Date and Time Corrective Action Complete
- 9. Actions Taken to Stop SSO
 - a. Removed blockages
 - b. Cleaned MH or Line
 - c. Repaired Pump Station
 - d. Other
- 10. Approximate Location (Street Address, Watershed, Sub-basin, or Other)
- 11. Approximate Latitude and Longitude
- 12. Source of SSO (MH, Pump station, Main line, Private Service, etc.)
- 13. Manhole ID Number or Asset ID of Facility where SSO Originated
- 14. Destination of Overflow (Stream, Land, House, Etc.)
 - a. Indication whether the SSO reached surface waters, i.e., SSOs where wastewater was observed running to surface waters, or there was obvious indication (e.g., wastewater residue, debris, etc.) that wastewater flowed to surface waters at that location; and
 - b. Indication whether the SSO did not reach surface waters. Guidance in characterizing these SSOs is provided by the following:
 - i. SSOs to covered storm drains (with no public access) where WWTa personnel verify, by inspection, that the entire volume is contained in a sump or impoundment and where complete cleanup occurs leaving no residue.
 - ii. Preplanned or emergency maintenance jobs involving bypass pumping, if accessed by the public, to a bypass channel is restricted and subsequent complete cleanup occurs leaving no residue. (Note: A preplanned bypass under these circumstances will not be considered an overflow unless a spill occurs.); and
 - iii. SSOs where observation or onsite evidence clearly indicates wastewater was retained on land and did not reach surface waters and where complete cleanup occurs leaving no residue.
- 15. Estimated Volume of SSO (Gallons +/-)

- a. An estimation of the rate of an SSO, in gallons per minute (gpm), by direct observations of the SSO; or measurement of an actual SSO from the collection system S. See Appendix B-4 for guidance in estimation of SSO volume.
 - b. Determination of the volume of the SSO by multiplying the duration of the SSO by the overflow rate (when the rate of SSO is known); or when the rate of SSO is not known, investigate the surrounding area for evidence of ponding or other indications of SSO volume.
 - c. Photos and/or videos before, during, and after of the event, when possible.
 - d. Estimation of the volume of the SSO based on observation and photos by the First Responder and calculations by Chief Engineer or his/her designee.
16. Cause of SSO
- a. Blockages due to root, grease, gravel, trash, or defects
 - b. Pump station due to loss of power, electrical failure, mechanical failure, or miscellaneous
 - c. Weather
 - d. Other
17. Actions Taken to Prevent Future SSOs at This Location
- a. Point Repairs
 - b. More Frequent Cleaning
 - c. Rehab Watershed Sewer
 - d. Private Service Lateral Repair Program if Available
 - e. Install Permanent Generators at Pump Station
 - f. Rehab and Update Pumping Stations
 - g. Other
18. Other Information and Data
- a. Date of last SSO at same location within the past five years.
 - b. Identify if SSO(s) Occurred within Last 12 Months at this Location
 - c. Report of Notification of Public or Other Agencies.

- d. Assessment of Likelihood of Impact to Water Quality (if indication that SSO reached surface waters), likelihood of any impact on Public Health.

3.5.2 Cityworks® Work Orders

WWTA uses the Cityworks® software for its Computer Maintenance Management System (CMMS) for tracking and monitoring its plant and sewer maintenance. The CMMS generates work orders and facilitates workflow between sections while keeping a record of activities requested by a particular customer or group of customers. The CMMS maintains records of infrastructure assets and historic repair and maintenance activity performed. The Administrative Staff who dispatches the First Responder and crews begins the work order in Cityworks by filling out a Service Request Form (See Appendix B-1). Should the CMMS be offline or not working correctly, WWTA Staff has access to hard copy Customer Complaint Forms to fill out until the CMMS is back online. Requests received from customers as well as internal requests are entered into CMMS as appropriate. Information including customer name (if given), location, specific problem, and any additional comments that would help in the swift response to the request is recorded. Field communication with the customer is performed as appropriate.

The Administrative Staff will issue Cityworks® Work Orders (See Appendix B-2) at the request of First Responders or the Senior Wastewater Technician, Wastewater Manager, Assistant Wastewater Manager to support the correction, containment and cleanup of any SSO event. The Senior Wastewater Technician will review and ensure that the information provided in the work orders is correct before the work order is closed out.

This information in the Cityworks Work Order is used to assist in addressing the information requirements of the SSO Report (See Appendix B-3).

