

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO

UNITED STATES OF AMERICA and)
)
STATE OF OHIO,)
)
)
Plaintiffs,)
)
)
v.)
)
)
)
NORTHEAST OHIO REGIONAL SEWER)
DISTRICT,)
)
)
Defendant)
_____)

Civil Action No. [_____]

CONSENT DECREE

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Plaintiff United States of America, on behalf of the United States Environmental Protection Agency (“EPA”), jointly with Plaintiff the State of Ohio (the “State”), on behalf of the Ohio Environmental Protection Agency (“Ohio EPA”), have filed a complaint in this action concurrently with this Consent Decree, alleging that the Defendant, the Northeast Ohio Regional Sewer District (“NEORS D” or the “District”), violated Section 301(a) of the Clean Water Act (“CWA”), 33 U.S.C. § 1311(a) and of Chapter 6111 of the Ohio Revised Code (“O.R.C.”).

The Complaint against NEORS D alleges that NEORS D discharged pollutants in violation of Section 301(a) of the CWA, 33 U.S.C. § 1311(a), Chapter 6111 of the O.R.C. and the terms and conditions of NEORS D’s National Pollutant Discharge Elimination System (“NPDES”) permits issued to NEORS D in accordance with the provisions of Section 402(a) of the CWA, 33 U.S.C. § 1342, by discharging pollutants in violation of its NPDES permits from Combined Sewer Overflow (“CSO”) outfalls and by discharging wastewater flows that bypassed primary and/or secondary treatment from the outfalls at its Easterly and Southerly Wastewater Treatment Plants (“WWTPs”).

NEORS D denies any liability to the United States or the State arising out of the transactions or occurrences alleged in the Complaints. NEORS D states that it was created in 1972 by an Order of the Cuyahoga County Court of Common Pleas to assume the operation and management of specific wastewater collection, treatment and disposal facilities serving the Cleveland metropolitan area.

NEORS D serves all or part of 62 communities and over one million people in a 350 square-mile tributary area, 80 square miles of which is served by combined sewers. NEORS D is responsible for operation and maintenance of 305 miles of interceptor sewers including 40 miles

of intercommunity relief sewers. The system includes 126 permitted combined sewer overflow outfalls and 26 automated regulators. These facilities were built as early as 1876.

NEORSD is responsible for operation and maintenance of three WWTPs, Easterly, Southerly and Westerly, which were built in 1922, 1928, and 1922 respectively. Improvements to these plants have been made continuously.

NEORSD is also responsible for operation and maintenance of the Combined Sewer Overflow Treatment Facility (CSOTF) located near the Westerly plant, which was constructed in 1983.

NEORSD states that it has invested over \$2.0 billion in facilities and collection system improvements since 1972, and has spent over \$850 million to reduce CSO discharges by nearly 50%.

NEORSD states that between 1972 and 2006, NEORSD constructed the Northwest Interceptor, Cuyahoga Valley Interceptor, Southwest Interceptor and Heights/Hilltop Interceptor. These interceptors have diverted approximately 1.65 billion gallons of sanitary flow out of the combined system directly to the WWTPs.

In addition, NEORSD states that it has taken certain incremental steps to reduce CSO discharges that it believes are in compliance with EPA's CSO Policy. It states that these steps are: (a) NEORSD completed a system-wide CSO Facilities Plan Phase I Study in 1994; (b) Pursuant to its CSO NPDES Permit, NEORSD's CSO Operational Plan was submitted in 1998 and approved by Ohio EPA in 1999; (c) In 1995 NEORSD began developing its CSO Long Term Control Plan, which is embodied in separate Facilities Plans for the Mill Creek, Westerly, Southerly and Easterly sewersheds. Facility planning efforts included interceptor inspection and evaluation, extensive system investigation, mapping and flow monitoring during facilities

planning, and sewer and stream modeling; (d) NEORSD submitted for Ohio EPA approval the Mill Creek and Westerly Facilities Plans in 1999, and the Southerly and Easterly Facilities Plans in 2002; (e) In 2008 NEORSD completed its studies of feasible alternatives to minimize wet weather bypasses at the Southerly and Easterly WWTPs; (f) Implementation of the District's facilities plans has included rehabilitation and early action projects in all three treatment plant service areas. The early action projects have controlled approximately 480 million gallons of CSO; (g) NEORSD has completed construction of the major portion of the Mill Creek Tunnel, which is designed to reduce overflows to Mill Creek by over 500 million gallons per year.

NEORSD states that it has imposed appropriate and necessary rate increases to pay for these efforts. The District states that it has raised rates in 17 out of the last 20 years, in amounts varying from 4.5% to 22.2%, resulting in rate increases during this period of 350%.

NEORSD states that throughout the Long Term Control Plan facilities planning process NEORSD has conducted significant public outreach, including developing a website, producing brochures, communicating with the media, holding public meetings and participating in community events, coordinating beach testing with appropriate agencies, and implementing an overflow notification program. NEORSD states that it has also participated in a number of scientific studies aimed toward development of more rapid water quality testing methods and protocols.

The United States, the State of Ohio, and NEORSD (the "Parties") recognize, and this Court by entering this Consent Decree finds, that this Consent Decree has been negotiated in good faith and will avoid prolonged and complicated litigation among the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

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 I, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. 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 of Ohio pursuant to 28 U.S.C. § 1367. This Court also has personal jurisdiction over the Parties to this action. Venue is proper 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(a) because Defendant is located in this judicial district and the violations alleged in the Complaint are alleged to have occurred in this judicial district. For purposes of this Decree, or any action to enforce this Decree, Defendant consents to the Court's jurisdiction over this Decree and any such action and over Defendant and consents to venue in this judicial district.

2. For purposes of this Consent Decree, Defendant agrees that the Complaint states claims upon which relief may be granted pursuant to Section 301(a) of the CWA, 33 U.S.C. § 1311(a) and Chapter 6111 of the O.R.C.

II. APPLICABILITY

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

4. No transfer of ownership or operation of NEORSD's WWTPs, or its collection system, or any portion of its WWTPs or its collection system, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve NEORSD of its obligation to ensure that the terms of the Decree are implemented. At least 60 Days prior to such transfer, NEORSD 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, to EPA Region 5, the United States Attorney for the Northern District of Ohio, the United States Department of Justice, and the State, in accordance with Section XVII of this Decree (Notices). Any attempt to transfer ownership or operation of any WWTP or any portion thereof, or the collection systems or any portion thereof, without complying with this Paragraph constitutes a violation of this Decree.

5. NEORSD 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 retained to perform work required under this Consent Decree. NEORSD 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, NEORSD shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. OBJECTIVES

7. All plans, reports, construction, remedial maintenance, and other obligations in this Consent Decree or resulting from the activities required by this Consent Decree shall have the objective of causing NEORSD to achieve and maintain full compliance with the terms and

conditions of NEORSD's NPDES Permits, the Clean Water Act, Chapter 6111 of the O.R.C., and the rules and regulations adopted pursuant thereto, and to meet the objectives of EPA's April 19, 1994 "Combined Sewer Overflow (CSO) Policy."

IV. DEFINITIONS

8. The terms used in this Decree that are defined in the Clean Water Act, the regulations promulgated pursuant to the Clean Water Act, Chapter 6111 of the O.R.C. or the rules promulgated under that chapter, shall have the meanings assigned to them in the Clean Water Act, Chapter 6111 of the O.R.C., or such regulations or rules, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

a. "Achievement of Full Operation" shall mean completion of construction and installation of equipment or infrastructure such that the equipment or infrastructure has been placed in full operation, and is expected to both function and perform as designed, plus completion of shakedown and related activities, as well as completion of in-situ modified operations and maintenance manuals. This specifically includes all control systems and instrumentation necessary for normal operations and all residual handling systems. Certain specified CSO Control Measures set forth in Appendix 1 consist of separate components. For those specified CSO Control Measures, "Achievement of Full Operation" shall not be achieved until the last component is completed.

b. "CE HRT" shall mean chemically enhanced high rate treatment, as described further in this Consent Decree and in Appendix 1.

c. "Clean Water Act" or "CWA" shall mean the Federal Water Pollution Control Act found at 33 U.S.C. § 1251 et seq., and the regulations promulgated thereunder.

d. “Collection System” shall mean the municipal wastewater collection and transmission system owned or operated by NEORSD including all pipes, interceptors, force mains, gravity sewer lines, lift stations, pumping stations, manholes and appurtenances thereto designed to collect and convey municipal sewage (domestic, commercial, and industrial) to any of NEORSD’s three WWTPs or to a Combined Sewer Overflow Outfall. “Collection System” includes both NEORSD’s “Combined Sewer System” and its “Sanitary Sewer System.”

e. “Combined Sewer Overflow” or “CSO” shall mean any discharge from NEORSD’s Combined Sewer System at a CSO Outfall designated in NEORSD’s CSO Permit.

f. “Combined Sewer Overflow Policy” or “CSO Policy” shall mean the policy issued by EPA regarding combined sewer overflows, entitled “Combined Sewer Overflow (CSO) Policy,” 59 Fed. Reg. 18,688 (April 19, 1994).

g. “Combined Sewer System” shall mean the portion of NEORSD’s Collection System designed to convey only municipal sewage (domestic, commercial and industrial wastewaters) and stormwater to any of NEORSD’s three WWTPs or to a CSO Outfall.

h. “Completion of the Bidding Process” shall mean NEORSD has: (i) appropriately allocated funds for a specific CSO Control Measure (or portion thereof) or for a project specified in Appendix 1 (or portion thereof); (ii) accepted and awarded the bid for construction of the specific CSO Control Measure or project specified in Appendix 1; and (iii) issued a notice to proceed with construction, which remains in effect for the CSO Control Measure or project specified in Appendix 1.

i. “Consent Decree” or “Decree” shall mean this Decree, all Appendices hereto, and all plans, schedules, reports, memoranda, or other submittals approved by EPA and/or Ohio EPA, as applicable, pursuant to the requirements of this Decree or any Appendix

hereto. In the event of any conflict between the Decree and any Appendix, this Decree shall control.

j. “CSO Control Measures” shall mean the construction, control measures, actions, and other activities set forth in Appendices 1 and 3 or any EPA and Ohio EPA approved modification of those items in Appendices 1 or 3.

k. “CSO Outfall” shall mean an outfall in the Combined Sewer System from which CSOs are discharged. NEORS D’s CSO Outfalls are identified in NEORS D’s CSO Permit as “combined sewer overflows” at Part II.A. in NEORS D’s CSO Permit and are labeled by outfall numbers beginning with 3PA00002001 through 3PA00002127.

l. “Date of Entry” shall mean the date that this Consent Decree is entered by the Clerk of the Court for the United States District Court for the Northern District of Ohio after being signed by a federal district judge.

m. “Date of Lodging” shall mean the date that this Consent Decree is lodged with the Clerk of the Court for the United States District Court for the Northern District of Ohio.

n. “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.

o. “Design Criteria” shall mean the specified minimum attributes of a given project, such as storage volumes, treatment capacities, or pumping, and/or conveyance capacities specified in Appendices 1 and 3 or any EPA and Ohio EPA approved modification of such criteria.

p. “Green Infrastructure” shall mean, for purposes of this Consent Decree, the range of stormwater control measures that use plant/soil systems, permeable pavement, or stormwater harvest and reuse, to store, infiltrate, or evapotranspire stormwater and reduce flows to the combined sewer system. Green infrastructure may include, but is not limited to, bioretention and extended detention wetland areas as well as green roofs and cisterns.

q. “Gray Infrastructure” for purposes of this Consent Decree shall mean engineered structural control practices to control CSO discharges that are not Green Infrastructure as defined in this Decree. Examples of “Gray Infrastructure” include tunnel systems, storage tanks, in-line storage facilities, sewer lines, and pump stations.

r. “NEORSD” or “the District” shall mean the defendant, the Northeast Ohio Regional Sewer District.

s. “NEORSD’s CSO Permit” shall mean Ohio EPA Permit No. 3PA00002*FD issued to NEORSD by Ohio EPA, effective April 1, 1997, issued pursuant to the NPDES permit program, and any succeeding, amended, or renewal permit governing NEORSD’s CSOs.

t. “NEORSD’s Easterly Permit” shall mean Ohio EPA Permit No. 3PF00001*KD, issued to NEORSD by Ohio EPA, effective August 1, 2000, issued pursuant to the NPDES permit program, and any succeeding, amended, or renewal permit governing NEORSD’s Easterly WWTP.

u. “NEORSD’s NPDES Permits” shall mean collectively NEORSD’s CSO, Easterly, Southerly, and Westerly permits.

v. “NEORSD’s Southerly Permit” shall mean Ohio EPA Permit No. 3PF00002*LD, issued to NEORSD by Ohio EPA, effective December 1, 2002, issued pursuant

to the NPDES permit program, and any succeeding, amended, or renewal permit governing NEORSD's Southerly WWTP.

w. "NEORSD's Westerly Permit" shall mean Ohio EPA Permit No. 3PE00001*LD, issued to NEORSD by Ohio EPA, effective August 1, 2000, issued pursuant to the NPDES permit program, and any succeeding, amended, or renewal permit governing NEORSD's Westerly WWTP.

x. "Nine Minimum Controls" or "NMCs" shall mean those controls identified in Section II.B. of EPA's CSO Policy and Part II.B. of NEORSD's CSO Permit.

y. "NPDES" shall mean EPA's National Pollutant Discharge Elimination System permit program established pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1318.

z. "Ohio EPA" shall mean the Ohio Environmental Protection Agency and any successor departments or agencies of the State of Ohio.

aa. "Paragraph" shall mean a provision of this Consent Decree identified by an Arabic number.

bb. "Parties" shall mean the United States, the State of Ohio, and NEORSD.

cc. "Performance Criteria" shall mean the Performance Criteria identified in Paragraph 21 of the Consent Decree and specified in Appendix 1.

dd. "Plaintiffs" shall mean the United States and the State of Ohio.

ee. "Post-Construction Monitoring Program" shall mean the Post-Construction Monitoring Program set forth in Appendix 2.

ff. “Sanitary Sewer System” shall mean the separate portion of the Collection System designed to convey municipal sewage (domestic, commercial, and industrial wastewater) to the WWTP.

gg. “Section” shall mean a portion of this Consent Decree identified by an uppercase Roman number.

hh. “Semi-annual Progress Report” shall mean the reports due on a semi-annual basis under Section IX of this Consent Decree.

ii. “Sensitive Areas” shall mean those areas designated by the NPDES authority in coordination with state and federal agencies, as appropriate, Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters with primary contact recreation, public drinking water intakes or their designated protection areas, and shellfish beds, as set forth in Section II.C.3. of the CSO Policy.

jj. “Six-month Period” shall mean a six-month period ending on June 30 and December 31.

kk. “State” shall mean the State of Ohio, acting on behalf of Ohio EPA.

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

mm. “Unpermitted Discharge” shall mean any discharge from the combined portions of NEORSD’s Collection System at other than a CSO Outfall designated in the CSO permit.

nn. “U.S. EPA” or “EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

oo. “Easterly WWTP” shall mean the Easterly Wastewater Treatment Plant owned and operated by NEORSD located at 14021 Lakeshore Boulevard, Cleveland, Ohio.

pp. “Southerly WWTP” shall mean the Southerly Wastewater Treatment Plant owned and operated by NEORSD and located at 6000 Canal Road, Cleveland, Ohio.

qq. “Westerly WWTP” shall mean the Westerly Wastewater Treatment Plant owned and operated by NEORSD and located at 5800 Cleveland Memorial Shoreway, Cleveland, Ohio.

rr. “WWTP” shall mean a wastewater treatment plant.

V. CIVIL PENALTY

9. Within 30 Days after the Date of Entry, NEORSD shall pay the sum of \$600,000 as a civil penalty to the United States, together with interest accruing from the Date of Entry, at the rate specified in 28 U.S.C. § 1961 as of the Date of Entry.

10. NEORSD shall pay the civil penalty due by FedWire Electronic Funds Transfer (“EFT”) to the U.S. Department of Justice in accordance with written instructions to be provided to NEORSD, following lodging of the Consent Decree, by the Financial Litigation Unit of the U.S. Attorney’s Office for the Northern District of Ohio, 801 West Superior Avenue Suite 400, Cleveland, OH 44113, (216) 622-3600. At the time of payment, NEORSD shall send a copy of the EFT authorization form and the EFT transaction record, together with a transmittal letter, which shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in United States and State of Ohio v. Northeast Ohio Regional Sewer District, and shall reference the civil action number and DOJ case number 90-5-1-1-08177/1, to the United States in accordance with Section XVII of this Decree (Notices); by email to acctsreceivable.CINWD@epa.gov; and by mail to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

11. NEORSD shall not deduct any penalties paid under this Decree pursuant to this Section or Section X (Stipulated Penalties) in calculating its federal, state, or local income tax.

12. Within thirty (30) Days after the Date of Entry, NEORSD shall pay a civil penalty in the amount of \$600,000 to the State of Ohio. Payment will be made by cashier's check or certified funds, payable to "Treasurer, State of Ohio," and will be sent to:

Karen Pierson, Paralegal
Attorney General's Office
Environmental Enforcement Section
30 East Broad St., 25th Floor
Columbus, OH 43215-3400

13. Payment may also be made by electronic funds transfer to the designated accounts pursuant to instructions sent by the State of Ohio upon notice by the State of Ohio. A copy of the check and transmittal letter or other evidence of payment will also be sent to the Ohio Attorney General's Office and Ohio EPA, as provided in Section XVII (Notices).

VI. PERMANENT INJUNCTION AND COMPLIANCE REQUIREMENTS

14. NEORSD shall achieve and maintain full compliance with the terms and conditions of NEORSD's NPDES Permits and the provisions of the Act, 33 U.S.C. § 1281 et seq., and O.R.C. Chapter 6111, and the rules promulgated thereunder in accordance with the compliance program and the schedules set forth below.

15. Nine Minimum Controls. As of the date of lodging of this Decree, NEORSD has implemented the Nine Minimum Controls as described in its report, approved by Ohio EPA, entitled "Combined Sewer Operational Plan" as required by Part II.B. of NEORSD's CSO Permit and as set forth in Section II.B. of the CSO Policy, which include the following:

- a. Proper operation and regular maintenance programs for sewer systems and CSOs;
- b. Maximum use of collection system for storage;
- c. Review and modification of pretreatment requirements to assure CSO impacts are minimized;
- d. Maximization of flow to the POTW for treatment;
- e. Prohibition of CSOs during dry weather;
- f. Control of solid and floatable materials in CSOs;
- g. Pollution prevention;
- h. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts;
- i. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

16. Construction and Implementation of CSO Control Measures.

a. NEORSD shall perform the activities and construct the CSO Control Measures in accordance with the descriptions, Design Criteria, and dates for Completion of the Bidding Process and Achievement of Full Operation for each CSO Control Measure set forth in Appendix 1.

b. NEORSD currently estimates that the costs of implementing the CSO Control Measures set forth in Appendix 1 will be \$2,996,000,000 (in 2009 dollars). The parties have determined that in combination with the additional \$2,251,000,000 in non-CSO related capital costs contained in the District's Capital Improvement Plan, these expenditures constitute a "high burden" on District ratepayers as defined in U.S. EPA's "Combined Sewer Overflows –

Guidance for Financial Capability Assessment and Schedule Development” (February 1997).

Based on these estimated costs, the Parties agree that the schedule for implementing the CSO Control Measures set forth in Appendix 1 is a reasonable and appropriate schedule based on the likelihood that the District’s ratepayers will incur a substantial financial impact.

c. If, following Achievement of Full Operation of any specific CSO Control Measure or CSO Control Measures set forth in Appendix 1, NEORSD needs additional time to implement additional measures necessary to achieve the Performance Criteria pertaining to the specific CSO Control Measure or Measures, NEORSD may submit to EPA and Ohio EPA as a part of its Corrective Action Plan (“CAP”), described in Section 2.4.4. of Appendix 2 to this Consent Decree, a request for an extension of the previously applicable deadline for Achievement of Full Operation for the CSO Control Measure or Measures at issue to allow for implementation of the additional measures set forth in the CAP. EPA and Ohio EPA shall then review the request for extension of time as part of their review of the CAP, as set forth in Section 2.4.4. of Appendix 2. Any extension of the deadline for Achievement of Full Operation for a CSO Control Measure approved by EPA and Ohio EPA under this procedure shall be considered the applicable date for Achievement of Full Operation as set forth in Appendix 1.

17. Post Construction Monitoring. NEORSD shall perform the Post-Construction Monitoring Program set forth in Appendix 2, in accordance with the provisions and schedule set forth therein.

18. Approval and Implementation of CEHRT Pilot Projects.

A. Chemically Enhanced High Rate Treatment Pilot Studies and Implementation.

(1) Purpose of Studies – NEORSD shall perform Chemically-Enhanced High Rate Treatment (“CE HRT”) Pilot Studies, to determine the effectiveness of

treating flows transported during wet weather events to NEORSD's Easterly WWTP, to be discharged from CSO-001; to NEORSD's Southerly WWTP, to be discharged from Southerly's Outfall 002; and to the Combined Sewer Overflow Treatment Facility ("CSOTF") located at NEORSD's Westerly WWTP, to be discharged from the CSOTF Outfall CSO-002. NEORSD shall conduct the pilot studies to determine whether flow that would be treated at the proposed CE HRT facilities at the Easterly, Westerly, and Southerly WWTPs would meet the CE HRT Performance Criteria, set forth below. The studies will also allow the parties to assess the feasibility, cost, and expected performance of the CE HRT systems.