3.5.3 Activity Sheet

The Area Supervisors for field work crews are required to provide work task summaries of their daily activities via laptop computers mounted within their service vehicles. Depending on the complaint received, most items related to an SSO event are captured in the Service Request Form for the Cityworks Work Order Entry Sheet. The Work Order Activity Sheet provides information on manhours, materials used, and equipment used to address the SSO problem if that particular crew is dispatched to respond to the event. The Activity Sheet is also used by the Senior Wastewater Technician to provide information on Cityworks Work Orders (See Appendix B-2) when it is necessary to dispatch crews to perform emergency work tasks before work orders can be issued.

3.6 SSO Tracking

The frequency and location of SSOs is tracked by the WWTA as part of its CMOM Program. In addition, a database with appropriate GIS mapping is maintained as part of the CMOM Program. Data from the completed Final SSO Report (See Appendix B-3) is entered into the SSO database by the WWTA GIS Technician under the supervision of the Wastewater Manager,

Assistant Wastewater Manger, and Chief Engineer. See Appendix B-2 for an example of an Overflow Event and subsequent GIS mapping of the event.

4.0 Regulatory Agency Notification

The WWTa will provide the following notifications to TDEC in the event of an SSO. The section explains to whom and when various forms of notification should be made, and lists individuals to be contacted. Agency notifications will be performed in parallel with other internal notifications.

4.1 24-hour or Immediate Notification

Using the Overflow Event Work Order (See Appendix B-2), the WWTa Executive Director or his/her designee will record the SSO in spreadsheet format. The WWTa Executive Director or his/her designee will send TDEC an initial electronic SSO Report within 24 hours of a continued SSO. The WWTa Executive Director or his/her designee is responsible for meeting the 24-hour notification requirement, which may be satisfied by oral, e-mail or facsimile notice. WWTa will also be available to reply to any requests for additional information by TDEC.

- TDEC Contact Person: Environmental Specialist, Chattanooga Assistance Center
- TDEC Telephone: 423-634-5700
- TDEC Fax number: (423) 634-6389.
- TDEC Email Address: angela.young@tn.gov
- TDEC Address:

Tennessee Department of Environment & Conservation
Division of Water Resources
5040 McCallie Avenue
Suite 550, 5th Floor State Office Building
Chattanooga, TN 37402

4.2 5-Day Written Report

Using the Overflow Event Work Order, the WWTa Executive Director or his/her designee will prepare the Final SSO Report to the regulatory agencies. This Final SSO Report should also be made available to those desiring additional information or written confirmation. Written notification in a “hard copy” version should be made available within five (5) days. The WWTa Executive Director or his/her designee will mail or e-mail copies of both the Final SSO Report to TDEC. These reports are to be sent to the address above.

4.3 Discharge Monitoring Report (DMR) & Monthly Operating Report (MOR)

The WWTa is required by its NPDES permit to submit to TDEC a Discharge Monitoring Report (DMR) and Monthly Operating Report (MOR) for the Signal Mountain WWTP. These reports must be postmarked by the 15th of the month. The MOR includes a spreadsheet of all reports for SSOs that occurred during the month. This spreadsheet summarizes all of the information

collected for each SSO including the status of any extended ongoing work associated with its correction.

4.4 Other Agency Contact Information

When the Chief Engineer has determined that the SSO will potentially affect or require assistance from the agencies listed below, the WWTa Executive Director or his/her designee will contact these agencies, as necessary:

- Hamilton County Emergency Management Services (423) 209-6900
- Tennessee Emergency Management Agency (800) 262-3300
- TWRA (800) 831-1174
- Fire, Police, Ambulance (Emergency) 911

5.0 Public Advisory Notification

This section describes the actions the WWTa will take, in cooperation with TDEC, to limit public access to areas potentially impacted by SSOs.

5.1 Temporary Signage

The WWTa, in conjunction with TDEC, has primary responsibility for determining when to post notices of polluted surface water bodies or ground surfaces that result from SSOs. The postings do not necessarily prohibit use of recreational areas, unless posted otherwise, but provide a warning of potential public health risks due to wastewater contamination. Posting should be considered for the following:

- Chronic SSO sites (greater than five (5) per calendar year);
- Capacity related SSOs greater than three (3) days;
- Public areas (paths, trails, walkways, etc.) where cleanup and sanitization from a SSO is not yet complete;
- Public access areas downstream of where an SSO entered a water body where cleanup and sanitization is not yet complete.