(2) CE HRT Pilot Work Plans - By January 1, 2011, NEORSD shall submit to U.S. EPA and Ohio EPA for review, comment, and approval in accordance with the terms of Paragraph 23 (Approval of Deliverables) of the Consent Decree, work plans (the "CE HRT Pilot Work Plans") to conduct the CE HRT Pilot Studies. The CE HRT Pilot Work Plans shall contain the following elements:

(a) Design Criteria - A description of the facilities to be constructed or otherwise used in the Pilot Study, including the following: (1) the size and configuration of each basin, treatment unit, or other piece of equipment, that will provide CE HRT treatment and disinfection prior to discharge at the Easterly, Southerly, and Westerly WWTPs; (2) plans and section views of the relevant treatment units and the hydraulic and process operating parameters; (3) the anticipated flow pattern through the equipment, including the hardware NEORSD will install to achieve the desired flow pattern; (4) the CE HRT facilities' capacity for treatment (including anticipated pollutant influent concentrations and flow rates, descriptions of the method of chemical enhancement, chemical mixing, flocculation, and sludge removal and handling); and (5) the cost of the improvements to be installed to conduct the Pilot

Study at the Easterly, Southerly, and Westerly WWTPs. NEORSD shall design the facilities to meet the CE HRT Performance Criteria set forth in Subparagraph 2(b) below, except that NEORSD shall design the facilities to meet a concentration of total suspended solids (“TSS”) of 30 mg/l over an average of seven consecutive discharge events.

(b) CE HRT Performance Criteria - A description of the methods NEORSD will use to determine the effectiveness of the study, including the CE HRT post-construction monitoring plan for meeting the following performance criteria on a continuous basis:

(i) A concentration of TSS, calculated as a flow-weighted arithmetic mean and reported as a running average, of no more than 40.0 mg/l over the seven most recent discharge events based upon composite sampling;

(ii) A concentration of E. coli of no more than 126 colony forming units per 100 ml, calculated as a geometric mean for each day in which a discharge occurs for the entire recreational season (May 1 through October 31), based upon a single grab sample per day of discharge;

(iii) A concentration of E. coli of no more than 284 colony forming units per 100 ml, calculated as a rolling geometric mean for each seven-day period (the rolling mean is recalculated each day in which a discharge occurs using the most recent seven days of discharge), based upon a single grab sample per day of discharge; and

(iv) A concentration of total residual chlorine of no more than 0.038 mg/l monitored continuously.

(c) Schedule - A description of the schedule for construction of the equipment to conduct the Pilot Study, milestone dates of construction, and date of submission

of the Pilot Performance Report (described below), consistent with the schedules set forth in Appendix 1 of this Consent Decree.

(3) Upon approval of a CE HRT Pilot Work Plan by U.S.EPA and Ohio EPA, NEORS shall commence design and construction of the CE HRT pilot system to which the CE HRT Pilot Work Plan pertains, complete construction of the pilot, operate the completed pilot system, and conduct post-construction monitoring as set forth in the pertinent CE HRT Work Plan.

(4) CE HRT Pilot Performance Reports – Within 42 months of U.S. EPA’s and Ohio EPA’s approval of the CE HRT Pilot Work Plans for Easterly and for Southerly; and within 54 months of U.S. EPA’s and Ohio EPA’s approval of the CE HRT Pilot Work Plan for Westerly; NEORS shall submit to U.S. EPA and Ohio EPA for review, comment and approval, reports (the “CE HRT Pilot Performance Reports”) that contain the following:

(a) The relevant information and supporting documentation that demonstrates that NEORS performed the CE HRT Pilot Study in accordance with the approved CEHRT Pilot Work Plan;

(b) The results of the study including, but not limited to, an evaluation of whether the CE HRT Pilot at the WWTP pertinent to the study meets all CE HRT Performance Criteria contained in Subparagraph 2(b) for treating wet weather flows in accordance with the approved CE HRT Work Plans;

(c) All operational and performance monitoring data collected during the CE HRT Pilots, provided as attachments; and

(d) An analysis of additional feasible measures identified during the Pilot Study that can be taken to maximize treatment at the CE HRT facilities at the

three WWTPs. The analysis shall: (i) describe in detail such additional or alternative measures to maximize treatment, including the measures' predicted impact on the CE HRT performance; (ii) estimate the capital and operation and maintenance costs of the additional or alternative measures; and (iii) recommend those additional or alternative control measures for NEORSD to construct or install that will allow NEORSD to maximize TSS treatment.

(5) Pilot Results - If the evaluation of the CE HRT Pilot Studies show that the CE HRT meets the Performance Criteria in Subparagraph 2(b) at the Easterly, Westerly, and Southerly locations, NEORSD shall include in the CE HRT Pilot Performance Reports the plans and schedules for construction or completion of CE HRT basins and associated treatment equipment, including the implementation of the additional or alternative measures to maximize treatment recommended in Paragraph 4(d), above, at the Easterly, Westerly, and Southerly WWTPs in accordance with the criteria set forth in Appendix 1 to the Consent Decree.

(6) U.S. EPA and Ohio EPA Review of CE HRT Pilot Performance Reports - The submission of NEORSD's CE HRT Pilot Performance Reports shall be governed by the provisions of Paragraph 23 (Approval of Deliverables) of the Consent Decree, except that within 60 days of receiving comments from U.S. EPA and Ohio EPA, NEORSD shall submit revised CE HRT Pilot Performance Reports that answer and respond fully to U.S. EPA and Ohio EPA's comments. Upon receipt of U.S. EPA and Ohio EPA's final approval of the CE HRT Pilot Performance Reports, as applicable, NEORSD shall complete the construction of the recommended CE HRT systems at the Easterly, Westerly, and Southerly WWTPs in accordance with the approved plans and all schedules contained therein.

(7) If the results of the CE HRT Pilots show that the pilot facilities at the Easterly, Westerly, or Southerly WWTPs do not meet the CE HRT Performance Criteria for

TSS set forth in Subparagraph 2(b), above, and in Appendix 1, NEORS shall, within 60 days of U.S. EPA and Ohio EPA approval of the Pilot Performance Reports, submit an Alternative High Rate Treatment Plan (the “Alternative HRT Plan”), which shall include the plans and schedules for construction or completion of a ballasted flocculation system in place of the CE HRT basins at the pertinent WWTPs corresponding to the particular pilot facility (Easterly upon failure of the Easterly CE HRT, Westerly upon failure of the Westerly CE HRT, and Southerly upon failure of the Southerly CE HRT). The ballasted flocculation systems shall meet the design criteria and time deadlines set forth in Appendix 1, and, in the case of the Easterly and Southerly WWTPs, achieve a performance standard for TSS of 30.0 mg/l over an average of seven consecutive discharge events. NEORS shall also include with the Alternative HRT Plan a description of the additional monitoring needed to assess the operation of the ballasted flocculation systems, including an analysis as to whether NEORS has achieved the TSS design and performance standards for the ballasted flocculation systems at the Easterly and Southerly plants, and a schedule for performing such monitoring. U.S. EPA and Ohio EPA’s review of the Alternative HRT Plan shall be governed in accordance with the provisions of Paragraph 23 (Approval of Deliverables) of the Consent Decree.

(8) If the results of the CE HRT Pilot Studies show that the pilot facilities at the Easterly, Southerly or Westerly location do not meet the CE HRT Performance Criteria for E. coli or residual chlorine set forth in Subparagraph 2(b), above, and Appendix 1, NEORS shall submit, within 60 days of EPA and Ohio EPA’s approval of the CE HRT Pilot Performance Reports, an Alternative HRT Plan, which shall include a proposal for such additional or alternative equipment that would meet the performance standards set forth in Paragraph 2(b), above, and Appendix 1, including Row 3 and 3A, governing performance

criteria at Westerly. NEORSD shall include in the Alternative HRT Plan a schedule that will meet the deadlines set forth in Appendix 1 to this Consent Decree and a description of the additional monitoring needed to assess the operation of the CE HRT systems, including whether the performance of the CE HRT systems has achieved the performance standards set forth in Subparagraph (2)(b) and Appendix 1 and a schedule for performing such monitoring. U.S. EPA and Ohio EPA's review of the Alternative HRT Plan shall be governed in accordance with the provisions of Paragraph 23 of the Consent Decree (Approval of Deliverables).

(9) Upon receipt of U.S. EPA and Ohio EPA's final approval of the applicable Alternative HRT Plan(s), if any, described in Subparagraphs 7 and 8, above, NEORSD shall complete the construction and/or installation of such equipment to be constructed or installed at the Easterly, Westerly, and Southerly WWTPs (as applicable) in accordance with Appendix 1, the approved plans, and all schedules contained in such Plan(s).

19. Initial Green Infrastructure Component of CSO Control Measures. No later than December 31, 2011, NEORSD shall submit a Green Infrastructure Plan ("Plan") for approval to EPA and the Ohio EPA. The Plan shall identify control measures which use Green Infrastructure to meet the requirements and Performance Criteria set forth in Appendix 3 (Green Infrastructure). The provisions of Paragraph 23 (Approval of Deliverables) and Paragraph 82(a) (Standard of Review) shall govern EPA and the State's approval of NEORSD's Green Infrastructure Plan and any dispute arising from the approval process.

20. Revision of Control Measures to Incorporate Additional Green Infrastructure Proposals. In accordance with the terms and conditions set forth in Appendix 4 of this Consent Decree, NEORSD may propose revisions to Appendix 1 to use Green Infrastructure control measures to substitute fully or in part for Gray Infrastructure control measures included in

Appendix 1, provided that any proposed Green Infrastructure control measures provide the same or greater level of control, in terms of gallons controlled and the number of CSO activations in a typical year, as those Gray Infrastructure control measures to be reduced or replaced, subject to the limitations listed in Appendix 4. The terms of Paragraph 23(a) through (e) (Approval of Deliverables) and Section XIII (Dispute Resolution) of this Consent Decree do not apply to EPA and Ohio EPA's review of any Green Infrastructure Project Proposal ("Proposal") submitted by NEORSD; rather, the review process set forth herein shall control. In the event that EPA or Ohio EPA is unable to complete its review of a Proposal within 90 days, the terms of Paragraph 23(f) of the Consent Decree shall apply to the extension of any milestone dates dependent upon EPA's and/or Ohio EPA's action. Upon review of NEORSD's Proposal, EPA and Ohio EPA will either approve or disapprove the Proposal or approve the Proposal upon certain specified conditions. If the Proposal is disapproved by either EPA or Ohio EPA, the disapproval decision is final. If the Proposal is approved by EPA and Ohio EPA, NEORSD shall either (a) construct and implement the Green Infrastructure control measures in accordance with the provisions and schedule in the approved Proposal and Appendix 4, or (b) construct and implement the original Gray Infrastructure control measures in accordance with the design criteria and schedules set forth in Appendix 1. Following construction, implementation, and evaluation of any Green Infrastructure Proposal, if NEORSD is required to prepare either a Modified Proposal or a Green Infrastructure Corrective Action Plan ("GICAP") as described in Appendix 4, the terms of Paragraph 23 (Approval of Deliverables) shall apply to EPA and Ohio EPA's review of any Modified Proposal or GICAP, but Section XIII (Dispute Resolution) of this Consent Decree shall not apply to EPA and Ohio EPA's review. Upon review of the Modified Proposal or GICAP, following an opportunity for consultation with Ohio EPA, EPA's decision is final.

21. Achievement of Performance Criteria. NEORSD shall ensure that all facilities are designed in accordance with good engineering practices to ensure that corresponding facility-specific, watershed-wide, and system-wide Performance Criteria will be achieved. NEORSD shall achieve the Performance Criteria for each CSO Control Measure by the date for Achievement of Full Operation for the CSO Control Measure, as set forth in Appendix 1. The procedure set forth in Appendix 2 shall be used to determine whether NEORSD has achieved the Performance Criteria.

22. Compliance Following Implementation. By the date specified for Achievement of Full Operation of all CSO Control Measures as set forth in Appendix 1, (i) NEORSD's remaining CSOs shall comply with NEORSD's CSO Permit in effect at the time of any CSO discharge; and (ii) NEORSD shall have eliminated bypasses at its Easterly, Westerly, and Southerly WWTPs, or any remaining bypasses shall comply with NEORSD's NPDES Permits that are applicable at the time of any such bypass.

23. Approval of Deliverables.

a. After review of any plan, report, or other item that is required to be submitted pursuant to this Consent Decree, EPA and the State shall in writing: 1) approve the submission; 2) approve the submission upon specified conditions; 3) approve part of the submission and disapprove the remainder; or 4) disapprove the submission.

b. If the submission is approved pursuant to Paragraph 23.a.1, NEORSD shall take all actions required by the plan, report, or other document, in accordance with the schedules and requirements of the plan, report, or other document, as approved. If the submission is conditionally approved or approved only in part, pursuant to Paragraph 23.a.2 or a.3, NEORSD shall, upon written direction from EPA and the State, take all actions required by

the approved plan, report, or other item that EPA and the State determine are technically severable from any disapproved portions, subject to NEORSD's right to dispute only the specified conditions or the disapproved portions, under Section XIII of this Decree (Dispute Resolution).

c. If the submission is disapproved in whole or in part pursuant to Paragraph 23.a.3 or a.4, NEORSD shall, within 45 Days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the resubmission is approved in whole or in part, NEORSD shall proceed in accordance with the preceding Paragraph.

d. Any stipulated penalties applicable to the original submission, as provided in Section X of this Decree, shall accrue during the 45-Day period or other specified period, but shall not be payable unless the resubmission 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 NEORSD's obligations under this Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

e. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, EPA, after consultation with the State, may again require NEORSD to correct any deficiencies, in accordance with the preceding Paragraphs, or may itself correct any deficiencies, subject to NEORSD's right to invoke Dispute Resolution and the right of EPA and the State to seek stipulated penalties as provided in the preceding Paragraphs.

f. EPA and the State agree to use their best efforts to expeditiously review and comment on submittals that NEORSD is required to submit for approval pursuant to the

terms and provisions of this Consent Decree. If EPA and the State fail to act on a submittal within 90 days, any subsequent milestone date dependent upon such action by EPA and the State shall be extended by the number of Days beyond the 90-Day period that EPA and the State use to act on the submittal, provided that NEORSD notifies EPA and the State in writing, at the time of its submittal, of the end date of the 90-Day review period plus any specific milestone dates that NEORSD believes would be extended under this Paragraph if EPA and the State fail to act within 90 Days. This Paragraph does not apply to EPA and State review of, or actions taken with regard to, revisions to water quality standards, permits, or any matters other than submittals that NEORSD is specifically required to submit for approval pursuant to this Consent Decree.

24. Permits. Where any compliance obligation under this Section requires NEORSD to obtain a federal, state, or local permit or approval, NEORSD shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. NEORSD may seek relief under the provisions of Sections XI (Force Majeure) and XII (Force Majeure Between NEORSD and the State of Ohio) of this Consent Decree for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, if NEORSD has submitted timely and complete applications and has taken all other actions necessary to obtain all such permits or approvals.

25. 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 NEORSD shall not be cause for extension of any required compliance date in this Consent Decree.

VII. FEDERAL SUPPLEMENTAL ENVIRONMENTAL PROJECT

26. NEORSD shall implement a Supplemental Environmental Project (“SEP”), providing for the collection and disposal of household hazardous waste at a special waste convenience center (Center) or an alternative location in accordance with the provisions of Appendix 5 of this Consent Decree. The SEP shall be completed in accordance with the schedule set forth in Appendix 5.

27. NEORSD is responsible for the satisfactory completion of the SEP in accordance with the requirements of this Decree. NEORSD may use contractors or consultants in planning and implementing the SEP.

28. With regard to the SEP, NEORSD certifies the truth and accuracy of each of the following:

a. that all cost information provided to EPA in connection with EPA’s approval of the SEP is complete and accurate and that NEORSD in good faith estimates that the cost to implement the SEP is \$1,000,000;

b. that, as of the date of executing this Decree, NEORSD is not required to perform or develop the SEP by any federal, state, or local law or regulation and is not required to perform or develop the SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum;

c. that the SEP is not a project that NEORSD was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Decree;

d. that NEORSD has not received and will not receive credit for the SEP in any other enforcement action; and

e. that NEORSD will not receive any reimbursement for any portion of the SEP from any other person.

29. SEP Completion Report

a. Within 30 days after the date set for completion of the SEP, NEORSD shall submit a SEP Completion Report to the United States and the State, in accordance with XVII of this Consent Decree (Notices). The SEP Completion Report shall contain the following information:

- i. a detailed description of the SEP as implemented;
- ii. a description of any problems encountered in completing the SEP and the solutions thereto;
- iii. an itemized list of all eligible SEP costs expended;
- iv. certification that the SEP has been fully implemented pursuant to the provisions of this Decree; and
- v. a description of the environmental and public health benefits resulting from implementation of the SEP (with a quantification of the benefits and pollutant reductions, if feasible).

30. EPA or the State may, in either entity's sole discretion, require information in addition to that described in the preceding Paragraph, in order to evaluate NEORSD's completion report.

31. After receiving the SEP Completion Report, the United States and the State shall notify NEORSD whether or not NEORSD has satisfactorily completed the SEP. If NEORSD has not completed the SEP in accordance with this Consent Decree, stipulated penalties may be assessed under Section X of this Consent Decree.

32. Disputes concerning the satisfactory performance of the SEP and the amount of eligible SEP costs may be resolved under Section XIII of this Decree (Dispute Resolution). No other disputes arising under this Section shall be subject to Dispute Resolution.

33. Each submission required under this Section shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 48.

34. Any public statement, oral or written, in print, film, or other media, made by NEORSD making reference to the SEP under this Decree shall include the following language: This project was undertaken in connection with the settlement of an enforcement action, *United States and State of Ohio v. Northeast Ohio Regional Sewer District*, taken on behalf of the U.S. Environmental Protection Agency under the Clean Water Act.

35. NEORSD represents that as a governmental entity it does not pay federal or state income taxes.

VIII. STATE SUPPLEMENTAL ENVIRONMENTAL PROJECT

36. NEORSD shall implement a SEP known as Canal Pump Station Operation and Maintenance. The SEP shall include the operation and maintenance of the pump station installed to maintain flow in the canal remnant located in the Cuyahoga Valley National Park in the vicinity of State Route 82, provided that the project for the Canal Diversion Dam Removal and the Construction of the Pump Station is selected for implementation following the completion of the Environmental Impact Statement and the pump station is constructed. The SEP shall be performed for a period of 25 years in accordance with all provisions of this Section VIII and Appendix 6 of this Consent Decree. The SEP shall be accomplished in accordance with the schedule set forth in Appendix 6. In the event that the Canal Diversion Dam Removal and Construction of the Pump Station is not selected for implementation following the conclusion of

the Environmental Impact Statement, NEORSD shall implement the following Alternative SEP. NEORSD shall pay the sum of \$800,000.00 to Ohio EPA for deposit into the Surface Water Improvement Fund for use by Ohio EPA for any project(s) related to water quality protection and/or water quality restoration consistent with the operation and use of that fund as established pursuant to O.R.C. 6111.0381. Such payment shall be made within sixty (60) days after NEORSD has received notice from Ohio EPA that the Canal Diversion Dam Removal will not be implemented, or by January 31, 2012, whichever occurs later. This money shall be used by Ohio EPA to provide grant funding for water quality improvements within the Chagrin, Cuyahoga, or Rocky River Watersheds, or the watersheds of the Lake Erie Direct Tributaries that are located within the service area of the Northeast Ohio Regional Sewer District (including, but not limited to, the watersheds of Euclid Creek, Doan Brook, Dugway Brook, and Nine Mile Creek).

37. NEORSD is responsible for the satisfactory completion of the SEP or Alternative SEP in accordance with the requirements of this Decree. NEORSD may use contractors or consultants in planning and implementing the SEP.

38. With regard to the SEP, NEORSD certifies the truth and accuracy of each of the following:

a. that all cost information provided to Ohio EPA in connection with Ohio EPA's approval of the SEP is complete and accurate and that NEORSD in good faith estimates that the cost to implement the SEP is \$800,000;

b. that, as of the date of executing this Decree, NEORSD is not required to perform or develop the SEP by any federal, state, or local law or regulation and is not

required to perform or develop the SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum;

c. that the SEP is not a project that NEORSD was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Decree;

d. that NEORSD has not received and will not receive credit for the SEP in any other enforcement action; and

e. that NEORSD will not receive any reimbursement for any portion of the SEP from any other person.

39. State SEP Performance and Completion Report

a. After NEORSD has commenced operation of the pump station, NEORSD shall submit an Annual Report, within 30 days after the end of each year of operation, and on the date set for completion of the SEP NEORSD shall submit a State SEP Completion Report to the United States and the State, in accordance with XVII of this Consent Decree (Notices). The Annual Report shall include the following information:

i. a detailed description of the SEP as implemented within the prior year;

ii. a description of any problems encountered in operation and maintenance of the pump station and the solutions thereto;

iii. an itemized list of all eligible SEP costs expended;

iv. certification that the pump station has been fully operational throughout the year and has been maintained or had replacement components installed consistent with providing for the continued operation of the pump station as designed throughout the 25

year period so that at the conclusion of that period the pump station continues to be fully operational;

40. The State SEP Completion Report shall contain the following information:

- i. a detailed description of the SEP as implemented;
- ii. a description of any problems encountered in completing the SEP and the solutions thereto;
- iii. an itemized list of all eligible SEP costs expended;
- iv. certification that the SEP has been fully implemented pursuant to the provisions of this Decree.

41. Ohio EPA or the State may, in either entity's sole discretion, require information in addition to that described in the preceding Paragraph, in order to evaluate NEORSD's Annual Report or State SEP Completion Report.

42. After receiving the State SEP Completion Report, Ohio EPA or the State will notify NEORSD whether or not NEORSD has satisfactorily completed the SEP. If NEORSD has not completed the SEP in accordance with this Consent Decree, stipulated penalties may be assessed under Section X of this Consent Decree (Stipulated Penalties).

43. Disputes concerning the satisfactory performance of the SEP and the amount of eligible SEP costs may be resolved under Section XIII of this Decree (Dispute Resolution). No other disputes arising under this Section shall be subject to Dispute Resolution.

43. Each submission required under this Section shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 48.

44. Any public statement, oral or written, in print, film, or other media, made by NEORSD making reference to the SEP under this Decree shall include the following language:

This project was undertaken in connection with the settlement of an enforcement action, *United States and State of Ohio v. Northeast Ohio Regional Sewer District*, taken on behalf of the Ohio EPA.

45. NEORSD represents that as a governmental entity it does not pay federal or state income taxes.

IX. REPORTING REQUIREMENTS

46. On a semi-annual basis on January 31 and July 31, each Six-month Period commencing with the first full six-month period after Entry of this Consent Decree and continuing until termination, NEORSD will submit to U.S. EPA and the State a progress report (“Semi-Annual Progress Report”) regarding the implementation of the requirements of this Decree in the previous Six-month Period. The Semi-Annual Progress Report will include at a minimum:

a. A statement setting forth the deadlines and other terms that NEORSD is required by this Consent Decree to meet since the date of the last Semi-Annual Progress Report, whether and to what extent NEORSD has met these requirements, and the reasons for any noncompliance;

b. A general description of the work completed within the Six-month Period, and a projection of work to be performed pursuant to this Consent Decree during the next or succeeding Six-month Period. Notification to U.S. EPA and Ohio EPA of any anticipated delay shall not, by itself, excuse the delay;

c. A summary of the submissions under this Decree that were sent to U.S. EPA and/or Ohio EPA, including the dates submitted;

d. NEORSD shall also submit, with each Semi-Annual Status report, copies (to EPA only) of all monthly monitoring reports, noncompliance reports, and other reports pertaining to CSO discharges and bypasses that NEORSD submitted to or is required to submit to Ohio EPA in the preceding six months.

47. All reports shall be submitted to the persons designated in Section XVII of this Consent Decree (Notices).

48. Each report submitted by NEORSD under this Section shall be signed by an official of the submitting party and include the following certification:

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 the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

49. The reporting requirements of this Consent Decree do not relieve NEORSD of any reporting obligations required by the Clean Water Act or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

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

X. STIPULATED PENALTIES

51. NEORSD 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 Sections XI (Force Majeure) and XII (Force Majeure Between NEORSD and the State of Ohio). A violation includes failing to perform any obligation required by the terms of this Decree, including any work plan or schedule approved under this Decree, according to all applicable requirements of this Decree and within the specified time schedules established by or approved under this Decree.

52. Late Payment of Civil Penalty. If NEORSD fails to pay the civil penalty required to be paid under Section V of this Decree (Civil Penalty) when due, NEORSD shall pay a stipulated penalty of \$ 675 per Day for each Day that the payment is late.

53. For each failure to adequately construct and implement the measures in accordance with all requirements of Appendices 1 and 3 (including all applicable design criteria), meet the dates for Achievement of Full Operation, and/or demonstrate achievement of the performance criteria in accordance with Appendices 1 and 3, as required by Section VI, NEORSD shall pay the following stipulated penalties to the Plaintiffs per violation per Day:

<u>Period of Noncompliance</u>	<u>Penalty per Day per Violation</u>
Days 1-15	\$1,000
Days 16-30	\$2,000
Over 30 Days	\$5,000

54. For each failure to implement the Nine Minimum Controls pursuant to Paragraph 15 of Section VI, NEORSD shall pay the following stipulated penalties to the Plaintiffs per violation per Day:

<u>Period of Noncompliance</u>	<u>Penalty per Day per Violation</u>
Days 1-15	\$500

Days 16-30	\$1,000
Over 30 days	\$1,500

55. For each failure to submit a timely and adequate plan, report, schedule or other submission identified in Sections VI, VII, or VIII and/or Appendices 1 through 6, NEORSD shall pay the following stipulated penalties to the Plaintiffs per violation per day:

<u>Period of Noncompliance</u>	<u>Penalty per Day per Violation</u>
Days 1-15	\$500
Days 16-30	\$1,000
Over 30 days	\$1,500

56. Federal and State SEP Compliance.

a. For each calendar month in which NEORSD fails to, in compliance with applicable law, provide a collection point location for the Cuyahoga County communities to deliver household hazardous waste collected from residents and dispose of the waste, NEORSD shall pay to the United States a stipulated penalty of \$14,583. This provision will not apply if the date or dates that NEORSD planned as the collection date, Cuyahoga County offices are closed due to inclement weather. This provision shall remain in force for a minimum of four years from the date of the first collection or until NEORSD spends \$1,000,000 in complying with the Federal SEP requirements, whichever is longer.

b. If NEORSD fails to implement the SEP, or halts or abandons work on the SEP, NEORSD shall pay to the United States a stipulated penalty of \$700,000 minus seventy percent of NEORSD's expenses for complying with the SEP up to the point of halting or abandoning its work.

c. If NEORSD fails to implement the State SEP, NEORSD shall pay the following stipulated penalties to the State per violation per Day:

<u>Period of Noncompliance</u>	<u>Penalty per Day per Violation</u>
Days 1-15	\$500
Days 16-30	\$1,000
Over 30 days	\$2,000

57. For each failure to comply with any requirement of this Consent Decree not specified in Paragraphs 52-56, NEORS shall pay the following stipulated penalties:

<u>Period of Noncompliance</u>	<u>Penalty per Day per Violation</u>
Days 1-15	\$500
Days 16-30	\$1,000
Over 30 days	\$2,000

58. Except as provided in subparagraph 56 a. and b., above, 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.

59. NEORS shall pay stipulated penalties to the United States and the State within 30 Days of a written demand by either Plaintiff. Unless otherwise specified in this Section, NEORS shall pay 50 percent of the total stipulated penalty amount due to the United States and 50 percent to the State. The Plaintiff making a demand for payment of a stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff.

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

61. Stipulated penalties shall continue to accrue as provided in Paragraph 58, 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 or the State that is not appealed to the Court, NEORSD shall pay accrued penalties determined to be owing, together with interest, to the United States or the State within 30 Days of the effective date of the agreement or the receipt of EPA's or the State's decision or order.

b. If the dispute is appealed to the Court and the United States or the State prevails in whole or in part, NEORSD shall pay all accrued penalties determined by the Court to be owing, together with interest, within 90 Days of receiving the Court's decision or order, except as provided in subparagraph c, below.

c. If any Party appeals the District Court's decision, NEORSD shall pay all accrued penalties determined to be owing, together with interest, within 15 Days of receiving the final appellate court decision.

62. NEORSD shall pay stipulated penalties owing to the United States in the manner set forth and with the confirmation notices required by Paragraph 10, 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. NEORSD shall pay stipulated penalties owing to the State in the manner set forth and with the confirmation notices required by Paragraphs 12-13. A copy of the transmittal letter to the United States and other evidence of payment to the State will also be sent to the Ohio Attorney General's Office and Ohio EPA.

63. If NEORSD fails to pay stipulated penalties according to the terms of this Consent Decree, NEORSD 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 NEORSD's failure to pay any stipulated penalties.

64. Subject to the provisions of Section XV 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 for NEORSD's violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of any of NEORSD's NPDES Permits or the Clean Water Act, NEORSD shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

XI. FORCE MAJEURE

65. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond NEORSD's control, or of any entity controlled by NEORSD, or of NEORSD's contractors, that delays or prevents the performance of any obligation under this Consent Decree despite NEORSD's best efforts to fulfill the obligation. The requirement that NEORSD 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 such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. "Force majeure" does not include NEORSD's financial inability to perform any obligation under this Consent Decree.

66. 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, NEORSD shall provide notice orally or by electronic or facsimile transmission to U.S. EPA, within 14 days of when NEORSD first knew that the event might cause a delay. Within thirty days thereafter, NEORSD shall provide in writing to U.S. EPA 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; NEORSD's 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 NEORSD's opinion, such event may cause or contribute to an endangerment to public health, welfare or the environment. NEORSD shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure event. Failure to comply with the above requirements shall preclude NEORSD 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.

67. If EPA 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 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 NEORSD in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event. An extension of time granted pursuant to a force majeure event shall not be deemed a modification of this Decree.

68. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify NEORSD in writing of its decision within 60 days of receiving the written explanation and description required by Paragraph 66 above.

69. If NEORSD elects to invoke the dispute resolution procedures set forth in Section XIII (Dispute Resolution), it shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, NEORSD 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 NEORSD complied with the requirements of Paragraphs 65 and 66, above. If NEORSD carries this burden, the delay at issue shall be deemed not to be a violation by NEORSD of the affected obligation of this Consent Decree identified to EPA and the Court.

XII. FORCE MAJEURE BETWEEN NEORSD AND THE STATE OF OHIO

70. 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, NEORSD shall provide notice orally or by electronic or facsimile transmission to Ohio EPA, within 14 days of when NEORSD first knew that the event might cause a delay. Within thirty days thereafter, NEORSD shall provide in writing to the State and Ohio EPA 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; NEORSD's rationale for attributing such a delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in NEORSD's opinion, such event may cause or contribute to an endangerment to public health, welfare or the environment. NEORSD 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 NEORSD 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. For purposes of this section, NEORSD may provide the same notice provided to U.S. EPA, as described in Paragraph 66.

71. If the State and Ohio EPA agree that the delay or anticipated delay is attributable to an event which is entirely beyond NEORSD's control and that the time for performance of the obligations under this Consent Decree that are affected by the event should be extended by the State and Ohio EPA for such time as is necessary to complete those obligations, the State and Ohio EPA will inform NEORSD in writing. An extension of the time for performance of the obligations affected by the event shall not, of itself, extend the performance of any other obligations. The State and Ohio EPA will notify NEORSD in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event. An extension of time granted pursuant to a force majeure event shall not be deemed a modification of this Decree.

72. In any action by the State to enforce any of the provisions of this Consent Decree, NEORSD may raise that they are entitled to a defense that its conduct was caused by reasons entirely beyond its control such as, by way of example and not limitations, acts of God, strikes, acts of war or civil disturbances. While the State does not agree that such defense exists, it is, however, hereby agreed upon by NEORSD and the State that it is premature at this time to raise and adjudicate the existence of such a defense and that the appropriate point at which to adjudicate the existence of such a defense is at the time, if ever, that a court proceeding to enforce this Consent Decree is commenced by the State. At that time, NEORSD will bear the burden of proving that any delay was or will be caused by circumstances entirely beyond the control of NEORSD.

XIII. DISPUTE RESOLUTION

73. 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. If a dispute is subject to this section, NEORSD's failure to seek resolution of the dispute under this Section shall preclude NEORSD from raising any such issue as a defense to an action by the United States to enforce any obligation of NEORSD arising under this Decree.

74. The issuance, renewal, modification, denial, or revocation of a permit and the issuance of orders or other actions of the Director of Environmental Protection (the Director of Ohio EPA), including, but not limited to decisions with respect to revisions to water quality standards, are not subject to dispute resolution under this Decree but, rather, shall be subject to challenge under Chapter 3745, O.R.C. The term "actions of the Director of Environmental Protection" shall be consistent with the definitions set forth in Chapter 3745, O.R.C.

75. 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 NEORSD sends the Plaintiffs a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 30 Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the Plaintiffs shall be considered binding unless, within 30 Days after the conclusion of the informal negotiation period, NEORSD invokes formal dispute resolution procedures as set forth below.

76. Formal Dispute Resolution. NEORSD shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by submitting to the Plaintiffs 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 NEORSD's position and any supporting documentation relied upon by NEORSD.

77. The Plaintiffs shall submit their Statement of Position within 45 Days of receipt of NEORSD's Statement of Position. The Plaintiffs' 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 Plaintiffs.

78. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to Paragraphs 75-77.

79. The Plaintiffs' Statement of Position shall be binding on NEORSD, unless NEORSD files a motion for judicial review of the dispute in accordance with the following Paragraph. In the event that the United States and the State are unable to reach agreement with regard to NEORSD's claim, the position of the United States shall be the Plaintiffs' final position.

80. NEORSD may seek judicial review of the dispute by filing with the Court and serving on the Plaintiffs, in accordance with Section XVII of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 30 Days of receipt of the Plaintiffs' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of NEORSD's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

81. The Plaintiffs shall respond to NEORSD's motion within the time period allowed by the Local Rules of this Court. NEORSD may file a reply memorandum, to the extent permitted by the Local Rules.

82. Standard of Review

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought under Paragraph 76 pertaining to the adequacy or appropriateness of plans, procedures to implement plans, schedules or any other items requiring approval by the Plaintiffs 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, NEORSD shall have the burden of demonstrating, based on the administrative record, that the Plaintiffs' position 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 76, NEORSD shall bear the burden of demonstrating that its position complies with this Consent Decree and better furthers the objectives of the Consent Decree. Any judicial review of such dispute shall not be based on the administrative record.

83. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of NEORSD 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 61. If

NEORSD does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section X (Stipulated Penalties).

XIV. INFORMATION COLLECTION AND RETENTION

84. The United States, the State, and their representatives, including attorneys, contractors, 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 NEORSD or its representatives, contractors, or consultants;
- d. obtain documentary evidence, including photographs and similar data; and
- e. assess NEORSD's compliance with this Consent Decree.

85. Upon request, NEORSD shall provide U.S. EPA and the State or its authorized representatives splits of any samples taken by NEORSD. Upon request and if practicable, U.S. EPA and/or the State shall provide NEORSD splits of any samples taken by U.S. EPA and/or the State or its authorized representatives.

86. Until five years after the termination of this Consent Decree, NEORSD shall retain, and shall instruct its contractors 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' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to NEORSD'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, NEORSD shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

87. At the conclusion of the information-retention period provided in the preceding Paragraph, NEORSD shall notify the United States and the State at least 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, NEORSD shall deliver any such documents, records, or other information to EPA or the State. NEORSD 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 NEORSD asserts such a privilege, it shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by NEORSD. 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.

88. NEORSD 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 NEORSD seeks to protect as CBI, NEORSD shall follow the procedures set forth in 40 C.F.R. Part 2.

89. 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 NEORSD to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XV. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

90. This Consent Decree resolves the civil claims of the United States and the State for the violations alleged in the Complaints filed in this action through the date of lodging.

91. The United States and the State reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraph 90. 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 Act or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in Paragraph 90. 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 at, or posed by NEORSD's Westerly, Easterly, or Southerly WWTPs, or NEORSD's Combined or Separate Sanitary Sewer Systems, whether related to the violations addressed in this Consent Decree or otherwise.

92. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, civil penalties, other appropriate relief relating to NEORSD's WWTPs or its Combined or Separate Sanitary Sewer Systems, NEORSD 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 90 of this Section.

93. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. NEORSD is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and NEORSD'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 NEORSD's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CWA, 33 U.S.C. § 1311 et seq., or with any other provisions of federal, State, or local laws, regulations, or permits.

94. This Consent Decree does not limit or affect the rights of NEORSD 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 NEORSD, except as otherwise provided by law.

95. 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 NEORSD from raising the revenues needed to comply with this Decree.

96. 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.

XVI. COSTS

97. 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 NEORSD.

XVII. NOTICES

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

To the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-1-1-08177/1

Chief, Water Enforcement and Compliance Assurance Branch
U.S. Environmental Protection Agency
Region 5
77 West Jackson, Blvd., Mail Code C-15WC
Chicago, IL 60604-3590

And

Nicole Cantello
Associate Regional Counsel
U.S. Environmental Protection Agency
Region 5
77 West Jackson Blvd., Mail Code C14J
Chicago, IL 60604-3590

To U.S. EPA:

Chief, Water Enforcement and Compliance Assurance Branch
U.S. Environmental Protection Agency

Region 5
77 West Jackson, Blvd., Mail Code C-15WC
Chicago, IL 60604-3590

And

Nicole Cantello
Associate Regional Counsel
U.S. Environmental Protection Agency
Region 5
77 West Jackson Blvd., Mail Code C14J
Chicago, IL 60604-3590

To the State:

Chief, Environmental Enforcement Section
Office of the Ohio Attorney General
30 East Broad Street, 25th Floor
Columbus, Ohio 43215-3400

Chief, Division of Surface Water
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
Columbus, OH43215

To NEORSD:

Executive Director
Northeast Ohio Regional Sewer District
3900 Euclid Avenue
Cleveland, OH 44115-2506

And

Director of Law
Northeast Ohio Regional Sewer District
3900 Euclid Avenue
Cleveland, OH 44115-2506

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

100. 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.

XVIII. EFFECTIVE DATE

101. 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; provided, however, that NEORSD hereby agrees that it shall be bound to perform duties scheduled to occur prior to the Effective Date. In the event the United States withdraws or withholds consent to this Consent Decree before entry, or the Court declines to enter the Consent Decree, then the preceding requirement to perform duties scheduled to occur before the Effective Date shall terminate.

XIX. RETENTION OF JURISDICTION

102. 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 XIII and XX, or effectuating or enforcing compliance with the terms of this Decree.

XX. MODIFICATION

103. Except as provided in Paragraph 67, 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.

104. Any disputes concerning modification of this Decree shall be resolved pursuant to Section XIII of this Decree (Dispute Resolution), provided, however, that, instead of the burden

of proof provided by Paragraph 82, 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).

XXI. TERMINATION

105. After NEORSD has: (a) achieved compliance with all provisions contained in Sections VI and VII of this Consent Decree, and subsequently has maintained satisfactory compliance with each and every provision for twelve consecutive months; (b) paid all penalties and other monetary obligations due under the Consent Decree and no penalties or other monetary obligations due under the Consent Decree are outstanding or owed to the United States or the State; and (c) at least 120 days prior to filing the motion described below, certified to the United States and the State that it has complied with the requirements of (a) and (b) of this Paragraph and has provided sufficient documentation to the United States and the State to support its certification, NEORSD may serve upon the United States and the State a Request for Termination, stating that NEORSD has satisfied those requirements.

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

107. If the United States and the State do not agree that the Decree may be terminated, NEORSD may invoke Dispute Resolution under Section XIII of this Decree. However, NEORSD shall not seek Dispute Resolution of any dispute regarding termination, under

Paragraph 76 of Section XIII, until 90 days after service of its Request for Termination. Any dispute arising under Section XXI (Termination) will be governed by Paragraph 82(b).

XXII. PUBLIC NOTICE AND COMMENT

108. This Consent Decree shall be lodged with the Court for a period of not less than 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. NEORSD 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 NEORSD in writing that it no longer supports entry of the Decree.

XXIII. SIGNATORIES/SERVICE

109. Each undersigned representative of NEORSD and the State and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice 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.

110. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. NEORSD 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.

111. The parties agree that NEORSD need not file Answers to the Complaints in this action unless or until the Court expressly declines to enter this Consent Decree.

XXIV. INTEGRATION

112. This Consent Decree and its Appendices 1- 6 constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Consent Decree. The Consent Decree and its Appendices supersede all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than any submittals subsequently approved pursuant to this Consent Decree, no other document, nor any representation, inducement, agreement, understanding, or promise constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Decree. The Appendices are not factual stipulations, and the United States and the State reserve their rights to disagree or contest particular factual statements contained therein. In the event of conflict between this Consent Decree and any Appendix, this Consent Decree shall control.

XXV. FINAL JUDGMENT

113. 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 NEORS. 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.

APPENDICES

The following appendices are attached to and part of this Consent Decree:

“Appendix 1” is the CSO Control Measures including schedule milestones and performance criteria;

“Appendix 2” is the Post Construction Monitoring Program;

“Appendix 3” contains provisions regarding the Green Infrastructure Program set forth in Paragraph 19 of the Consent Decree;

“Appendix 4” contains provisions regarding the Green Infrastructure Program set forth in Paragraph 20 of the Consent Decree;

“Appendix 5” contains provisions regarding the Federal Supplemental Environmental Project referenced in Paragraph 26 of the Consent Decree; and

“Appendix 6” contains provisions regarding the State Supplemental Environmental Project referenced in Paragraph 36 of the Consent Decree.

Dated and entered this day of _____, ____.