For any one of the above conditions, personnel will recommend to the Executive Director or his/her designee that he/she posts a confirmed SSO or the likelihood that an SSO will occur. If posting is deemed necessary, TDEC will be notified by the Chief Engineer.

Examples of signs to be posted on barricades at an affected SSO location when necessary to inform the public concerning SSOs at that site are available in Appendix C.

5.2 Other Public Notification

Should the posting of surface water bodies or ground surfaces impacted by an SSO be deemed necessary by the Executive Director or his/her designee, the need for further public notification will also be determined at that time. Notifications shall normally be by the use of notices given news media for immediate publication or airing, or by direct measures such as front door hangers to potentially impacted customers. (See Appendix D-1)

5.3 Media Notification

All phone calls from the media received by the WWTa personnel, concerning SSOs shall be transferred to the Executive Director of WWTa or his/her designee. When an SSO has been confirmed and is a threat to public health, the following actions should be taken to notify the media:

- The Executive Director will notify the Chief Engineer or his/her designee who will be the "first-line" of response to the media for SSO reporting; or

- If an SSO occurs that is believed to threaten public health occurs after normal office hours or during the weekend, the Executive Director of WWTa or his/her designee will be contacted. Only the Executive Director of WWTa or his/her designee is authorized to be interviewed by the news media. The Executive Director of WWTa or his/her designee will be considered the designated spokesperson for the WWTa in cases of SSO reporting. A sample Press Release, found in Appendix D, may be used when necessary to release statements to the public concerning SSO events.

6.0 Distribution and Maintenance of SORP

6.1 SORP Submittal and Availability

Controlled copies of the SORP and amendments will be distributed to the following WWTa sections and/or functional positions:

- Executive Director
- Chief Engineer
- Wastewater Manager
- Assistant Wastewater Manager
- Administrative Coordinator
- Senior Wastewater Technicians
- Wastewater Technicians

Other personnel who may become incidentally involved in responding to overflows should also become familiar with the SORP.

6.2 SORP Review and Update

The SORP will be reviewed annually and amended as appropriate in July of each calendar year. The WWTa will:

- Update the SORP with the issuance of a revised or new NPDES permit;
- Conduct annual training sessions with appropriate personnel; and
- Review and update, as needed, the various contact person lists included in the SORP.

Those involved with the annual review will include:

- Executive Director
- Chief Engineer
- Wastewater Manager
- Assistant Wastewater Manager
- Administrative Coordinator
- Senior Wastewater Technicians