UNITED STATES DISTRICT JUDGE
Northern District of Ohio

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Ohio v. Northeast Ohio Regional Sewer District (N.D. Ohio)

FOR PLAINTIFF UNITED STATES OF AMERICA:

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044

DATE: _____

STEVEN D. ELLIS
KRISTIN M. FURRIE
Trial Attorneys
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044

DATE: _____

STEVEN M. DETTELBACH
United States Attorney
Northern District of Ohio

By:

STEVEN PAFFILAS
Assistant United States Attorney
Northern District of Ohio
801 W. Superior Ave., Suite 400
Cleveland, Ohio 44113

DATE: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Ohio v. Northeast Ohio Regional Sewer District (N.D. Ohio)

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

CYNTHIA GILES
Assistant Administrator
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

DATE: _____

ADAM M. KUSHNER
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

DATE: _____

MARK POLLINS
Director, Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

DATE: _____

ANDREW CHERRY
Attorney Advisor
Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

DATE: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Ohio v. Northeast Ohio Regional Sewer District (N.D. Ohio)

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

SUSAN HEDMAN
Regional Administrator
United States Environmental Protection Agency
Region 5 (R-19J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DATE: _____

NICOLE CANTELLO
Associate Regional Counsel
United States Environmental Protection Agency
Region 5 (C-14J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DATE: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Ohio v. Northeast Ohio Regional Sewer District (N.D. Ohio)

FOR PLAINTIFF THE STATE OF OHIO

THE STATE OF OHIO
Ohio Attorney General

By: _____
SUMMER J. KOLADIN PLANTZ
Assistant Attorney General
State Office Tower
30 E. Broad Street - 25th Floor
Columbus, Ohio 43215-3400

DATE: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States and State of Ohio v. Northeast Ohio Regional Sewer District (N.D. Ohio)

FOR DEFENDANT THE NORTHEAST OHIO REGIONAL SEWER DISTRICT

By: _____

DATE: _____

JULIUS CIACCIA, JR.
Executive Director
Northeast Ohio Regional Sewer District
3900 Euclid Avenue
Cleveland, Ohio 44115

*United States and State of Ohio v. Northeast Ohio
Regional Sewer District*

Consent Decree
Appendix 1

**Control Measures and Performance
Criteria**

Appendix 1

	Control Measure	Description	CSOs Controlled	Design Criteria	Performance Criteria in a Typical Year ¹	Critical Milestones
	Easterly Plant					
1	Increase Secondary Treatment Capacity	Increase secondary capacity from 300 MGD to a sustained capacity of 400 MGD	Elimination of the Primary Effluent Bypass (PEB)	Provide secondary sustained treatment capacity of 400 MGD	Eliminate the primary effluent bypass; provide secondary treatment to meet NPDES effluent limits	1. Bid Year: 2014 2. Achievement of Full Operation: 2016
2	Treatment and Disinfection of CSO 001 using CEHRT	1. Pilot testing of CEHRT and disinfection to assess performance 2. If pilot testing of CEHRT does meet performance criteria, construction of 400 MGD CEHRT and disinfection system	Outfall 001	Provide treatment and high rate disinfection of CSO 001 flows up to 400 mgd peak inflow to 25 fully treated OF and 2 partially treated OF in a typical year. Design to control 30 mg/l of TSS.	Achieve 40.0 mg/l TSS averaged across 7 consecutive activations; 126/100 ml E. coli (rec. season geomean) 284/100 ml E. coli (rolling 7 days of activation geomean); and 0.038 mg/l residual chlorine. If 40 mg/l TSS is not achieved, default to ballasted flocculation ⁶ treatment system in Item 2A.	1. Work Plan: Submitted by January 1, 2011 2. Pilot Testing Report: Within 42 months of Work Plan Approval 3. Design Commencement: Within 6 months of Pilot Testing Report Approval 4. Construction Award: Within 18 months of Design Commencement 5. Construction Completion: Within 30 months of construction award
2A	Treatment and Disinfection of CSO 001 using Ballasted Flocculation ⁶	If pilot testing of CEHRT under Control Measure 2 does not meet performance criteria, construction of 400 MGD ballasted flocculation ⁶ and disinfection system.	Outfall 001	Provide ballasted flocculation ⁶ treatment and high rate disinfection of CSO 001 flows up to 400 mgd peak inflow to 25 fully treated OF and 2 partially treated OF in a typical year. Design to control 30 mg/l of TSS.	Achieve 30 mg/l TSS averaged across 7 consecutive activations; 126/100 ml E. coli (rec. season geomean) 284/100 ml E. coli (rolling 7 days of activation geomean); and 0.038 mg/l residual chlorine.	1. Work Plan: Submit work plan for ballasted flocculation ⁶ pilots within 6 months after submission of pilot report for CEHRT that indicates failure to achieve performance criteria in Control Measure 2. 2. Pilot Testing Report: Within 12 months of Work Plan Approval 3. Design Commencement: Within 6 months of Pilot Testing Report Approval 4. Construction Award: Within 18 months of Design Commencement 5. Construction Completion: Within 30 months of construction award
	Westerly Plant					
3	Treatment and Disinfection of CSO 002 using CEHRT in all 6 Quadrants (quads).	1. Demonstration and testing of CEHRT within the existing four CSOTF quads to assess performance 2. If demonstration testing of the existing four quads using CEHRT meets performance criteria, construction of 2 additional quads to provide 411 MGD wet weather capacity 3. If demonstration testing of the existing four quads using CEHRT does not meet performance criteria, implement Control Measure 3A	Outfall 002	Provide CEHRT treatment in 4 existing and 2 new quads and high rate disinfection of CSO 002 flows up to 411 mgd peak inflow to 11 fully treated OF and 3 partially treated OF in a typical year. Design to control to 30 mg/l of TSS.	Achieve 40.0 mg/l TSS averaged across 7 consecutive activations; 126/100 ml E. coli (rec. season geomean) 284/100 ml E. coli (rolling 7 days of activation geomean); and 0.038 mg/l residual chlorine NTE. If 40 mg/l TSS is not achieved, default to ballasted flocculation ⁶ treatment system in Item 3A.	1. Work Plan: Submitted by January 1, 2011. 2. Demonstration Testing Report: Within 54 months of Work Plan Approval 3. Design Commencement of 2 additional quads : Within 6 months of Demonstration Testing Report Approval 4. Construction Award: Within 18 months of Design Commencement 5. Construction Completion: Within 30 months of construction award

Appendix 1

	Control Measure	Description	CSOs Controlled	Design Criteria	Performance Criteria in a Typical Year ¹	Critical Milestones
3A	Treatment and Disinfection of CSO 002 using CEHRT in Existing 4 Quads and Ballasted Flocculation ⁶	If demonstration testing of the existing four quads using CEHRT under Control Measure 3 does not meet performance criteria, construction of 150 MGD ballasted flocculation ⁶ treatment system to provide 450 MGD wet weather capacity.	Outfall 002	Provide CEHRT (4 existing quads) and 150 MGD ballasted flocculation ⁶ treatment and high rate disinfection of CSO 002 flows up to 450 mgd peak inflow to 12 fully treated OF and 2 partially treated OF in a typical year. Design to control to 30 mg/l of TSS. The facility will be integrated into the upgraded existing CSOTF such that wet weather operation will prioritize (1) storage in upgraded CSOTF tankage, (2) treatment of flows exceeding storage capacity through the 150 MGD ballasted flocculation ⁶ treatment system, and (3) treatment of flows in excess of the 150 MGD ballasted flocculation ⁶ facility capacity through the upgraded 4 quads CEHRT system.	Achieve maximum performance of TSS removal; 126/100 ml E. coli (rec season geomean), 284/100 ml E. coli (rolling 7 days of activation geomean) and 0.038 mg/l residual chlorine NTE.	<ol style="list-style-type: none"> 1. Work Plan: Submit work plan for ballasted flocculation⁶ pilots for 2 additional quads within 6 months after submission of pilot report for CEHRT that indicates failure to achieve performance criteria in Control Measure 3. 2. Pilot Testing Report: Within 12 months of Work Plan Approval 3. Design Commencement: Within 6 months of Pilot Testing Report Approval 4. Construction Award: Within 18 months of Design Commencement 5. Construction Completion: Within 30 months of construction award
Southerly Plant						
4	Treatment of Primary Effluent Bypass Demonstration/Pilot Project	Demonstration or pilot testing of chemical addition within primaries bank 11 - 18 and high rate disinfection of the primary effluent bypass to assess performance.	PEB	Demonstrate or pilot performance of treatment and high rate disinfection of primary effluent bypass flows for up to 125 MGD peak flow designed to control to 30 mg/l TSS.	Achieve 40.0 mg/l TSS averaged across 7 consecutive activations; 126/100 ml E. coli (rec. season geomean) 284/100 ml E. coli (rolling 7 days of activation geomean); and 0.038 mg/l residual chlorine NTE. If 40 mg/l TSS is not achieved, default to ballasted flocculation ⁶ treatment system for PEB in Item 5A.	<ol style="list-style-type: none"> 1. Work Plan: Submitted by January 1, 2011 2. Pilot Testing Report: Within 42 months of Work Plan Approval
5	Increase Secondary Treatment Capacity and Treat Primary Effluent Bypass with CEHRT	<ol style="list-style-type: none"> 1. Increase secondary capacity from 400 MGD to 615 MGD during wet weather by adding an additional 1st stage settling tank, operating the 1st and 2nd stage secondary systems in parallel, and creating a second effluent outfall off of 1st stage. 2. If demonstration testing of chemical addition under Control Measure 4 does meet performance criteria, construct chemical addition within primaries and high rate disinfection of the remaining primary effluent bypass flows up to 125 MGD peak flows. 	PEB	<ol style="list-style-type: none"> 1. Provide secondary treatment capacity of 615 MGD during wet weather and reduce bypass events to 1 treated/0 untreated in a typical year. 2. Provide treatment and high rate disinfection for primary effluent bypass flows up to 125 MGD peak flow designed to control to 30 mg/l TSS. 	<ol style="list-style-type: none"> 1. For 1st and 2nd Stage outfalls, achieve NPDES Permit limits². 2. For PEB flow occurring beyond capacity of the 615 MGD 1st and 2nd stage parallel treatment capacity, achieve 40 mg/l TSS averaged across 7 consecutive activations, 126/100 ml E. coli (rec. season geomean), 284/100 ml E. coli (rolling 7 days of activation geomean) and 0.038 mg/l residual chlorine NTE. 	<ol style="list-style-type: none"> 1. Commencement of design of plant improvements and PEB CEHRT system within 6 months of approval of pilot report. 2. Construction award for plant improvements and PEB CEHRT system within 24 months of design commencement. 3. Construction Completion of plant improvements and PEB CEHRT system within 30 months of construction award.

Appendix 1

	Control Measure	Description	CSOs Controlled	Design Criteria	Performance Criteria in a Typical Year ¹	Critical Milestones
5A	Treat Primary Effluent Bypass with Ballasted Flocculation ⁶	If demonstration testing of chemical addition within the primaries under Control Measure 4 does not meet performance criteria, construction of ballasted flocculation ⁶ treatment facility and high rate disinfection system for remaining PEB flows up to 125 MGD peak flows.	PEB	Provide ballasted flocculation ⁶ treatment and high rate disinfection for primary effluent bypass flows up to 125 MGD peak flow designed to control to 30 mg/l TSS.	For PEB flow occurring beyond capacity of the 615 MGD 1st and 2nd stage parallel treatment capacity, achieve 30 mg/l TSS averaged across 7 consecutive activations, 126/100 ml E. coli (rec. season geomean), 284/100 ml E. coli (rolling 7 days of activation geomean) and 0.038 mg/l residual chlorine NTE.	<ol style="list-style-type: none"> 1. Work Plan: Submit work plan for ballasted flocculation⁶ pilots within 6 months after submission of pilot report for CEHRT in PEB that indicates failure to achieve performance criteria in Control Measure 4. 2. Pilot Testing Report: Within 12 months of Work Plan Approval 3. Design Commencement of plant improvements and PEB ballasted flocculation⁶ system: Within 6 months of Pilot Testing Report Approval 4. Construction Award for plant improvements and PEB 150 MGD ballasted flocculation⁶ system: Within 18 months of Design Commencement 5. Construction Completion of plant improvements and PEB ballasted flocculation⁶ system: Within 30 months of construction award
Easterly CSO Projects³						
6	Euclid Creek Tunnel/Dugway Storage System	24 ft diameter storage tunnel, dewatering pump station, and consolidation/relief sewers that capture and store the CSO within Euclid and Dugway tributary sewersheds.	Outfalls 206, 208, 209, 210, 211, 212, 214, 230, 231, 232, 239, 242	Provide a minimum of 117 MG of effective storage volume ⁷ to capture flow from CSO outfalls 206, 208, 209, 210, 211, 212, 214, 230, 231, 232, 239, and 242.	When incorporated with all of the Euclid Creek and Dugway Brook tunnel components improvements, reduce overflow events to 2 or less in a typical year	<ol style="list-style-type: none"> 1. Bid Year: 2010 2. Achievement of Full Operation: 2020
7	Shoreline Tunnel System	21 ft diameter storage tunnel and consolidation sewers that capture and store CSO from the outfalls leading to Lake Erie from the area near East 12th Street to the connection of the Dugway/Doan Storage Tunnel system in Forest Hill Park. Includes multiple drop structures near existing outfalls to capture CSO.	Outfalls 093, 094, 095, 096, 097, 098, 200, 201, 202, 203, 204, and 205	Provide a minimum of 43 MG of effective storage volume ⁷ to capture flow from CSO outfalls 093, 094, 095, 096, 097, 098, 200, 201, 202, 203, 204, and 205. Dewater into the ECT/ECT tunnel system.	When completed with all of the Shoreline Area tunnel components improvements, reduce overflow events to 2 or less at Priority outfalls, and 3 or less at other outfalls in a typical year	<ol style="list-style-type: none"> 1. Bid Year: 2021 2. Achievement of Full Operation: 2027
8	Doan Valley Tunnel System	17 ft diameter storage tunnel and consolidation/relief sewers that capture and store CSO from Doan Brook Area to the Dugway West Interceptor relief sewer. This includes a 8.5 ft consolidation sewer (MLK/Chester Conveyance Tunnel) to convey captured flow from the western CSO regulator locations along Doan Brook and 6 ft consolidation sewer (Woodhill Conveyance Tunnel) to convey combined sewer flow, a portion of relief flow, and some dry weather flow.	Outfalls 073, 217, 218, 219, 220, 221, 222, 223/224, 226, and 234	Provide a minimum of 16 MG of effective storage volume ⁷ to capture flow from CSO outfalls 073, 217, 218, 219, 220, 221, 222, 223/224, 226, and 234.	When completed with all of the Doan Valley tunnel components improvements, reduce overflow events to 2 or less at Priority outfalls, and 3 or less at other outfalls in a typical year	<ol style="list-style-type: none"> 1. Bid Year: 2017 2. Achievement of Full Operation: 2021
9	Superior Avenue Pump Station Upgrade	Upgrade of existing pump station to increase pumping capacity and wet well storage for purposes of providing sufficient conveyance and storage capacity for tributary regulators E-26, E-27, E-28, and the Stones Levee Pump Station	Outfalls 090, W, 11th/Superior Pump Station CSO	Upgrade the SAPS firm pumping capacity to 10.5 mgd and provide wet weather storage within the wet well.	Reduce overflow events to 2 or less in a typical year	<ol style="list-style-type: none"> 1. Bid Year: 2016 2. Achievement of Full Operation: 2018

Appendix 1

	Control Measure	Description	CSOs Controlled	Design Criteria	Performance Criteria in a Typical Year ¹	Critical Milestones
10	Stones Levee Pump Station Upgrade	Project includes an upgrade to the pump station and a new near-surface storage tank and consolidation sewer from tributary regulator E-25. The additional pumping capacity will also assist in alleviating surcharging in the combined sewer along West 3rd Street. Regulator modifications to regulator E-25 which is tributary to CSO-235.	Outfalls 235, Stones Levee Pump Station CSO; surcharging relief	Upgrade the SLPS firm pumping capacity to 1.5 mgd and provide wet weather storage adjacent to the wet well.	Reduce overflow events to 3 or less in a typical year	1. Bid Year: 2016 2. Achievement of Full Operation: 2017
11	Canal Road In-Line Storage	Replace regulators E-25, E-26, and E-27 with a two-stage static control system to utilize the available storage in the existing combined sewer upstream of the control structure.	Outfalls 090, 235; Additional storage capacity and flow attenuation	Provide in-line storage along Canal Road.	Reduce overflow events to 3 or less in a typical year	1. Bid Year: 2017 2. Achievement of Full Operation: 2018
12	Flood Control & System Enhancement	District and intercommunity relief sewers that solely provide flooding relief for the 5-year, 6-hour design storm	Flooding relief for 5-year, 6-hour design storm	Provide capacity to carry the 5-year 6-hour design storm	Capacity to carry the 5-year 6-hour design storm	1. Bid Year: 2032 2. Achievement of Full Operation: 2034
13	East 55th Relief Sewer	Parallel relief sewer to provide wet weather flood relief for the existing E. 55th Street Interceptor.	Flooding relief for 5-year, 6-hour design storm	Provide capacity to carry the 5-year 6-hour design storm	Capacity to carry the 5-year 6-hour design storm	1. Bid Year: 2031 2. Achievement of Full Operation: 2032
Westerly CSO Projects⁴						
14	Westerly Tunnel System	24 ft and 10ft diameter storage/conveyance tunnel system with dewatering pump station and consolidation sewers that capture and store the CSO within Westerly tributary sewersheds	Outfalls 074, 075, 080, 087	Provide a minimum of 36 MG of effective storage volume ⁷ to capture flow from CSO outfalls 074, 075, 080 and 087.	When completed with all of the Westerly Tunnel area tunnel components improvements, reduce overflow events to 2 or less at Priority outfalls, and 3 or less at other outfalls in a typical year	1. Bid Year: 2020 2. Achievement of Full Operation: 2024
15	Columbus Road Storage Tank	Storage tank to capture overflow from regulator WR-18 and store flows until capacity is available in the LLI.	Outfall 078	Storage facility sized to capture effective volume of 0.33 MG CSO from CSO 078 outfall.	Reduce overflow events to 0 in a typical year	1. Bid Year: 2018 2. Achievement of Full Operation: 2019
16	Center Street Storage Tank	Replace regulator WR-9 with a small, gravity draining storage tank to control overflows to 076. WR-9 acts as a relief point for the Low Level Interceptor (LLI) and the storage tank will allow for the overflows to stored until capacity is available in the LLI.	Outfall 076	Storage facility sized to capture effective volume of 0.16 MG CSO from CSO 076 outfall.	Reduce overflow events to 0 in a typical year	1. Bid Year: 2023 2. Achievement of Full Operation: 2024
17	West Third Street Storage Tank	Storage tank to capture overflow from regulator WR-8 and store flows until capacity is available in the combined system.	Outfall 082	Storage facility sized to capture effective volume of 0.055 MG CSO from CSO 082 outfall.	Reduce overflow events to 4 or less in a typical year	1. Bid Year: 2024 2. Achievement of Full Operation: 2025
18	Mary Street Pump Station Upgrade	Upgrade existing pump station from 8 mgd to 10 mgd, upgrade of influent combined sewer from 18-in to 27-in, and modifications to the several upstream tributary regulators to maximize in-line storage.	Outfall 086	Upgrade facility to pump flows tributary to the Mary Street PS up to a firm capacity of 10 mgd.	Reduce overflow events to 4 or less in a typical year	1. Bid Year: 2015 2. Achievement of Full Operation: 2017
19	Jefferson Avenue Separation	Construct a sanitary sewer along Jefferson Avenue parallel to the combined sewer tributary to regulator WR-7A. New sanitary sewer would tie in downstream of regulator and the dry weather outlet from WR-7A bulkheaded. CSO-240 would become a stormwater only outlet.	Outfall 240	Parallel sanitary sewer to provide separate conveyance from combined system.	Reduce overflow events to 0 in a typical year	1. Bid Year: 2027 2. Achievement of Full Operation: 2028
20	West 3rd St/Quigley Parallel Storage System	Replace systems upstream of regulator WR-1 and regulator WR-2 with orifice/weir control systems and larger sewer pipes to control overflows to CSO-089	Outfall 089	Provide outlet restrictions and parallel pipe storage for captured CSO.	Reduce overflow events to 2 or less in a typical year	1. Bid Year: 2021 2. Achievement of Full Operation: 2021
Southerly CSO Projects⁵						

Appendix 1

	Control Measure	Description	CSOs Controlled	Design Criteria	Performance Criteria in a Typical Year ¹	Critical Milestones
21	Southerly Tunnel System	23 ft diameter tunnel storage system with dewatering pump station and consolidation relief sewers that capture CSO from outfalls leading to the Cuyahoga River replacing the existing Southerly Interceptor by conveying dry and wet weather flows to the Southerly Plant.	Outfalls 033, 035, 036, 039, 040, and 072	Provide a minimum of 54 MG of effective storage volume ⁷ to capture flow from CSO outfalls 033, 035, 036, 039, 040, and 072.	When completed with all of the Southerly Interceptor Area tunnel components improvements, reduce overflow events to 3 or less in a typical year	1. Bid Year: 2024 2. Achievement of Full Operation: 2030
22	Big Creek Tunnel System	20 ft diameter tunnel system with 6 ft diameter dewatering sewer and consolidation/relief sewers that captures CSOs from outfalls leading to Big Creek, Spring Creek, and Rocky River and conveys the flows to the Southerly Plant through existing Big Creek Interceptor.	Outfalls 043, 044, 049, 050, 051, 053, 054, 055, 056, 057, 058, 059, 233, 238, & Cooley Avenue	Provide a minimum of 46 MG of effective storage volume ⁷ to capture flow from CSO outfalls 043, 044, 049, 050, 051, 053, 054, 055, 056, 057, 058, 059, 233, 238, & Cooley Avenue.	When completed with all of the Big Creek Interceptor Area tunnel components improvements, reduce overflow events to 3 or less in a typical year	1. Bid Year: 2026 2. Achievement of Full Operation: 2035
23	CSO-045 Storage Tank	Storage tank to capture flows tributary to Jennings Road Pump Station (CSO-045)	Outfalls 045, 088	Storage facility sized to capture effective volume of 1.1 MG CSO from CSO 045 and 088 outfalls.	Achieve 4 overflows or less in a typical year	1. Bid Year: 2021 2. Achievement of Full Operation: 2023
24	CSO-063 Relief / Consolidation Sewer	Interbasin diversion of combined flows to the Southwest Interceptor via 4' diameter pipe and new SWI drop structure	Outfall 063	Convey controlled wet weather flows to SWI up to prescribed control level.	Achieve 1 overflows or less in a typical year	1. Bid Year: 2013 2. Achievement of Full Operation: 2014
25	Stickney Creek Intercommunity Sewer	Intercommunity relief sewer along the existing Stickney Creek Sanitary System to relieve flooding problems. Tributary to Stickney Creek Area Consolidation Sewer.	surcharging and flooding relief	Provide capacity to carry the 5-year 6-hour design storm	Capacity to carry the 5-year 6-hour design storm	1. Bid Year: 2033 2. Achievement of Full Operation: 2034

1 - Typical year of storm events as defined in the CSO Phase II Facilities Plans for the Westerly, Doan Valley, Easterly and Southerly Districts.

2 - Discharge from 1st Stage outfall does not receive nitrification and is expected to meet plant-wide ammonia limits when averaged with discharge from 2nd Stage outfall.

3 - Easterly priority CSOs are 001, 073, 200, 202, 204, 206, 209, 210, 211, 221, 222, 230, 232 and 242. Easterly non-priority CSOs are 208, 212, 214, 231, 239, 090, 093, 094, 095, 096, 097, 098, 201, 203, 205, 217, 218, 219, 220, 223/224, 226, 234, 235, Superior Ave Pump Station (PS), and Stones Levee PS.

4 - Westerly priority CSOs are 002 and 080. Westerly non-priority CSOs are 074, 075, 076, 078, 082, 086, 087, 088, 089 and 240.

5 - Southerly priority CSOs are 057, 058 and 063. Southerly non-priority CSOs are 043, 044, 045, 049, 050, 051, 053, 054, 055, 056, 059, 233, 238, and Cooley Avenue.

6 - Ballasted flocculation: A physical-chemical treatment process that uses continuously recycled media and a variety of additives to improve the settling properties of suspended solids through improved floc bridging (USEPA Wastewater Fact Sheet)

7 - Effective storage volume is defined as the volume of combined sewage that can reliably enter and be stored by the specified tunnel during wet weather events and is the volume required to store CSO volumes during wet weather events to meet identified Performance Criteria plus a 10% contingency. Effective storage volume is storage tunnel volume; such volume may include usable volumes in tunnel adits and tunnel drop shafts. Effective storage volume does not include volume that may be stored in consolidation, conveyance or dewatering tunnels/sewers or in near-surface tunnel-related structures.

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Regional Sewer District*

Consent Decree
Appendix 2

Post-Construction Monitoring Program

Appendix 2 - Post-Construction Monitoring Program

Contents:

- 2.1 Introduction
- 2.2 Performance Criteria
- 2.3 Post-Construction Monitoring and Data Collection
- 2.4 Performance Assessment
- 2.5 Quality Assurance/Quality Control
- 2.6 Progress Reporting
- 2.7 Summary

2.1 Introduction

The purpose of the Post-Construction Monitoring Program (PCMP) is to verify that projects constructed as part of the Long Term Control Plan (LTCP) meet the Performance Criteria stipulated in Table 1.1 of Appendix 1 and the water quality goals established during the development of the CSO Phase II Facilities Plans for the Easterly, Westerly and Southerly combined sewer Districts. Terms used in this Appendix that are defined herein, or in the Consent Decree or any other Appendix thereto shall have the meanings assigned to them in such documents.

NEORSD developed LTCPs for systems tributary to the Easterly, Southerly and Westerly wastewater treatment plants. NEORSD's CSO program was developed with water quality monitoring and modeling components in order to identify water quality impairments attributable to wet weather discharges from the system. The results of these studies were coupled with extensive hydrologic and hydraulic modeling activities to understand the systems' response to wet weather events. In order to calibrate these models, NEORSD also completed several flow monitoring programs to quantify sewer flows. These monitoring programs, model development and application as well as evaluation of control alternatives to meet water quality goals were completed with specific LTCP project recommendations.

The last series of these studies was completed in March 2002 as required by the CSO NPDES Permits for the Easterly and Southerly combined sewer service areas. Following the submission of these plans NEORSD has continued with the design and construction of some of the recommended facilities including early action projects in the Westerly, Easterly and Southerly Districts, and an initial LTCP project in the Easterly District. In addition, NEORSD engaged in negotiations with the United States and Ohio EPAs and the U.S. Department of Justice to agree upon a consent decree that would govern the scope and implementation schedule of the remaining LTCP recommendations.

The recommended LTCP projects depicted in Appendix 1 (treatment facilities, tunnels, pump stations, relief sewers, etc) comprise “Gray Infrastructure” control measures. In addition, NEORS will also be developing “Green Infrastructure” control measures for wet weather control providing stormwater inflow reduction and/or detention to reduce overflow volumes. These control measures have not been developed in terms of location and type(s) of Green Infrastructure control measures although the general performance criteria and conditions for the program are outlined in Appendices 3 and 4. It is NEORS’s intent to implement these Green Infrastructure control measures subsequent to a Green Infrastructure Feasibility Study and concurrent with the LTCP projects as a means to provide additional CSO control and provide for credits where Green Infrastructure can be substituted for Gray Infrastructure control measures, in whole or in part, in accordance with the provisions governing Tier 1b and Green for Gray substitutions under the Consent Decree. If this objective is accomplished, the projects selected will complement the LTCP projects and would be integrated into the PCMP monitoring and evaluation for both the Gray and Green Infrastructure components.

The main elements of the PCMP include the following:

- A process to determine whether the CSO control measures are meeting the Performance Criteria identified in Appendix 1.
- A process for assessing environmental benefits attributable to the CSO control measures.
- A monitoring schedule, initial sampling locations, associated monitoring, modeling procedures to collect data related to the Performance Criteria, and the impacts from CSOs on E. coli levels in CSO impacted receiving streams and Lake Erie; and
- Evaluation and analysis of the monitoring data to determine whether CSO control measures are achieving desired outcomes and for reporting progress to the regulatory agencies and general public.

2.1.1 Regulatory Requirements

U.S.EPA requires CSO communities to conduct a post-construction monitoring program during and after LTCP implementation “to help determine the effectiveness of the overall program in meeting [Clean Water Act] requirements and achieving local water quality goals.”¹ This program should collect data that measure the effectiveness of CSO controls and their impact on water quality, and should utilize existing monitoring stations used in previous studies of the waterways and sewer system in order to compare results to conditions before controls were put in place. The program should include a map of monitoring stations, a record of sampling frequency at each station, a list of data to be collected, and a quality assurance/quality control (QA/QC) plan.

In U.S.EPA’s December 2001 Report to Congress: Implementation and Enforcement of the Combined Sewer Overflow Control Policy, the agency noted the difficulty of establishing a monitoring and tracking program for CSO control programs. “Monitoring programs need to be targeted and implemented in a consistent manner from year to year to be able to establish pre-

¹ *Combined Sewer Overflows, Guidance for Long-Term Control Plan* (EPA 832-B-95-002, August 1995) p. 4-15.

control baseline conditions and to identify meaningful trends over time as CSO controls are implemented,” the report said. “In practice, it is often difficult, and in some instances impossible, to link environmental conditions or results to a single source of pollution, such as CSOs. In most instances, water quality is impacted by multiple sources, and trends over time reflect the change in loadings on a watershed scale from a variety of environmental programs.” The report also noted that weather conditions and rainfall totals vary significantly from storm to storm and year to year, making comparisons difficult.

2.1.2 Purpose and Scope

The Post-Construction Monitoring Program will collect data needed to document receiving streams and Lake Erie improvements that can be attributed to the implementation of the control measures identified in the LTCP, to evaluate whether CSO control measures have met the Performance Criteria, and whether NEORSD’s CSOs comply with the NPDES permits. In order to enable comparisons to historic data, NEORSD will integrate the required CSO post-construction monitoring program into its current monitoring programs. The general scope of the post-construction monitoring program will include preparation and execution of the monitoring plan, as well as evaluation of the effectiveness of CSO control measures. The combined sewer districts included in this plan include the Easterly, Southerly and Westerly Districts. The following receiving waters are covered by this PCMP - Lake Erie, Cuyahoga River, Big Creek, Burke Brook, Doan Brook, Dugway Brook, Euclid Creek, Green Creek Culvert, Kingsbury Run, Morgana Run, Nine Mile Creek, Rocky River, Shaw Brook Culvert, West Creek, Spring Creek and Treadway Creek. The monitoring program has been developed based upon the following scope of work:

- **Document Current Baseline Conditions:** During the CSO Phase II Facilities Plans for the Easterly, Southerly and Westerly Districts, NEORSD performed a comprehensive assessment of the baseline conditions for CSO frequency and volumes for the “typical year” as well as baseline conditions for water quality within the receiving streams and Lake Erie. These assessments will be used as the baseline conditions for comparing the post-construction performance of the various control measures within the LTCP.
- **Identify Parameters of Concern:** NEORSD evaluated CSO control measures to analyze their ability to improve receiving streams and Lake Erie water quality for specific parameters of concern. During the development of the LTCPs and subsequent discussions with the U.S. EPA and Ohio EPA, NEORSD identified E. coli bacteria as the main parameter of concern. NEORSD will use E. coli bacteria to measure the effect of its LTCP CSO control measures on its receiving streams and Lake Erie.
- **Prepare and Execute Post-Construction Monitoring:** The monitoring program will evaluate whether specific CSO control measures are performing as designed and constructed to meet its Performance Criteria. The program will identify how NEORSD will collect data needed to document receiving waters improvements and any pollutant reduction achieved through implementation of these control measures. Sections 2.2 through 2.5 further describe NEORSD’s PCMP.

- Report results to State and Federal Agencies: The results of the PCMP will be reported to the U.S. EPA and the Ohio EPA. Upon completion of each CSO control measure, NEORSD will prepare a Control Measure Report that evaluates whether the constructed projects that comprise that Control Measure have achieved the desired results. Section 2.6 presents NEORSD’s approach for tracking and reporting on the achievement of Performance Criteria described in Table 1.1 of Appendix 1.
- Provide Public Information on Water Quality: Information from the monitoring program will be available to the general Cleveland area public and interested parties. This information will allow the public to be informed and educated relative to NEORSD’s water quality improvement programs and water quality issues.

2.2 Performance Criteria

The Performance Criteria developed during the CSO Control Program by NEORSD were based on number of overflows per a “typical year” as defined in the CSO Phase II Facilities Plans for the Easterly, Southerly and Westerly Districts. The original LTCP recommended numbers of overflows that have been updated through subsequent discussions with the U.S. EPA and the Ohio EPA. Appendix 1 shows the Performance Criteria for the various control measures comprising the current LTCP, design criteria, critical milestones and provides information on outfalls controlled.

2.3 Post-Construction Monitoring and Data Collection

An important element of the PCMP is the type, location and frequency of monitoring. The intent is not to replicate the extent of intense monitoring that was performed during the development of the LTCP. To the extent possible, these monitoring locations will be used again for the performance monitoring. The difference is that density of monitoring locations will be reduced; however, the duration of monitoring will likely be longer on average than what was done during the planning phase. These locations will be reviewed prior to installation of new monitoring for the PCMP. This section describes the various types of monitoring to be performed.

Flow and activation monitoring will be performed for a one-year post-construction monitoring period following “Achievement of Full Operation” for each control measure as indicated in Table 2.1 and discussed in Section 2.3.1, and CSO activation monitoring will again be performed for a one year period following implementation of all Control Measures for each district (Easterly, Southerly, Westerly).

In-stream monitoring will be performed on a continued system-wide basis for the duration of the LTCP implementation beginning at the Achievement of Full Operation of the first control measure to monitor stream improvements over time, as discussed in Section 2.3.2.

General performance criteria and monitoring approaches for the green infrastructure projects will be integrated into the PCMP during planning of the green infrastructure projects as discussed in Appendices 3 and 4.

2.3.1 Flow Monitoring

Numerous temporary flow monitors were installed during the development of the CSO LTCP to calibrate the hydraulic models. These monitors have since been removed. NEORSRD will install flow and/or activation monitors at numerous locations and utilize, where applicable, existing permanent flow meters to validate and calibrate the models, as described in Section 2.4.1, during the post-construction phase of the CSO control measure implementation. These locations were considered to reflect overflow monitoring in all priority outfall locations, including at least one CSO location within each control measure and represent the CSOs contributing 86% of the current baseline CSO volume and 96% of the CSO volume expected following implementation of the CSO controls required by this Consent Decree. These locations are listed in Table 2.2. CSOs not monitored have remaining volumes less than 1 MG each.

The flow meter locations listed in Table 2.2 are identified by outfall. However, the actual flow monitors would be placed within the new diversion structures that divert flow to either the associated control facility (i.e., tunnel, storage tank, etc.) or the CSO outfall if the capacity of the control measure is exceeded. These diversion structures are situated downstream of the combined sewer regulator structures, on the outfall conduits. When the control facility exceeds its capacity, these structures divert overflow to this existing conduit, and a flow monitor would be placed within this structure to measure these overflows. For some outfalls, such as the Dugway Brook (CSO-230), multiple diversion structures would be constructed upstream of the permitted outfall location diverting flow to the control facility. In these cases, each diversion structure would be equipped with a flow monitor to measure the total overflow activation event in a cumulative manner. These locations will be confirmed and additional monitoring will be performed as deemed necessary as the program design advances to ensure that the appropriate data to validate and/or calibrate the model and subsequently prove achievement of the Performance Criteria is collected. Augmentation of the monitoring locations will proceed with approval from Ohio EPA and U.S. EPA.

Planning, design and construction of the control measures will take place over several years. Consequently, the dates for “Achievement of Full Operation” will vary by project. Table 2.1 summarizes the Achievement of Full Operation for these control measures, which is the year that would initiate the post-construction monitoring for each control measure, and how the CSO control measures in Appendix 1 will be assessed. NEORSRD will perform this evaluation by collecting precipitation and CSO outfall monitoring data for a one-year post-construction monitoring period following Achievement of Full Operation of each CSO control measure as identified in Appendix 1. Following collection system hydraulic model validation using the selected monitoring data, a “typical year” simulation will determine performance relative to the overflow frequency for each control measure.

2.3.2 In-stream Monitoring

NEORSRD performed an analysis of water quality conditions, for baseline conditions and for conditions after the implementation of the recommended LTCP projects. This analysis was performed to establish levels of CSO controls that would result in water quality benefits. The

analysis was performed primarily through the simulation of fecal coliform bacteria loads in the receiving streams, rivers and lake. The analysis involved the following streams: Big Creek, Burke Brook, Doan Brook, Dugway Brook, Euclid Creek, Green Creek Culvert, Kingsbury Run, Mill Creek, Morgana Run, Nine Mile Creek, Rocky River, Shaw Brook Culvert, West Creek, Spring Creek and Treadway Creek. These streams were modeled and the outputs from these models were used to estimate impacts on either the Cuyahoga River or Lake Erie, or both, depending on which is the downstream receiving water.

The LTCP identified fecal coliform bacteria loads for dry weather, storm water and CSOs. This was done to document the specific contribution of CSOs to violations of the in-stream bacteria standards. Through discussions with the U.S. EPA and Ohio EPA, E. coli bacteria were identified as the pollutant of concern to measure during the post-construction monitoring period. NEORSD will measure E. coli bacteria counts in order to identify trends in water quality. Biological and other monitoring data (to the extent that these are already being collected by NEORSD) can be used as a check since NEORSD is already routinely monitoring the lake and points along tributary rivers and streams. NEORSD has performed several special lake monitoring projects. Among these are fish tissue sampling, which contributed to the State's basis for issuing safe fish consumption advice, and the ongoing daily sampling at two area beaches for bacteriological analysis, which provides the State's basis for posting safe swimming advice at these locations.

Based on the requirements of the CSO permits issued to NEORSD, in-stream monitoring of biological water quality indicators in Big Creek, Doan Brook, Euclid Creek and Mill Creek have been collected for use in establishing baseline conditions prior to implementation of the recommended CSO LTCP. NEORSD will continue to monitor for E.coli in these streams. NEORSD proposes additional sites for E. coli monitoring in the Cuyahoga River, Dugway Brook, Nine Mile Creek, Ohio Canal, Rocky River, Shaw Brook, Spring Creek, West Creek and Treadway Creek. These sites are appropriate for the purposes of the Post-Construction Monitoring Program to document achievement of Performance Criteria and to document improvements to water quality over time. These sites are listed in Table 2.2 and illustrated in Figure 2.2. NEORSD may add, modify, remove or relocate monitoring stations, as necessary, during or after implementation of control measures to address any changes that may be necessary as a result of planning, design and construction, provided NEORSD obtains approval from the U.S. EPA and Ohio EPA.

2.3.3 Outfall Monitoring for Activations

Pursuant to the EPA's CSO permit and EPA's CSO Nine Minimum Controls Guidance, NEORSD provides public notification of CSO occurrences at various CSO locations. NEORSD monitors CSO activations on a continuous basis at these locations. NEORSD will continue to monitor and collect this type of data at the relevant locations which are listed in Table 2.2 as "activation only" and illustrated in Figure 2.1 Following implementation of all control measures for each district (Easterly, Southerly, Westerly), NEORSD shall conduct one year of activation monitoring at all CSO monitoring locations listed in Table 2.2. These data will be used to validate the models and demonstrate achievement of the Performance Criteria.

2.3.4 Outfall Monitoring for CSO Treatment Facilities

The current list of projects includes Chemically Enhanced High Rate Treatment (CEHRT) facilities at the Easterly and Westerly WWTPs to control CSO-001 and CSO-002, respectively. The monitoring plan for these projects will be developed separately and used to demonstrate effectiveness of the CEHRT facilities. These facilities will include monitoring systems to measure E. coli, total suspended solids and chlorine residual in the treated effluent to demonstrate achievement of their respective Performance Criteria. In addition, these facilities will monitor the overflows that exceed the peak treatment capacity of the CEHRTs. For informational purposes, NEORS D will also measure CBOD, nitrogen, and phosphorus.

2.3.5 Wastewater Treatment Plant Monitoring

Routine WWTP monitoring will be used to demonstrate compliance for control measures that require increased secondary capacity in order to eliminate primary effluent bypasses (PEB) (in a typical year). PCMP compliance of the increased secondary treatment capacity can be performed within the normal plant monitoring contained in their respective NPDES permits. NEORS D will continue to flow monitor the PEB.

2.3.6 Rainfall Monitoring

NEORS D currently maintains a rain gauge network within the service area. Table 2.3 and Figure 2.3 show these existing rain gauges. These rain gauges will be utilized in each Control Measure post-construction monitoring period and in the district-by-district post-construction monitoring periods to measure rainfall within the service area for each CSO control measure. If required, additional rain gauges will be installed to ensure accurate measurement of rainfall, and NEORS D will consider the use of radar-rainfall measurements to improve accuracy of rainfall estimates, and particularly where rain gage coverage is not adequate or difficult to implement.

Table 2.3 NEORS D’s Rain Gauges

Site ID	
RNT	North Olmsted
RWF	Westlake
RST	Strongsville
ROA	Oakwood
RJA	James Rhodes H.S.
RBT	Brook Park
RSG	Shaker Heights
RNR	North Royalton
ROL	Olmsted Falls
RBC	Brecksville
RIN	Independence
RMA	Maple Heights
RJO	John Marshall H.S.
RPM	Parma
RSY	Southerly WWTP
RMY	Mayfield
RBH	Beachwood
RDA	Division Ave P.S.
RDR	Dille P.S.
RWK	Wade Park
RCL	Cleveland Heights
REA	Easterly WWTP
RMN	Moreland Hills
RMD	Macedonia P.S.
RSO	South Euclid

2.3.7 Data Management

NEORS D currently maintains its data within various data management systems for the collection system and its three wastewater plants. Considering the number of monitoring locations and types of data that are being collected, the retrieval, record keeping and analysis of the data is essential in maintaining an effective monitoring program. Field procedures and QA/QC approaches to ensure that the collected data are suitable for the intended analysis are also a critical component of this program. This PCMP will use the existing NEORS D data management systems to store the data. The effectiveness of the CSO control measures will be evaluated using appropriate modeling tools. The PCMP will be designed to ensure collection of appropriate data; establish consistency of sampling methods and data acquisition; and define performance standards for maintaining data integrity. All measures necessary will be taken to validate, track, store and manage the collected data to ensure that monitoring objectives are achieved.

Sampling and modeling protocols will be administered and conducted by experienced personnel responsible for the existing database and model. As data are generated during the PCMP, the program may need to be revised to accommodate alternative data collection techniques or data evaluation approaches to meet monitoring objectives. Any revisions or additions to the data retrieval or management aspects of the PCMP will be submitted to the U.S. EPA and Ohio EPA for review and approval.