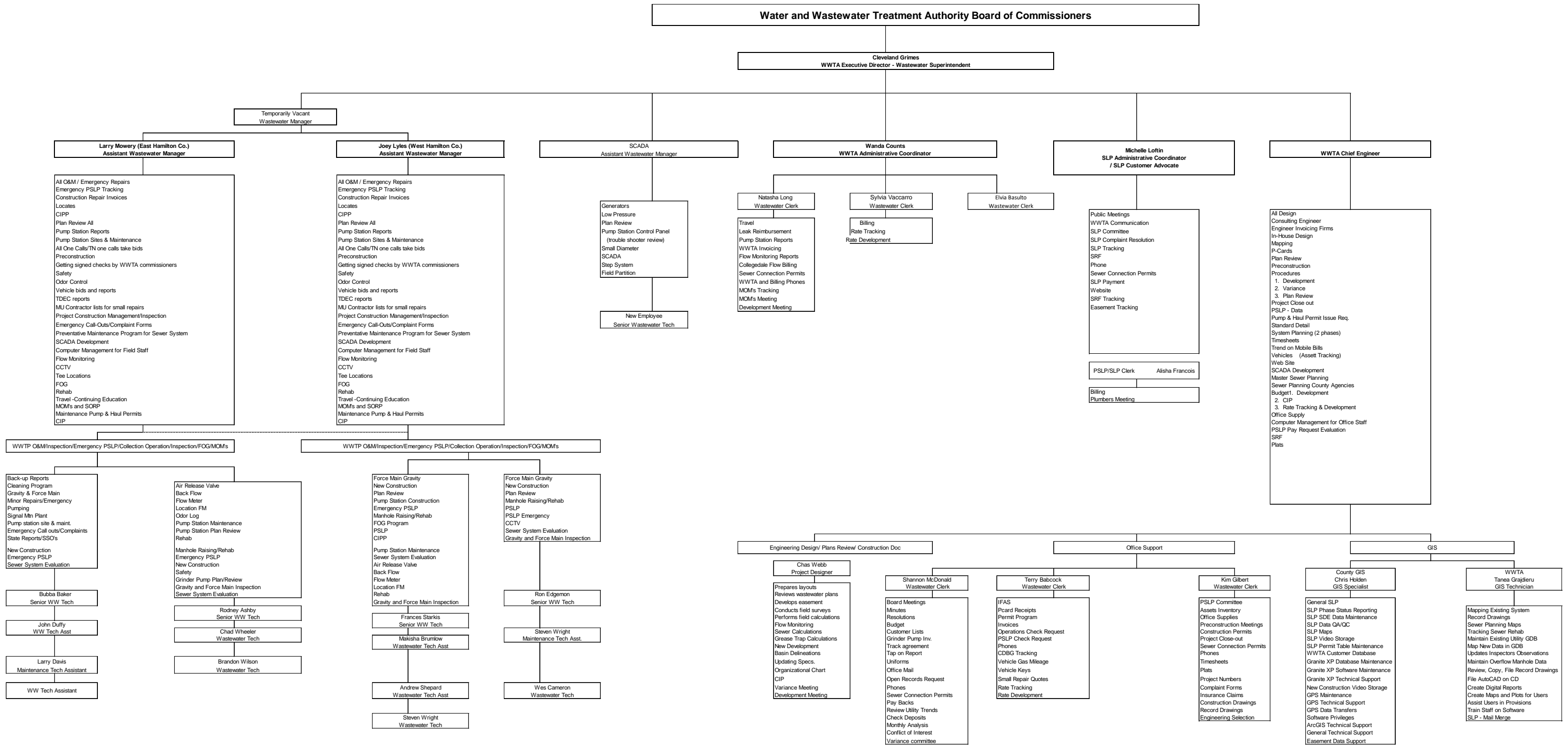
6.3 Training

The WWTa management staff will conduct training for the appropriate Administrative Staff, First Responders, Area Supervisors, field crews, and WWTa support staff to ensure their compliance with this SORP. These training sessions will be organized based on the latest version of the SORP, as well as other pertinent reference materials, and will review the proper procedures for investigating and responding to SSOs, including proper cleanup and remediation techniques. Training sessions will consist of classroom style learning and be supplemented with a practical hands-on field component so that all response personnel are prepared for responding to SSOs. SSO volume estimation practices will also be reviewed using the materials and examples in Appendix B-4, as well as photographs and scenarios from recent local events. Each method of SSO volume estimation described in Appendix B-4 will be reviewed and examples given to ensure that first responders know when to apply each method. WWTa supervision will conduct refresher sessions annually or when any revisions are made to the SORP.

The Chief Engineer, Wastewater Manager, Assistant Wastewater Manager, and Senior Wastewater Technicians oversee the SORP implementation and field operations to ensure that the established procedures are being followed.

APPENDIX A

A-1 – WWTa Organization Chart – Functional Areas



APPENDIX B

B-1 – Cityworks® Service Request (Blank)

SR #54538 Locate I

mapsdev.hamiltonn.gov/Cityworks-Prod/Default.aspx

Cityworks Inbox New Request New Work Order Projects Reports GIS Search

Request View Save New Close Delete

Service Request

Description: Locate location of sewer line

Request Id: 54538

Category: SEWER Priority: Low

Status: In Progress

Initiated By: GRAJDERU, TANEA Date: 9/2/2014 9:05 AM

Investigation: ☐ Date:

Emergency: ☐ WO Needed: ☐

Submit To: Date:

Dispatch To: Date:

Project Name: Prj. Comp. Date:

Project Tree

Date:

Cancel Reason: Cancelled By:

Closed By: Date:

New Comments:

Select

Existing Comments:

Resolution:

Incident Information

Address:

Apt #: City:

State: Zip Code:

Landmark:

Shop: Tile No:

Map Page: District:

Location:

Details:

X: Y:

Custom Fields

Category:

Callers

Last Name	First Name	M.I.	Call Time	Caller T
UNKNOWN			9/2/2014 9:05:19 AM	

New Request From Caller

Related Work Activities

Inspections

Add:

Create

Work Orders

Add:

Create

Attachments

+ Add attachments... Remove all attachments

Drag and drop files here to attach them.