2.4 Performance Assessment

2.4.1 Model-Based Approach to Assessing Compliance

Under the model based approach to demonstrate compliance, NEORSD plans to update and utilize the various CSO models that were prepared during the development of the LTCP. The models will be used to perform appropriate simulations to demonstrate compliance with the performance criteria for each CSO control measure identified in Appendix 1. Models will also be used in conjunction with monitoring data to assess the performance of Green Infrastructure control measures installed pursuant to Appendices 3 and 4. This approach is outlined in the following steps:

1. Collect selected rainfall and CSO outfall data for the post-construction monitoring period of each CSO control measure upon completion, and rainfall data and activation data for all selected CSO outfalls following implementation of all control measures for each district (Easterly, Southerly, Westerly).
2. Perform quality assurance and quality control of the data collected in Step 1.
3. Utilize the appropriate LTCP CSO model and rainfall data collected during the monitoring period to run simulations of CSO discharges for the post-construction monitoring period.
4. Adjust precipitation/runoff information used in the model to take into account the effects of green infrastructure implementation, reflecting green infrastructure monitoring data.
5. Compare the simulation outputs to the CSO monitoring data for the post-construction monitoring period to determine whether re-calibration of the hydraulic model is required. Model re-calibration will not be required if the model-predicted activations are not less than the monitored CSO activations for each remaining CSO outfall for the post-construction monitoring period. Otherwise, model re-calibration will be required in accordance with Steps 6 -8 below.
6. For re-calibration, select two or more appropriate rainfall events from the post-construction monitoring period.
7. Develop an initial data set for use with the model and perform successive applications of the model with appropriate parameter adjustments until the degree of agreement between the model output and the CSO monitoring data for the post-construction monitoring period meets the criteria set forth in Step 5, above. In making re-parameterization adjustments, NEORSD will consider the inherent variability in both the collection system model and in

flow monitoring data, and will exercise sound engineering judgment and best industry practices so as to not compromise the overall representativeness of the model.

8. Upon completion of Step 7, NEORS shall run an additional continuous simulation for the entire post-construction monitoring period to verify the recalibrated model. Thereafter, NEORS shall compare the continuous simulation outputs to the CSO monitoring data described in Step 5 to determine whether additional recalibration is needed. If so, NEORS shall conduct recalibration in accordance with steps 6 through 7 until the model achieves the criteria described in Step 5, above.
9. Overflow frequency performance criterion is based upon a “typical year” developed as part of the CSO Phase II Facilities Plans. The “typical year” was comprised of actual rain events recorded at Cleveland Hopkins Airport based on an analysis of 46 years of rainfall recorded at this site. Table C-1 - Storm Events for Typical Year Continuous Year Simulation from the *CSO Facilities Planning Summary Report, March 2005* is attached to the PCMP. This table lists all the typical year storms, the dates, the hour, duration, depth and intensity of rainfall.
10. NEORS will utilize the validated, and/or re-calibrated, hydraulic models to run the “typical year” to determine whether the CSO control measures have achieved the Performance Criteria identified in Appendix 1. If the modeled overflow frequency exceeds this level for any of the CSO control measures, NEORS shall submit an analysis that will include: (1) the factors causing the additional overflow frequency, (2) any impact on water quality from the additional overflow frequency, (3) control options, including green infrastructure improvements, to reduce the overflow frequency to meet the Performance Criteria levels, (4) associated costs from the additional control options, (5) any expected benefits from such control options and (6) a recommendation of additional control measures necessary to meet water quality requirements.

2.4.2 Evaluating the Performance of Green Infrastructure CSO Control Measures

NEORS will submit its proposed Tier 1 green infrastructure post-construction monitoring program in accordance with Appendix 3. NEORS may also submit proposals to substitute green infrastructure CSO control volumes for gray infrastructure control volumes in accordance with Appendix 4. Once approved by U.S. EPA and Ohio EPA, NEORS shall perform green infrastructure post construction monitoring (GIPCM) for the green infrastructure control as described in Appendices 3 and 4.

2.4.3 Control Measures Reports

Following Achievement of Full Operation of each CSO Control Measure listed in Appendix 1, NEORS shall submit a Control Measures Report to the U.S EPA and Ohio EPA for their approval. The Control Measures Report will be submitted within 24 months of the date of Achievement of Full Operation for each control measure. The reports will include information for the completed control measures implemented and data related to the following:

- Description of the area served by the particular CSO Control Measure, affected receiving waters, and CSO Control Measures being evaluated
- CSO Monitoring and Rainfall Monitoring Results
- Evaluation of the CSO Control Measures
- Significant Variances and Impacting Factors (with regard to verification of level of control)
- Re-evaluation and Corrective Actions as outlined in section 2.4.4 (if necessary)

The green infrastructure improvements schedule for Control Measure reporting would be developed as part of the Green Infrastructure Feasibility Study and would be reviewed and approved upon completion of the study. NEORSD can submit the Control Measures Report for the Big Creek Tunnel System as part of the Final Post Construction Monitoring Program Report pursuant to section 2.6.1.

2.4.4 Corrective Action Plans

If, following post construction monitoring, the analysis conducted pursuant to Sections 2.4.2 and 2.4.3 above fails to demonstrate that the CSO control measures, combined with any Green for Gray substitutions if applicable, have met the pertinent performance criteria in a typical year set forth in Appendix 1, NEORSD shall submit to EPA and Ohio EPA for their approval, a Corrective Action Plan (“CAP”) as part of the Control Measure Report. The CAP shall describe: (1) the specific measures to be carried out to address performance shortcomings and ensure the performance criteria in Appendix 1 are met; (2) a schedule, as expeditious as possible, for implementation of the corrective measures and (3) how the improvements when fully constructed shall be evaluated in accordance with this Appendix. The corrective measures described in the CAP shall achieve the performance criteria set forth in Appendix 1.

U.S. EPA and Ohio EPA shall review each CAP submitted by NEORSD. The Agencies may request clarifications or supplemental information to make informed decisions on each CAP. Upon the conclusion of reviews of the CAP, the Agencies will approve the CAP, approve with conditions, or disapprove the CAP. If a CAP is disapproved, NEORSD must submit a revised CAP addressing the deficiencies identified by U.S. EPA and Ohio EPA in the initial CAP. NEORSD shall implement those measures set forth in the approved CAP in accordance with the schedule in the approved CAP

2.4.4.1 Green Infrastructure Measures Implemented Pursuant to Appendix 4

Proposals to substitute green infrastructure control measures for gray infrastructure control measures will include a description of post-construction monitoring and modeling to be performed to determine whether the performance criteria set forth in Appendix 1 will be met upon completion and implementation of the control measures outlined in the Proposal. NEORSD shall implement the post-construction monitoring of green and gray infrastructure as described in approved proposals. If green infrastructure post-construction monitoring does not demonstrate that constructed green infrastructure components are meeting the performance criteria in a typical year on which the substitution was based, NEORSD may implement early corrective measures to address identified deficiencies. Early correction actions may include

measures such as constructing additional green infrastructure capacity or increasing the size and/or capacity of gray infrastructure control measures. Stipulated Penalties will not accrue and become payable if an individual green infrastructure control measure is not meeting the criteria on which the substitution was based beginning at the time the green infrastructure control measure begins operation. However, stipulated penalties will accrue and become payable as of the date of Achievement of Full Operation as defined in Appendix 1 if at the time the pertinent green and gray control measures together are not meeting the performance criteria for a typical year.

2.5 Quality Assurance/Quality Control

An important component of any CSO quality sampling effort includes sample preservation, handling, and shipping; chain of custody documentation; and quality assurance and quality control (QA/QC) procedures. The QA/QC procedures are essential to ensure that data collected in environmental monitoring programs are useful and reliable. NEORSD will employ quality control procedures to ensure consistent delivery of quality work and products for all aspects of the PCMP. The quality control procedures include documentation for the following:

- Monitoring and field measurement activities
- CSO outfall monitoring activities including installation activities, calibration records, field truthing equipment and maintenance, and data downloads
- Field sampling activities
- Laboratory analysis activities
- Rainfall monitoring activities
- Data retrieval, management and analysis activities
- Quality control reviews of all internal and external deliverables

Flow Monitoring Data

Data will be reviewed continually throughout the monitoring program by a data analyst to identify data gaps, questionable data, estimate uncertainty in flow data, and monitor service or gage maintenance needs. The data will be reviewed for the following items:

- consistent diurnal patterns, as applicable
- consistent flow vs. level patterns
- consistent level vs. velocity patterns (i.e., scatter graphs)
- correspondence with field points and wet weather responses to rainfall

Questionable data will be flagged and the raw data will be converted into final data by editing questionable data, where possible.

Upon installation and activation of each flow meter, field crews will take manual depth and velocity readings (when there is a reasonable amount of flow present) using independent instrumentation to confirm that the monitor in-situ yields data representative of actual field conditions, and to quantify uncertainty in the instrument's measurement of flow. All measurements, adjustments, and efforts undertaken during site visits will be logged. In addition to the manual measurements taken at installation, routine calibrations will be performed throughout the flow monitoring period including at least two wet weather calibrations. These routine calibrations will provide an independent confirmation that the meters are working properly.

Water Quality Data

The NEORSD Analytical Services Quality Manual and associated Standard Operating Procedures are on file with Ohio EPA. The Quality Assurance Officer at Analytical Service will send updates, revisions and any information on document control to Ohio EPA as needed.

2.6 Progress Reporting and Final Post Construction Monitoring Procedures

The post-construction monitoring program will evaluate whether CSO control measures are achieving the Performance Criteria. It will also assess water quality conditions in CSO receiving waters within the NEORSD combined sewer service areas against the baseline conditions identified in the CSO Phase II Facilities Plans for the Easterly, Southerly and Westerly districts. This section discusses how progress will be reported to the U.S. EPA, Ohio EPA and the public.

2.6.1 Final Post-Construction Monitoring Program Report

Within three years following Achievement of Full Operation for all of the LTCP projects, NEORSD shall submit a Final PCMP Report to the U.S. EPA and Ohio EPA for their approval, containing a consolidation of all of the information identified in Section 2.4.3 for each control measure, the results of the final district-by-district rainfall and activation monitoring of all CSOs listed in Table 2.2, a re-validation of the collection system models using the aforementioned CSO activation monitoring results for the outfalls listed in Table 2.2 for each District, water quality monitoring results, effluent testing results, plus any additional relevant information

collected since submittal of the Control Measures Reports. The purpose of the Final PCMP Report shall be to evaluate and document the performance of NEORSD's fully implemented LTCP CSO control measures on a system-wide basis (based upon CSO activation data and water quality monitoring). The report shall include an assessment of whether the improvements are meeting the Performance Criteria in accordance with Appendix 1 (CSO activation frequencies, bypass frequencies) and water quality based numeric and/or narrative effluent limitations applicable to CSO discharges in NEORSD's NPDES Permits. NEORSD shall also provide a further assessment of the long-term trends in water quality of NEORSD's receiving waters. If the Final PCMP Report fails to demonstrate that the Performance Criteria are met, NEORSD shall include in the report whatever further re-evaluation or corrective action necessary to meet the Performance Criteria as well as a schedule for such re-evaluation or corrective action. NEORSD shall then implement any further re-evaluations or corrective actions in accordance with the approved Final PCMP Report.

2.6.2 Progress Reports to Public

Public involvement, information and education is an important part of the overall LTCP Program development approach recommended by U.S. EPA's CSO Control Policy and utilized by NEORSD in the development of the control program. As part of the PCMP, public outreach activities will continue with periodic updates using various media available to NEORSD. Available media will include the NEORSD website, local newsprint, radio and television. Updates will include status of remaining construction projects, improvements or trends in monitored water quality parameters any available anecdotal evidence from public's interaction with the waterways.

2.7 Summary

NEORSD's Post-Construction Monitoring Program will determine the effectiveness of the CSO control program in achieving its performance requirements and water quality objectives. The program includes the following elements:

- Implementation of a defined monitoring program designed to measure reductions in overflow activations and changes in stream water quality
- Analysis and assessment of monitoring data and/or model simulation results to determine whether implemented CSO Control Measures are meeting the Performance Criteria in Appendix 1
- Analysis and assessment of in-stream monitoring data to establish trends in stream improvements
- Preparation of Control Measures Reports and a Final PCMP Report to document the success of the LTCP implementation or identify any shortcomings and necessary corrective action
- Dissemination of information on the LTCP implementation to NEORSD's rate payers and Cleveland area general public

NEORSD's Post-Construction Monitoring Program addresses the U.S. EPA and Ohio EPA requirements for monitoring the performance of the CSO control measures. NEORSD will use the Performance Criteria in Appendix 1 as performance measures to determine the effectiveness

of the overall LTCP CSO control measures, augmented by any additional green infrastructure improvements. NEORS D will use existing monitoring systems, augmented as necessary, to collect and evaluate data. This includes flow and/or activation monitoring, in-stream sampling, plant sampling and rain gauge monitoring. NEORS D shall also use the appropriate LTCP CSO hydraulic models to measure performance of the CSO control measures as described in Section 2.4. NEORS D shall submit Control Measures Reports to the U.S. EPA and Ohio EPA, as required, to demonstrate performance and achievement of LTCP objectives. In addition, NEORS D shall prepare public information reports to educate the public on the advancement of the program and the effectiveness of the control measures being implemented.

Table 2.1 – Post-Construction Performance Tracking

District	Control Measure	CSOs Controlled	Achievement of Full Operation Year (Commencement of Data Collection)	Expected Typical Year Performance (Overflow Frequency by Control Measure)	Post-Construction Performance (Overflow Frequency by Control Measure)	Overflow Frequency Criteria Achieved (Yes/No)
<i>Easterly Plant</i>						
Easterly	Treatment and Disinfection of CSO 001 using CEHRT	Outfall 001	Dependent on the approved pilot program schedule.	2 partially treated overflows/year		
<i>Westerly Plant</i>						
Westerly	Treatment and Disinfection of CSO 002 using CEHRT in all 6 Quadrants (quads).	Outfall 002	Dependent on the approved pilot program schedule.	3 partially treated overflows/year		
<i>Southerly Plant</i>						
Southerly	Increase Secondary Treatment Capacity and Treat Primary Effluent Bypass with CEHRT	PEB	Dependent on the approved pilot program schedule.	1 or less		
<i>Easterly CSO Projects</i>						
Easterly	Euclid Creek Tunnel/Dugway Storage System	Outfalls 206, 208, 209, 210, 211, 212, 214, 230, 231, 232, 239, 242	2020	2 or less		
Easterly	Shoreline Tunnel System	Outfalls 093, 094, 095, 096, 097, 098, 200, 201, 202, 203, 204, and 205	2027	2 or less		
Easterly	Doan Valley Tunnel System	Outfalls 073, 217, 218, 219, 220, 221, 222, 223/224, 226, and 234	2021	Priority outfalls = 2 or less; Nonpriority = 3 or less		
Easterly	Superior Avenue Pump Station Upgrade	Outfalls 090, W. 11th/Superior Pump Station CSO	2016 ²	2 or less		
Easterly	Stones Levee Pump Station Upgrade	Outfalls 235, Stones Levee Pump Station CSO; surcharging relief	2017	3 or less		
Easterly	Canal Road In-Line Storage	Outfalls 090, 235; Additional storage capacity and flow attenuation	2018	3 or less		
<i>Westerly CSO Projects</i>						
Westerly	Westerly Tunnel System	Outfalls 074, 075, 080, 087	2024	Priority outfalls = 2 or less; Nonpriority = 3 or less		
Westerly	Columbus Road Storage Tank	Outfall 078	2019	0		
Westerly	Center Street Storage Tank	Outfall 076	2024	0		
Westerly	West Third Street Storage Tank	Outfall 082	2025	4 or less		
Westerly	Mary Street Pump Station Upgrade	Outfall 086	2017	4 or less		

² Commencement of first flow monitoring for control measure and system-wide in-stream monitoring.

District	Control Measure	CSOs Controlled	Achievement of Full Operation Year (Commencement of Data Collection)	Expected Typical Year Performance (Overflow Frequency by Control Measure)	Post-Construction Performance (Overflow Frequency by Control Measure)	Overflow Frequency Criteria Achieved (Yes/No)
Westerly	Jefferson Avenue Separation	Outfall 240	2028	0		
Westerly	West 3rd St/Quigley Parallel Storage System	Outfall 089	2021	2 or less		
<i>Southerly CSO Projects</i>						
Southerly	Southerly Tunnel System	Outfalls 033, 035, 036, 039, 040, and 072	2030	3 or less		
Southerly	Big Creek Tunnel System	Outfalls 043, 044, 049, 050, 051, 053, 054, 055, 056, 057, 058, 059, 233, 238, & Cooley Avenue	2035	Priority outfalls = 3 or less; Nonpriority = 4 or less		
Southerly	CSO-045 Storage Tank	Outfalls 045, 088	2023	4 or less		

Table 2.2
CSO and Stream Monitoring

Site ID	Location	Receiving Stream	Rationale	Real-time Discharge	Water Quality	Monitoring Frequency (during compliance)	Monitoring Protocols
Easterly System CSOs							
CSO-001	Easterly WWTP	Lake Erie	Priority CSO Point, CSO Treatment Facility Effluent	x		Continuous	Flow, Level, Velocity, Onset, Duration
					x	During discharge	E.Coli, TSS
CSO-098	North of E. 33rd St. & Lakeside Ave.	Lake Erie	Non-priority CSO within Shoreline Tunnel System	x		Continuous	Flow, Level, and activation
CSO-206	North end of E. 156th St. @ Lake Erie	Lake Erie	Priority CSO within Euclid Creek/Dugway Storage System	x		Continuous	Flow, Level, and activation
CSO-209	West side of Euclid Creek & Lake Shore Blvd.	Euclid Creek	Priority CSO within Euclid Creek/Dugway Storage System	x		Continuous	Flow, Level, and activation
CSO-210	East of Nottingham R. and St. Clair Ave	Euclid Creek	Priority CSO within Euclid Creek/Dugway Storage System	x		Continuous	Flow, Level, and activation
CSO-211	Nine Mile Creek east of Coit Rd.	Nine Mile	Priority CSO within Euclid Creek/Dugway Storage System	x		Continuous	Flow, Level, and activation
CSO-230	Dugway Brook approx. 600-ft from Lakeshore Blvd.	Dugway Brook	Priority CSO within Euclid Creek/Dugway Storage System	x		Continuous	Flow, Level, and activation
CSO-232	East of Eddy Rd. @ Shaw Brook	Shaw Brook	Priority CSO within Euclid Creek/Dugway Storage System	x		Continuous	Flow, Level, and activation
CSO-239	Lakeshore Blvd. @ Euclid Creek	Euclid Creek	CSO currently monitored tributary to the Euclid Creek/Dugway Storage System	x		Continuous	Activation only
CSO-242	E. 142nd St. & Lakeshore Blvd.	Lake Erie	CSO currently monitored tributary to the Euclid Creek/Dugway Storage System	x		Continuous	Activation only
CSO-090	End of Superior Avenue @ Cuyahoga River	Cuyahoga River	Non-priority CSO controlled by Superior Avenue Pump Station Upgrade and Canal Road In-line Storage	x		Continuous	Flow, Level, and activation
CSO-200	North of E. 40th St. & King Ave.	Lake Erie	Priority CSO within Shoreline Tunnel System	x		Continuous	Flow, Level, and activation
CSO-202	E. 55th St. & Lake Erie	Lake Erie	Priority CSO within Shoreline Tunnel System	x		Continuous	Flow, Level, and activation
CSO-204	West of E. 72nd St. @ Lake Erie	Lake Erie	Priority CSO within Shoreline Tunnel System	x		Continuous	Flow, Level, and activation
W. 11th/Superior P.S.	End of Superior Avenue @ Cuyahoga River	Cuyahoga River	Non-priority CSO controlled by Superior Avenue Pump Station Upgrade	x		Continuous	Flow, Level, and activation

**Table 2.2
CSO and Stream Monitoring**

Site ID	Location	Receiving Stream	Rationale	Real-time Discharge	Water Quality	Monitoring Frequency (during compliance)	Monitoring Protocols
Stones Levee P.S.	W. 3rd at Canal East Side of River	Cuyahoga River	Non-priority CSO controlled by Stones Levee Pump Station Upgrade	x		Continuous	Flow, Level, and activation
CSO-073	Giddings Brook @ Doan Brook NE of Baldwin Rd. & Fairhill Rd.	Doan Brook	Priority CSO within Doan Valley Tunnel System	x		Continuous	Flow, Level, and activation
CSO-221	E. 105th St. & Hough Ave	Doan Brook	Priority CSO within Doan Valley Tunnel System	x		Continuous	Flow, Level, and activation
CSO-222	E. 105th St. & Doan Brook	Doan Brook	Priority CSO within Doan Valley Tunnel System	x		Continuous	Flow, Level, and activation
Westerly System CSOs							
CSO-002	Westerly WWTP	Lake Erie	Priority CSO Point, CSO Treatment Facility Effluent	x		Continuous	Flow, Level, Velocity, Onset, Duration
					x	During discharge	E.Coli, TSS
CSO-067	West of 3870 Rocky River Dr., northwest corner of Kamm's Plaza	Rocky River	CSO currently monitored within Westerly Tunnel System	x		Continuous	Activation only
CSO-069	Upper Edgewater Park, approx. 300 yds. west of beach	Lake Erie	CSO currently monitored within Westerly Tunnel System	x		Continuous	Activation only
CSO-071	Harborview Dr. & W 117th St., behind 11644 Harborview Dr.	Lake Erie	CSO currently monitored within Westerly Tunnel System	x		Continuous	Activation only
CSO-075	River Rd. & Elm St.	Cuyahoga River	CSO currently monitored within Westerly Tunnel System	x		Continuous	Activation only
CSO-076	Center St. & Cuyahoga River	Cuyahoga River	Non-priority CSO controlled by Center Street Storage Tank	x		Continuous	Flow, Level, and activation
CSO-078	Columbus Rd. & Cuyahoga River	Cuyahoga River	Non-priority CSO controlled by Columbus Road Storage Tank	x		Continuous	Flow, Level, and activation
CSO-080	SE of Scranton Rd. @ University Rd.	Cuyahoga River	Priority CSO within Westerly Tunnel System	x		Continuous	Flow, Level, and activation
CSO-082	Under Bridge @ W. 3rd St. & Cuyahoga River	Cuyahoga River	Non-priority CSO controlled by West Third Street Storage Tank	x		Continuous	Flow, Level, and activation
CSO-086	Mary St. east of W. 3rd St. @ Cuyahoga River	Cuyahoga River	Non-priority CSO controlled by Mary Street Pump Station Upgrade	x		Continuous	Flow, Level, and activation
CSO-089	East of W. 3rd St. Pump Station	Cuyahoga River	Non-priority CSO controlled by West 3rd St./Quigley Parallel Storage System	x		Continuous	Flow, Level, and activation
Southerly System CSOs							
CSO-035	Burke Brook @ Cuyahoga River	Burke Brook	CSO currently monitored within Southerly Tunnel System	x		Continuous	Activation only
CSO-036	West of Campbell Rd. & Independence Intersection	Cuyahoga River	Priority CSO within Southerly Tunnel System	x		Continuous	Flow, Level, and activation

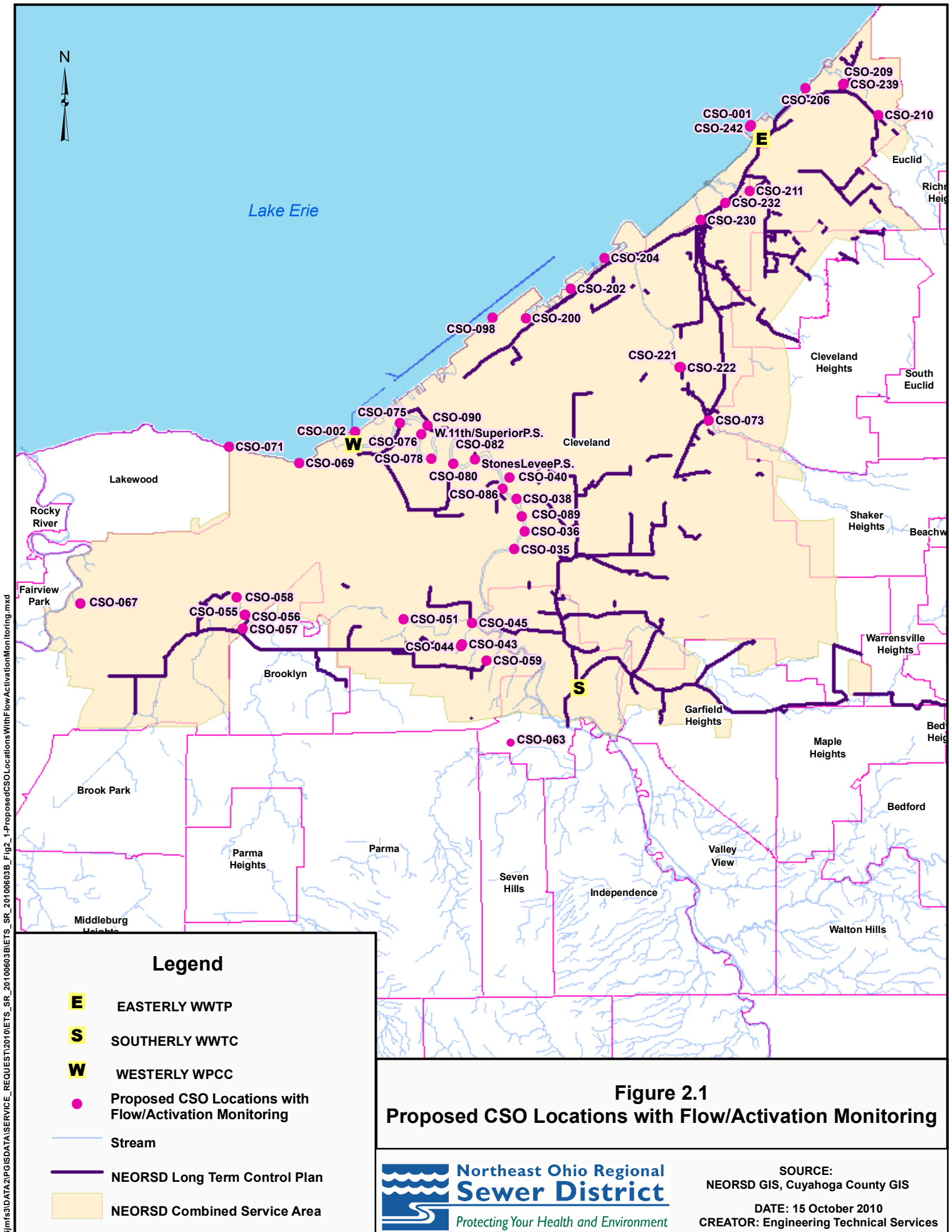
**Table 2.2
CSO and Stream Monitoring**

Site ID	Location	Receiving Stream	Rationale	Real-time Discharge	Water Quality	Monitoring Frequency (during compliance)	Monitoring Protocols
CSO-038	600' Southwest of E 26th St. & Independence Rd.	Cuyahoga River	CSO currently monitored within Southerly Tunnel System	x		Continuous	Activation only
CSO-040	Kingsbury Run @ Cuyahoga River - North of Jefferson Rd.	Cuyahoga River	Priority CSO within Southerly Tunnel System	x		Continuous	Flow, Level, and activation
CSO-043	East of Intersection of Tarlton Ave. & W. 15th St.	Treadway Creek	CSO currently monitored within Big Creek Tunnel System	x		Continuous	Activation only
CSO-044	North of Intersection of Irving Ave. & South Hills Dr.	Treadway Creek	CSO currently monitored within Big Creek Tunnel System	x		Continuous	Activation only
CSO-045	Northeast of Intersection of Jennings Ave. & Valley Ave.	Big Creek	Non-priority CSO controlled by CSO-045 Storage Tank	x		Continuous	Flow, Level, and activation
CSO-051	Brookside Dr. at mouth of triple culvert	Big Creek	CSO currently monitored within Big Creek Tunnel System	x		Continuous	Activation only
CSO-055	Under Bridge East of Bellaire Rd. & Kensington Rd.	Big Creek	CSO currently monitored within Big Creek Tunnel System	x		Continuous	Activation only
CSO-056	Under Bridge East of Bellaire Rd. & Kensington Rd.	Big Creek	CSO currently monitored within Big Creek Tunnel System	x		Continuous	Activation only
CSO-057	Under Interstate @ Memphis & I-71	Big Creek	Priority CSO within Big Creek Tunnel System	x		Continuous	Flow, Level, and activation
CSO-058	W. 114th St. & Peony Ave.	Big Creek	Priority CSO within Big Creek Tunnel System	x		Continuous	Flow, Level, and activation
CSO-059	Spring Rd. @ Jennings Rd.	Spring Creek	CSO currently monitored within Big Creek Tunnel System	x		Continuous	Activation only
CSO-063	Southeast of Brookpark R. & W. 10th St. Intersection	West Creek	Priority CSO within Southerly Tunnel System	x		Continuous	Flow, Level, and activation
Stream Monitoring							
EM1	Big Creek mile 0.15. Approximately 330 feet downstream of Jennings Road (41.4460, -81.6865)*	Big Creek	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM2	Cuyahoga River mile 0.25. River left, approximately 200 feet downstream of railroad bridge (41.5002, -81.7100)	Cuyahoga River	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM3	Doan Brook mile 0.75. Approximately 170 feet downstream of St.Clair Avenue (41.5330, -81.6296)	Doan Brook	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM4	Dugway Brook mile 0.37. Approximately 200 feet downstream of culvert opening (41.5497, -81.6088)	Dugway Brook	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM5	Euclid Creek mile 0.55. Approximately 500 feet downstream of Lake Shore Blvd. (41.5833, -81.5594)	Euclid Creek	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli

Table 2.2
CSO and Stream Monitoring

Site ID	Location	Receiving Stream	Rationale	Real-time Discharge	Water Quality	Monitoring Frequency (during compliance)	Monitoring Protocols
EM6	Edgewater Beach East (41.4893, -81.7392)	Lake Erie	Track receiving water conditions downstream of CSO control measures		x	Routinely during recreation season	E. coli
EM7	Euclid Beach East (41.5843, -81.5686)	Lake Erie	Track receiving water conditions downstream of CSO control measures		x	Routinely during recreation season	E. coli
EM8	Villa Angela Beach East (41.5851, -81.5677)	Lake Erie	Track receiving water conditions downstream of CSO control measures		x	Routinely during recreation season	E. coli
EM9	Nine Mile mile 0.40. Approximately 325 feet upstream of Lake Shore Blvd. (41.5575, -81.5991)	Nine Mile	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM10	Ohio Canal at the bridge at Kurtz Broz access road, approximately 275 feet southwest of intersection of Canal Road and East 49th Street (41.4213, -81.6559)	Ohio Canal	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM11	Rocky River mile 2.40. Approximately 230 feet upstream of Hilliard Road bridge (41.4705, -81.8238)	Rocky River	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM12	Shaw Brook mile 0.10. Approximately 100 feet upstream of Lake Shore Blvd (41.5554, -81.6018)	Shaw Brook	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM13	Spring Creek mile 0.30. Approximately 650 feet downstream of CSO 059 outfall (41.4378, -81.6801)	Spring Creek	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM14	West Creek mile 1.95. Upstream side of Lancaster Road Bridge (41.4148, -81.6655)	West Creek	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli
EM15	Treadway Creek mile 0.40. Approximately 285 feet east of intersection of Tarlton Avenue and West 15th Street (41.4409, -81.6902)	Treadway Creek	Track receiving water conditions downstream of CSO control measures		x	Following significant rainfall events	E. coli

*Latitude and longitude coordinates are taken from hand-digitized GIS maps and are not surveyed.



Lake Erie

Legend

- E** EASTERLY WWTP
- S** SOUTHERLY WWTC
- W** WESTERLY WPCC
- Proposed CSO Locations with Flow/Activation Monitoring
- Stream
- NEORS D Long Term Control Plan
- NEORS D Combined Service Area

Figure 2.1
Proposed CSO Locations with Flow/Activation Monitoring



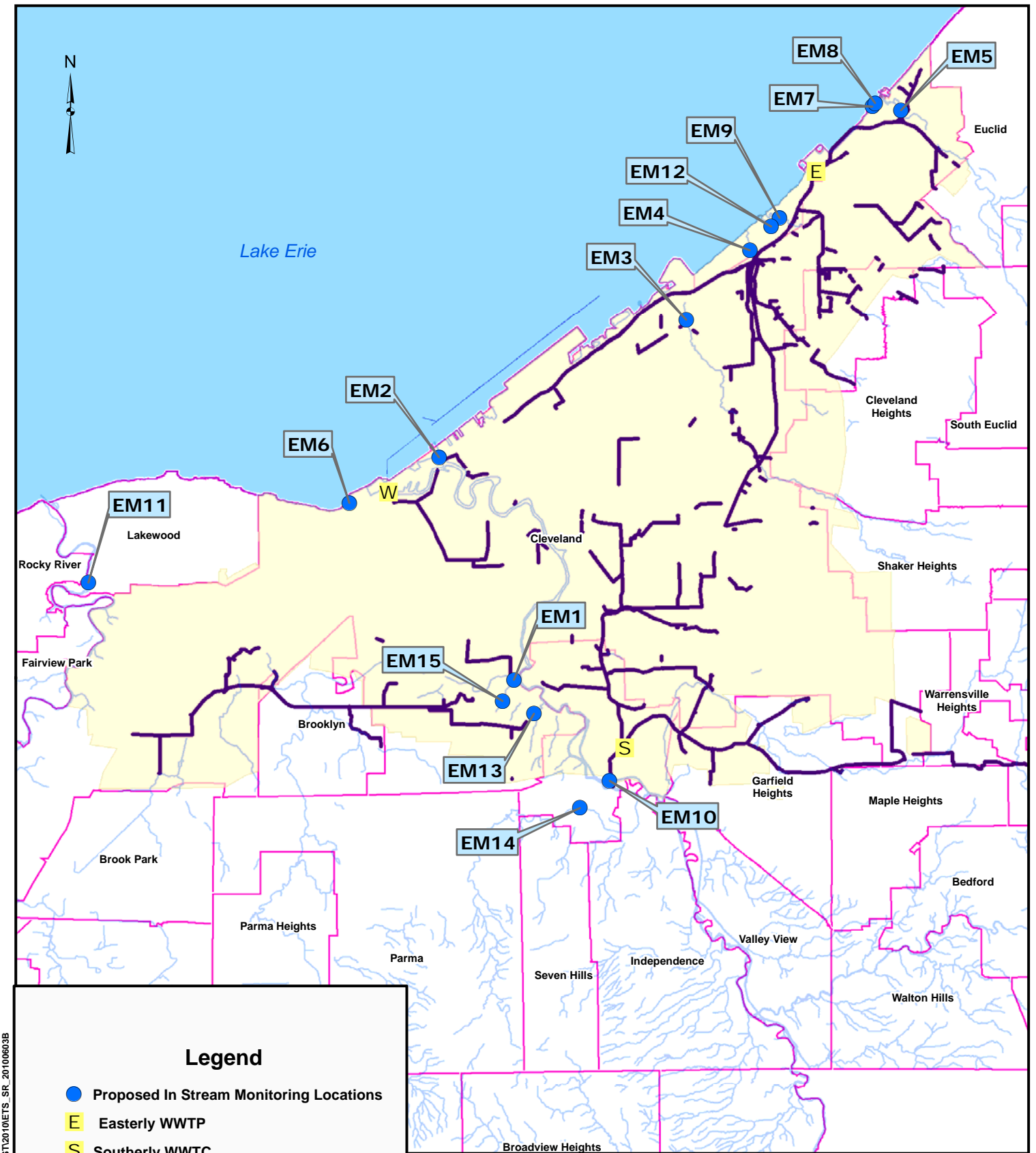
SOURCE:
 NEORS D GIS, Cuyahoga County GIS

DATE: 15 October 2010

CREATOR: Engineering Technical Services

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Legend

- Proposed In Stream Monitoring Locations
- E Easterly WWTP
- S Southerly WWTP
- W Westerly WPCP
- Stream
- NEORSD Long Term Control Plan
- NEORSD Combined Service Area

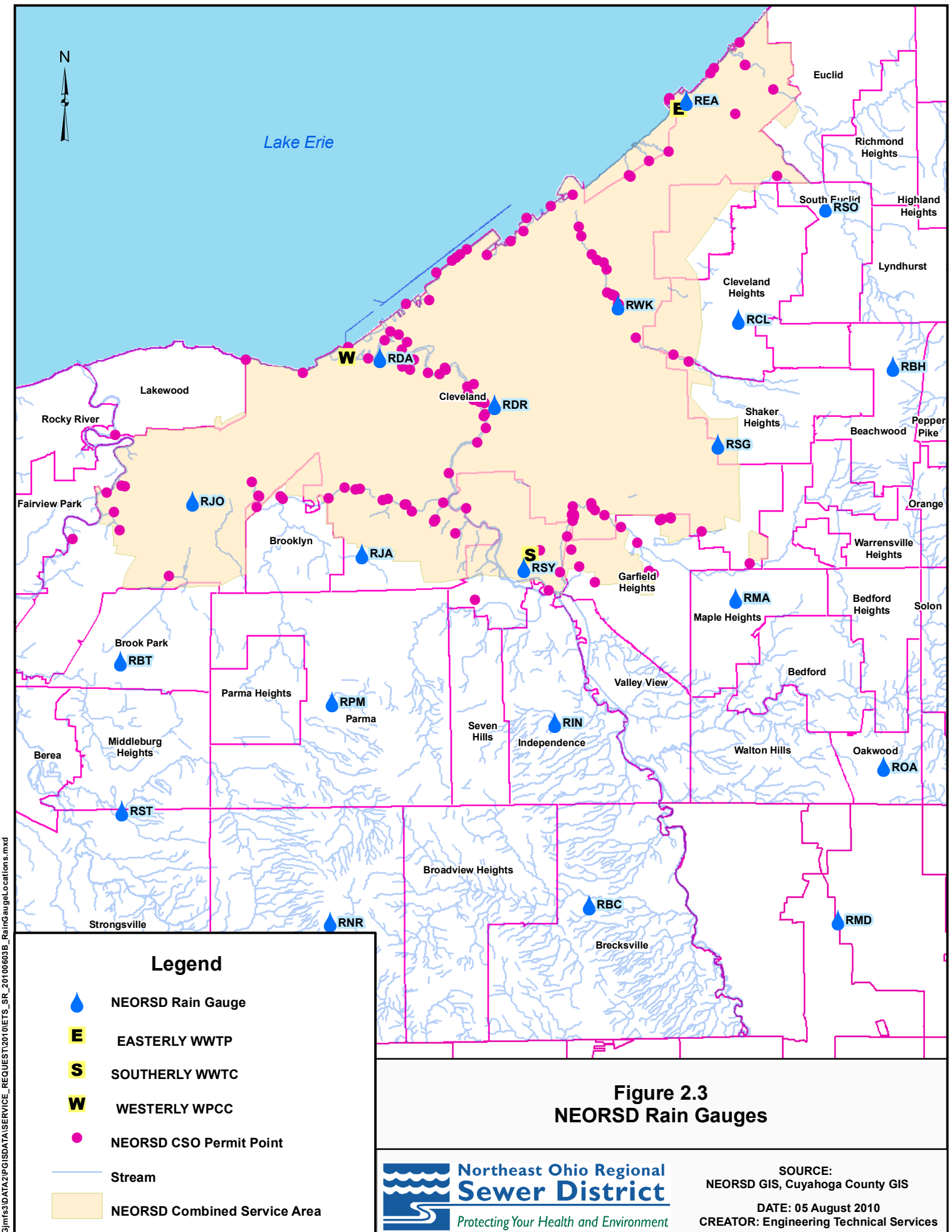
Figure 2.2
Proposed In Stream Monitoring Locations



SOURCE:
 NEORSD GIS, Cuyahoga County GIS
 DATE: 05 July 2010
 CREATOR: Engineering Technical Services

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

-  NEORSD Rain Gauge
-  EASTERLY WWTP
-  SOUTHERLY WWTP
-  WESTERLY WPCP
-  NEORSD CSO Permit Point
-  Stream
-  NEORSD Combined Service Area

Figure 2.3
NEORSD Rain Gauges



SOURCE:
 NEORSD GIS, Cuyahoga County GIS
DATE: 05 August 2010
CREATOR: Engineering Technical Services

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Table C-1. Storm Events for Typical Year Continuous Year Simulation