Permit

Create

B-1 – Customer Complaint Form (Blank)
(Backup Form for Cityworks® Service Request Form)

**HAMILTON COUNTY WWTA
COMPLAINT FORM**

NAME OF COMPLAINANT : _____

MAILING ADDRESS: _____

PHONE NO. _____

NATURE OF COMPLAINT: _____

LOCATION: _____

OTHER INFORMATION : _____

NAME OF PERSON TAKING INFO: _____

DATE: _____

TIME: _____

DISPOSITION

PSLP no _____ yes _____ PSLP# _____

DEPARTMENT: WWTA TIME: _____

DATE: _____ SIGNATURE: _____

B-2 – Cityworks® Overflow Event Form (Example)

Cityworks® Work Order Form (Example)

WO #57126 Manhole

mapsdev.hamiltontn.gov/Cityworks-Prod/Default.aspx

Cityworks® Inboxes New Request New Work Order Projects Reports GIS Search

Work Order View Save Close Delete

Work Order

Description: Manhole Overflow Event

Number: 57126

Entity Type: SMANHOLE

Category:

Initiated By: GRAJDIERU, TANEA Date: 1/23/2014 3:48 PM

Status: In Progress Priority: High

Requested By: Baker, Eugene Supervisor:

Submit To: Baker, Eugene Date: 1/23/2014 3:49 PM

Projected Start: 1/23/2014 9:02 AM Projected Finish: 1/25/2014 3:48 PM

Opened By: Date:

Closed By: Date:

Completed By: GRAJDIERU, TANEA

Actual Start: 1/23/2014 9:00 AM Actual Finish: 1/23/2014 11:00 AM

Stage: Actual Expense Type: Maintenance

Add Comments:

Select

Existing Comments:

Instructions:

Resolution: Reactive? ☐

Location Information

WO Address:

Location Details:

Shop: Map Page:

Title Number: District:

X Location: 2,198,111.16 Y Location: 243,343.34

Assets

Type	Id	EntitySid	Legacy Id	Warranty Date	Location	Work Com
SMANHOLE	1220	2995				

- Pink rows indicate inventory still under warranty.

Tasks

SeqID	Name	Description	Status	Proceed	Rework	Assign
1	INSPECT MANHOLE	Inspect manhole	CURRENT	False	False	

Work Cycle

Repeat: Never

Interval: 6 Months

From: Actual Finish Date

Date Printed: Next Print Date: 1/27/2014

Related Work Activities

Service Requests

Add:

Inspections

Add:

Work Orders

Parent:

Create

Permits

Create

Attachments

Add attachments... Remove all attachments

Drag and drop files here to attach them.

Custom Fields

Category: Manhole Overflow Events

OVERFLOW START: 1/23/2014

OVERFLOW END: 1/23/2014

TOTAL EST GALLONS: 6,000

REPSTATUS: Cleared by WWTA

REASON: Debris in Line

Custom Category

Details

Project: Account:

Project Tree

Contract: Contractor:

Legal Billable: Contractor Billable:

Update Map: Cancel Work Order:

Cancelled By: Date:

Cancel Reason:

Units Accom: Description:

Lock Units Desc:

Labor Cost: \$0.00 Material Cost: \$0.00

Equipment Cost: \$0.00 Permit Cost: \$0.00

Total WO Cost: \$0.00

B-2 – Cityworks® Overflow Event Map (Example)



B-3 – Sewer Overflow Report (Example)

<h1>Sewer Overflows</h1>					
Area Info: East Ridge Tn. January 2014					
Start Time	End Time	Location	Reason	Action Taken	Gallons Overflowed
1/11/14 1:00 PM	1/11/14 2:30 PM	3625 Cherokee Ave MH637	Gravel in Line	Cleared By WWTA	<500
1/23/14 9:00 AM	1/23/14 11:00 AM	1127 McBrien Rd MH1220	Roots	Cleared by WWTA	<6,000
Authorized Signature:				Initials:	

B-4 - Spill Volume Estimating

A variety of approaches exist for the estimation of the volume of a sanitary sewer overflow. This appendix documents the three methods that are most often employed by the City of San Diego. The person preparing the estimate should use the method most appropriate to the sewer overflow in question using the best information available. Every effort should be made to make the best possible estimate of the volume. Assistance from the WWC Engineering Section should be sought for larger sewer overflows.

Method 1 - Eyeball Estimate

The volume of very small spills can be estimated using an “eyeball estimate.” To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to 100 gallons.

Method 2 - Measured Volume

The volume of most small spills can be estimated using this method. The shape, dimensions, and the depth of the spilled wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Step 1: Sketch the shape of the contained sewage

Step 2: Measure or pace off the dimensions.

Step 3: Measure the depth at several locations

Step 4: Convert the dimensions, including depth to feet.

Step 5: Calculate the area using the following formulas:

Rectangle Area = length x width

Circle Area = $0.785 \times D$ (where D is the diameter of the affected area)

Triangle Area = base x height x 0.5

Step 6: Multiply the area times the depth to get cubic feet of volume

Step 7: Multiply the volume by 7.5 to convert the volume from cubic feet to gallons

Method 3 - Duration and Flow Rate

Calculating the volume of spills where it is difficult or impossible to measure the area and depth requires a different approach. In this method a separate estimate is made of the duration of the spill and the flow rate. The methods of estimating duration and flow rate are:

Duration: The duration is the elapsed time from the start time to the time the spill stopped.

Start time is sometimes difficult to establish. Here are some approaches:

- 1) Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported in short order. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
- 2) Changes in flow on a downstream flowmeter can be used to establish the start time. Typically the daily flow peaks are “cut off” or flattened by the loss of flow. This can be identified by comparing hourly flow data, when available.
- 3) Conditions at the spill site change with time. Initially there will be limited deposits of grease and toilet paper. After a few days to a week, the grease forms a light colored residue. After a few weeks to a month the grease turns dark. In both cases the quantity of toilet paper and other materials of sewage origin increase in amount. These changes with time can be used to estimate the start time in the absence of other information.

End time is usually much easier to establish. Field crews on-site observe the “blow down” that occurs when the blockage has been removed. The “blow down” can also be observed in downstream flowmeters.

Flow Rate: The flow rate is the average flow that left the sewer system during the time of the spill. There are three ways to estimate the flow rate:

- 1) San Diego Manhole Flow Rate Chart: This chart shows the sewage flowing from a manhole cover for a variety of flow rates. The observations of the field crew are used to select the approximate flow rate from the chart.
- 2) Flowmeter: Changes in flows in the downstream flowmeters can be used to estimate the flow rate during the spill.
- 3) Estimate based on up-stream connections: Once the location of the spill is known, the number of upstream connections can be determined from the field books. Multiply the number of connections by 200 to 250 gallons per day per connection or 8-10 gallons per hour per connection.

Once duration and flow rate have been estimated, the volume of the spill is the product of the duration in hours or days times the flow rate in gallons per hour or gallons per day.

APPENDIX C

C-1 – SSO Temporary Signage Example

WARNING

This body of water contains elevated levels of fecal (sewage) bacteria.

Contact might increase your risk of illness.

Avoid swimming, wading, or fishing in these waters.

APPENDIX D

D-1 – Press Release Example

Press Release

Hamilton County Water and Wastewater Treatment Authority

(Insert Date)

The sanitary sewer system owned, operated and maintained by the Hamilton County Water and Wastewater Authority (WWTA) has recently experienced an overflow. This overflow occurred at (Insert Approximate Location). The WWTA strives to prevent overflows from occurring and this overflow has been stopped.

Investigative efforts have begun in order to determine the cause of the overflow. If you would like more information regarding this overflow, please contact the WWTA at (423) 209-7808.

APPENDIX F

List of Community Groups

LIST OF COMMUNITY GROUPS

Below is an initial list of community groups that are interested in receiving information about the Consent Decree and the Waste Water Treatment Authority for Hamilton County's progress in completing its obligations under this Consent Decree.

Community Group	Point of Contact	Email Address	Physical Address
green spaces	Michael Walton	michael@greenspaceschattanooga.com	63 E. Main St. Chattanooga, TN 37408
WaterWays	Mary Beth Sutton	marybeth@mywaterways.org	P.O. Box 4437 Chattanooga, TN 37405
Sierra Club	Scott Banbury	smbanbury@gmail.com	P.O. Box 113 Powell, TN 37849
South Chickamauga Creek Greenway Alliance	Sandy Kurtz	SandyKurtz4@gmail.com	
Tennessee Scenic Rivers Association	Sally Bar	sally@paddletsra.org	P.O. Box 159041 Nashville, TN 37215
The Bethlehem Center	Reginald F. Smith, II Executive Director, and Rachel DeVore, Director of Education	rsmith@thebeth.org rdevore@thebeth.org	200 West 38th Street Chattanooga TN, 37410