Storm Number	Date	Hour	Duration (Hrs)	Depth (In)	Average Intensity (In/Hr)	Maximum Intensity (In/Hr)	Storm Number	Date	Hr	Duration (Hrs)	Depth (In)	Average Intensity (In/Hr)	Maximum Intensity (In/Hr)
1	1/3/91	12	1	0.01	0.01	0.01	62	7/3/93	2	1	0.01	0.01	0.01
2	1/5/91	13	10	0.18	0.02	0.03	63	7/4/93	16	1	0.44	0.44	0.44
3	1/9/91	13	2	0.03	0.02	0.02	64	7/6/93	16	1	0.47	0.47	0.47
4	1/11/91	4	19	0.39	0.02	0.09	65	7/11/93	20	3	0.35	0.12	0.24
5	1/12/91	12	21	0.04	0	0.01	66	7/19/93	14	2	0.14	0.07	0.13
6	1/15/91	24	8	0.33	0.04	0.08	67	7/26/93	6	2	0.04	0.02	0.02
7	1/16/91	19	10	0.17	0.02	0.03	68	7/28/93	17	9	1.08	0.12	0.72
8	1/20/91	13	30	0.53	0.02	0.05	69	7/29/93	20	3	0.67	0.22	0.31
9	1/26/91	7	10	0.03	0	0.01	70	8/2/93	5	2	0.42	0.21	0.41
10	1/27/91	19	4	0.08	0.02	0.03	71	8/3/93	21	10	0.42	0.04	0.2
11	1/29/91	20	11	0.37	0.03	0.1	72	8/6/93	19	4	0.1	0.03	0.06
12	1/30/91	18	1	0.01	0.01	0.01	73	8/7/93	13	1	0.13	0.13	0.13
13	1/31/91	14	1	0.01	0.01	0.01	74	8/10/93	16	2	0.02	0.01	0.01
14	2/5/91	7	1	0.01	0.01	0.01	75	8/11/93	4	4	0.24	0.06	0.23
15	2/6/91	15	9	0.1	0.01	0.02	76	8/12/93	17	1	0.02	0.02	0.02
16	2/10/91	15	20	0.73	0.04	0.09	77	8/16/93	4	1	0.07	0.07	0.07
17	2/13/91	14	59	1.53	0.03	0.16	78	8/20/93	9	1	0.01	0.01	0.01
18	2/16/91	24	14	0.18	0.01	0.04	79	8/28/93	2	1	0.06	0.06	0.06
19	2/18/91	15	13	0.08	0.01	0.04	80	8/31/93	13	6	0.03	0.01	0.02
20	2/19/91	17	7	0.29	0.04	0.1	81	9/2/93	8	21	1.02	0.05	0.67
21	2/26/91	4	40	0.08	0	0.01	82	9/6/93	13	1	0.35	0.35	0.35
22	2/28/91	9	4	0.04	0.01	0.02	83	9/7/93	9	1	0.01	0.01	0.01
23	3/2/91	1	14	0.06	0	0.02	84	9/10/93	1	1	0.01	0.01	0.01
24	3/3/91	13	24	0.7	0.03	0.1	85	9/10/93	13	1	0.01	0.01	0.01
25	3/6/91	6	14	0.83	0.06	0.13	86	9/15/93	20	16	2.38	0.15	0.4
26	3/9/91	18	2	0.07	0.04	0.05	87	9/22/93	24	16	0.12	0.01	0.05
27	3/10/91	12	4	0.08	0.02	0.03	88	9/25/93	16	20	1.63	0.08	0.29
28	3/17/91	21	31	0.5	0.02	0.07	89	9/27/93	13	9	0.15	0.02	0.06
29	3/22/91	6	4	0.32	0.08	0.18	90	9/28/93	10	3	0.23	0.08	0.12
30	3/22/91	24	3	0.14	0.05	0.08	91	9/29/93	10	17	0.97	0.06	0.24
31	3/23/91	24	10	0.23	0.02	0.06	92	10/1/93	10	1	0.01	0.01	0.01
32	3/26/91	13	1	0.02	0.02	0.02	93	10/1/93	23	6	0.58	0.1	0.22
33	3/27/91	24	1	0.62	0.62	0.62	94	10/9/93	6	13	0.43	0.03	0.13
34	3/31/91	19	6	0.07	0.01	0.03	95	10/16/93	22	16	0.6	0.04	0.18
35	4/1/93	23	5	0.16	0.03	0.07	96	10/19/93	15	1	0.04	0.04	0.04
36	4/2/93	17	12	0.06	0.01	0.02	97	10/20/93	15	6	0.04	0.01	0.02
37	4/9/93	14	16	0.77	0.05	0.09	98	10/27/93	22	4	0.15	0.04	0.1
38	4/11/93	16	1	0.09	0.09	0.09	99	10/30/93	10	39	1.67	0.04	0.12
39	4/14/93	19	2	0.03	0.02	0.02	100	11/1/91	17	1	0.01	0.01	0.01
40	4/15/93	23	3	0.34	0.11	0.16	101	11/7/91	9	12	0.12	0.01	0.02
41	4/19/93	17	13	0.27	0.02	0.11	102	11/11/91	2	7	0.69	0.1	0.14
42	4/20/93	16	18	0.61	0.03	0.13	103	11/12/91	11	12	0.21	0.02	0.06
43	4/24/93	12	2	0.03	0.02	0.02	104	11/15/91	1	31	0.62	0.02	0.1
44	4/25/93	8	15	0.46	0.03	0.16	105	11/18/91	17	21	0.3	0.01	0.1
45	4/30/93	1	6	0.1	0.02	0.03	106	11/20/91	17	19	0.46	0.02	0.14
46	5/4/93	13	25	0.63	0.03	0.22	107	11/23/91	20	3	0.24	0.08	0.12
47	5/19/93	4	6	0.15	0.03	0.07	108	11/24/91	17	8	0.03	0	0.01
48	5/23/93	16	1	0.01	0.01	0.01	109	11/25/91	14	1	0.01	0.01	0.01
49	5/24/93	6	6	0.08	0.01	0.04	110	11/28/91	6	8	0.19	0.02	0.05
50	5/28/93	24	2	0.03	0.02	0.02	111	11/30/91	6	1	0.04	0.04	0.04
51	5/31/93	23	2	0.16	0.08	0.08	112	12/2/91	16	17	1.19	0.07	0.29
52	6/3/93	23	2	0.07	0.04	0.04	113	12/3/91	21	11	0.06	0.01	0.02
53	6/5/93	5	6	0.37	0.06	0.25	114	12/12/91	15	17	0.16	0.01	0.06
54	6/7/93	16	9	1.56	0.17	0.67	115	12/14/91	7	6	0.15	0.03	0.12
55	6/9/93	10	1	0.21	0.21	0.21	116	12/15/91	16	16	0.07	0	0.01
56	6/9/93	24	1	0.24	0.24	0.24	117	12/18/91	3	2	0.02	0.01	0.01
57	6/19/93	6	2	0.31	0.16	0.22	118	12/18/91	16	16	0.03	0	0.01
58	6/20/93	13	26	0.54	0.02	0.15	119	12/20/91	22	8	0.22	0.03	0.07
59	6/25/93	20	1	0.08	0.08	0.08	120	12/23/91	7	6	0.1	0.02	0.03
60	6/27/93	18	1	0.94	0.94	0.94	121	12/28/91	22	35	0.26	0.01	0.03
61	7/1/93	21	4	0.05	0.01	0.02							
Total											37.51		

*United States and State of Ohio v. Northeast Ohio
Regional Sewer District*

Consent Decree
Appendix 3

Green Infrastructure Requirements

APPENDIX 3

To Consent Decree, *United States and State of Ohio v. Northeast Ohio Regional Sewer District (N.D. Ohio)*

Green Infrastructure Requirements

1. NEORSD is conducting a Green Infrastructure Feasibility Study (the “Study”) to determine the nature and extent of Green Infrastructure control measure opportunities for its service area. The results of the Study will be used for purposes of both Tier 1A and 1B Green Infrastructure control measures as described herein. For the purposes of this Appendix, Tier 1A shall mean 44 million gallons (“MG”) of wet weather flow controlled by Green Infrastructure control measures in a typical year above the Gray Infrastructure control measures required by the Consent Decree. Tier 1B Gallons shall mean gallons of wet weather flow controlled by Green Infrastructure control measures in a typical year in excess of the 44 MG captured through the Green Infrastructure control measures (Tier 1A) required in this Appendix that do not exceed \$42 million in cost.
2. **Green Infrastructure Plan.** No later than December 31, 2011, NEORSD shall submit to EPA and Ohio EPA for approval in accordance with Paragraph 20 of the Consent Decree, a Green Infrastructure Plan (the “Plan”) to achieve the following performance criteria:

Performance Criteria. The Plan shall propose a process for locating, designing, constructing, operating, and evaluating a set or sets of Green Infrastructure control measures to capture a minimum of 44 MG of wet weather flows in a typical year that would otherwise be discharged by NEORSD’s CSOs. This 44 MG volume of capture (Tier 1A) shall be in addition to the capture per typical year that would be achieved by all of the other Gray Infrastructure control measures required under the Consent Decree in the absence of the Green Infrastructure control measures. In particular, CSO reduction provided by the Plan’s measures can count toward the required minimum volume only during events in which CSO activation occurs or would have occurred following construction of the Gray Infrastructure control measures required under the Consent Decree. NEORSD shall expend \$42 million, reduced to present value as of the Effective Date of the Consent Decree, for the construction and installation of Tier 1 Green Infrastructure control measures.

3. **Content and Submission of the Plan.** In the Plan, NEORSD shall identify those specific Green Infrastructure control measures which store, infiltrate, and/or evapotranspire precipitation and reduce wet weather flows into the combined sewer system that meet the requirements set forth below and provide the information set forth below:

Geographic Coverage. The Green Infrastructure control measures shall be located within the NEORSD combined sewer area. The Plan shall explain NEORSD’s prioritization for choosing locations for the Green Infrastructure control measures. The prioritization scheme for such locations shall include areas where: (1) Green Infrastructure control measures will help NEORSD meet Consent Decree performance standards; (2) land ownership will readily

accommodate permanent Green Infrastructure control measures, such as areas where parcels can be acquired from the Cleveland City Land Bank, the Cuyahoga County Land Re-utilization Corporation and the City of Cleveland Industrial/Commercial Land Bank; and (3) Green Infrastructure control measures can improve socio-economic conditions in the NEORS service area, including in neighborhoods that are comprised predominantly of households that have low household incomes or concentrated minority populations.

Preservation of Practices/Ownership/Access. The Plan shall demonstrate how NEORS shall insure it will be able to retain permanent access and sufficient control over the land devoted to the Green Infrastructure control measures set forth in the Plan. For example, NEORS may provide this demonstration by showing how it will acquire ownership of land parcels, or obtain legally-binding agreements with Cuyahoga County or the pertinent governing authority or landowner to retain permanent access and sufficient control of the parcels.

Public Participation. NEORS shall provide for, and describe in the Plan, a public participation process that actively involves the affected public in the decision-making for selection of the Green Infrastructure control measures and locations where the Green Infrastructure control measures will be located. The public participation process shall include, but will not be limited to, people living in neighborhoods that are composed primarily of households that have low household incomes or concentrated minority populations.

Schedule. NEORS shall include in the Plan a schedule for implementation of Green Infrastructure control measures to meet the performance criteria. The schedule shall lay out implementation steps/milestones such that all Green Infrastructure control measures planned to meet the 44 MG capture requirement shall be completed within eight years of entry of the Consent Decree.

Methods for Measuring Achievement of the 44 MG Capture Performance Standard. The Plan shall describe how NEORS will adjust the hydrologic model parameters directly related to the Green Infrastructure control measures (prior to and during model recalibration required as set forth in Appendix 2) as necessary to accommodate changes in model parameterization caused by shifts in runoff hydrology from the Green Infrastructure control measures. The District shall then use the model in two forms (the first encompassing all CSO control measures including the Green Infrastructure control measures proposed, and a second model identical to the first, but without the Green Infrastructure control measures), to simulate the “controlled” system's typical year performance. The District shall use the difference in performance between the two simulations to gauge compliance with the requirement that Green Infrastructure control measures mitigate a minimum additional CSO volume of 44 MG per typical year.

Environmental Justice (EJ) Considerations. The Plan shall set forth what efforts NEORS will make to prioritize environmental justice considerations -- that is, considering neighborhoods with households that have low household incomes or concentrated minority

populations -- into its site selection process. The Plan shall provide for an evaluation of environmental justice considerations as a co-benefit of the Green Infrastructure control measures selected, pursuant to Paragraph 8, below. NEORS shall consider collaborative decision making with community groups whenever possible in developing the Plan.

Operation and Maintenance. As part of the Plan, NEORS shall describe the operation and maintenance activities, including schedules, for each Green Infrastructure control measure. NEORS shall establish a procedure to manage information on the Green Infrastructure control measures.

4. **Implementation of the Plan.** Upon approval of the Plan by EPA and Ohio EPA, NEORS shall begin implementing the Plan, including the construction, installation, operation, and maintenance, in accordance with the milestones, performance requirements, and schedules in the approved Plan. Within ten years of entry of the Decree, NEORS shall demonstrate the effectiveness of implementation of the Green Infrastructure control measures, as described further below.
5. **Progress tracking and reporting.** As part of the semi-annual reporting required under Paragraph 37 of the Consent Decree, NEORS shall track its implementation, operation, and maintenance of the Green Infrastructure control measures, including those project start dates and project completion dates set forth in the Plan, and report on such activities and accomplishments. Documentation, such as inspection reports or records relating to operation and maintenance, shall be maintained. NEORS shall provide access to all such information and documentation to EPA and Ohio EPA.
6. **Evaluating the performance of Green Infrastructure control measures.** NEORS shall submit its proposal to perform two proposed Green Infrastructure post-construction monitoring programs (“GIPCMs”), (a) site-specific and (b) sewershed-specific programs, to evaluate the performance and effectiveness of the Green Infrastructure control measures to EPA and Ohio EPA for review and approval. NEORS shall submit two proposals for the site-specific GIPCM; Phase 1 within two years following entry of the Consent Decree to address projects to be implemented from 2012 through 2015, and a Phase 2 proposal by December 31, 2014 for a representative selection of the remaining site-specific projects. NEORS shall submit its proposal for the sewershed-specific program within two years following entry of the Consent Decree. Once approved by EPA and Ohio EPA, NEORS shall implement the GIPCM programs in accordance with the approved GIPCM plan. NEORS shall submit Green Infrastructure post-construction monitoring reports providing the results of the GIPCM programs for approval to EPA and Ohio EPA in accordance with the GIPCM plan.
 - a. The site-specific GIPCM program shall evaluate the effectiveness of the Green Infrastructure control measures on a site-specific scale. The GIPCM plan shall set forth the ways the various *types* of Green Infrastructure control measures to be implemented (e.g., constructed wetland, etc.) will function to control wet weather flows (e.g., through storage, infiltration, and/or evapotranspiration), and the

monitoring/assessment methods that will be used to evaluate the performance and effectiveness of the various types of practices. The GIPCM plan shall set forth NEORSD's methods and procedures for evaluating the performance of Green Infrastructure control measures on a site-specific scale, such as monitoring practices during and after rain events to gauge storage and/or infiltration performance. The GIPCM plan shall establish procedures for conducting performance evaluations on the fully constructed and operating Green Infrastructure control measures. Under the site-specific program, performance evaluations shall assess the effectiveness of the practices in terms of the functions the Green Infrastructure control measure was intended to fulfill (e.g., storage, infiltration). Each Phase 1 site-specific Green Infrastructure control measure shall be monitored for a minimum of 12-months immediately following implementation. The results of each site-specific GIPCM will be submitted to EPA and Ohio EPA, as set forth in the GIPCM plan as part of the next semi-annual report submitted to EPA and Ohio EPA pursuant to the reporting requirements of Paragraph 37 of the Consent Decree.

- b. The sewershed-specific GIPCM program shall set forth the steps NEORSD shall take to evaluate the performance and effectiveness of Green Infrastructure measures on a sewershed scale. Examples of such methods and procedures include collecting rainfall and wet weather flow data sufficient in scope and detail to allow: (i) characterization of the performance of the Green Infrastructure measures in a sewershed, and (ii) hydrologic adjustment of the sewershed portion of the collection system model to determine the impacts of the Green Infrastructure measures on system performance within the subject sewershed. NEORSD shall adjust the hydrologic model parameters directly related to the Green Infrastructure control measures as necessary (prior to and as needed during model recalibration required as set forth in Appendix 2) to accommodate changes in model parameterization caused by shifts in runoff hydrology from the Green Infrastructure measures. The District shall then use both the appropriate CSO model without the Green Infrastructure measures, and the model that includes the Green Infrastructure measures, to simulate the sewershed's typical year performance both with and without the Green Infrastructure measures in order to demonstrate the CSO volume reduction.

7. **Failure to Meet Performance Criteria.** If the Green Infrastructure post-construction monitoring report submitted by NEORSD fails to demonstrate that the Green Infrastructure control measures have met the performance criteria specified in Paragraph 2, plus any additional Tier 1B Gallons that meet the requirements of Paragraph 9, then within 180 days of submission of the report, NEORSD shall submit to EPA and Ohio EPA a corrective action proposal. The corrective action proposal shall define the Green or Gray Infrastructure enhancements/ expansions to be carried out to address performance shortcomings and ensure the performance criteria are met. The proposal shall include a schedule for completion of all corrective action measures and an updated post-construction monitoring plan to evaluate whether the corrective actions have resulted in the performance criteria being met. The performance criteria specified in Paragraph 2, above, plus any Tier 1B Gallons that meet the requirements of Paragraph 9 must be achieved within twelve years of entry of the Consent

Decree. The “Achievement of Full Operation” date for green infrastructure control measures to control Tier 1A and 1B gallons is 12 years from the date of entry of the Consent Decree.

8. **Evaluating the co-benefits of Green Infrastructure control measures.** Within three years following EPA approval of the Plan, NEORSD shall submit a report to EPA and Ohio EPA quantifying the anticipated co-benefits of NEORSD’s Green Infrastructure control measures. Co-benefits, for the purposes of this Consent Decree, mean the benefits, in addition to mitigating wet weather flow, that are achieved by NEORSD’s CSO Program in Appendix 1. In the report, NEORSD shall describe the methods to be used to identify/analyze co-benefits. The co-benefits to be evaluated and quantified include, at a minimum, the following:

- Life-cycle costs
- Ecological benefits (ecosystem services)
- Socio-economic and/or quality of life benefits to low-income or minority populations
- Provision of recreational benefits
- Climate change-related effects, including change in carbon footprint
- Energy savings
- Air quality
- Aesthetics
- Jobs
- Property values

NEORSD may engage with research and development organizations to access expertise or advice on how to conduct assessments, or may also collaborate or enter into memoranda of understanding to improve the quality of monitoring and reporting.

9. **Substitution of Tier 1B Green Infrastructure Control Measures Exceeding 44 Million Gallon Capture for Gray Infrastructure Control Measures.** If, through the use of modeling, NEORSD demonstrates in the Plan that its \$42 million in expenditures for Green Infrastructure control measures in accordance with this Appendix will result in the capture of more than the required 44 MG of wet weather flows in a typical year, NEORSD may apply to EPA and Ohio EPA to use this predicted additional wet weather flow capture to decrease the amount of Gray Infrastructure control measures otherwise required by the Consent Decree, as more fully described in Appendix 4. For the purposes of this Appendix, Tier 1B Gallons shall mean gallons of wet weather flow controlled by Green Infrastructure in a typical year above the 44 MG captured through the Green Infrastructure control measures (Tier 1A) required in this Appendix that do not exceed \$42 million in cost. In the portion of the Plan describing the generation and application of Tier 1B Gallons, NEORSD shall provide specific information to EPA and Ohio EPA documenting the amount of Tier 1B Gallons and the engineering and modeling basis for determining the availability and number of Tier 1B Gallons. NEORSD shall propose how the Tier 1B Gallons should be applied to downsize the required Gray Infrastructure control measures required by Appendix 1 in accordance with the following requirements:

- a. Tier 1B Gallons shall be applied to allow no more than one gallon decrease in capture of wet weather flows through Gray Infrastructure control measures for each gallon of capture achieved via Green Infrastructure control measures.
- b. Tier 1B Gallons shall be applied within the same sewershed and water body where the Tier 1B Gallons were generated.
- c. Tier 1B Gallons cannot be applied so as to increase the number of activations in a typical year above the performance standard amount for any CSO outfall or treatment plant bypass (as set forth in Appendix 1), may not result in a decrease of the total gallons captured in a typical year for any body of water, and may not result in any increase in bypass or untreated discharge volume in a typical year for any wastewater treatment plant.

The portion of the Plan regarding using Tier 1B Gallons to reduce the Gray Infrastructure required by Appendix 1 shall meet the requirements of Sections 1-4 of Appendix 4. EPA and Ohio EPA's approval of NEORSD's proposal to obtain and apply such Tier 1B Gallons shall not be considered to be a material change in the Consent Decree.

*United States and State of Ohio v. Northeast Ohio
Regional Sewer District*

Consent Decree
Appendix 4

**Requirements Applicable to Proposals for
Green for Gray Substitutions**

APPENDIX 4

To Consent Decree, *United States and State of Ohio v. Northeast Ohio Regional Sewer District* (N.D. Ohio)

Requirements Applicable to Proposals for Green for Gray Substitutions

Any Proposal to substitute Green Infrastructure control measures for Gray Infrastructure control measures (“Green for Gray substitutions”) shall result in compliance with the CSO control performance criteria in a typical year and critical milestones in Appendix 1. Proposed reductions in Gray Infrastructure control measures shall be directly compensated for by Green Infrastructure control measures located within the drainage area of the Gray Infrastructure control measures to be reduced. All Proposals submitted pursuant to this Appendix shall meet the requirements of Section 1 below. Proposals to downsize tunnel capacity by substituting Green Infrastructure control measures shall meet the requirements of Sections 1 and 2 below. Green Infrastructure control measures may not be substituted for control measures or equipment to be installed or upgraded at the wastewater treatment plants pursuant to this Consent Decree.

1. **Proposals to Meet Performance Criteria in Appendix 1 by Substituting Green Infrastructure Measure(s) for Gray Infrastructure Control Measure(s)**

Upon a determination by NEORSD to incorporate Green Infrastructure control measures as an alternative to Gray Infrastructure control measures to achieve the performance criteria set forth in Appendix 1, NEORSD shall submit to EPA and Ohio EPA a detailed Green Infrastructure Project Proposal (“Proposal”).¹ Each such Proposal shall at a minimum include all Green Infrastructure control measures that NEORSD proposes to substitute for a reduction in a particular Gray Infrastructure control measure. For example, a Proposal shall include all the Green Infrastructure control measures that NEORSD intends to substitute for the reduction in the capacity of a given tunnel. This Proposal shall be consistent with this Consent Decree and shall at a minimum include the following:

- a. A detailed description (to include specific technologies to be employed, project dimensions and configurations, material specifications and characteristics, to-scale project drawings that include the drainage area tributary to the proposed Green Infrastructure control measures, intended mode(s) of operation, and any other available information that may aid EPA and Ohio EPA in their assessment of the Proposal) of the Green Infrastructure control measures, a description of the proposed reductions in Gray Infrastructure control measures, all tasks required to implement the Proposal, a detailed cost estimate, and a schedule for completion of this work and implementation of the Proposal that is consistent with this Consent Decree including its Appendices.

¹EPA and the State encourage NEORSD to informally consult with the agencies in the early stages of preparing a Green for Gray substitution Proposal to identify any questions or concerns about the nature of the substitution being considered.

- b. A detailed comparative analysis of the typical year performance expected to be achieved with the implementation of the Green Infrastructure control measures, and of the Gray Infrastructure control measures to be replaced or downsized by the Green Infrastructure control measures. This analysis shall identify: (i) the expected baseline performance of the Gray Infrastructure control measures to be replaced or downsized in terms of activation frequency, gallons of combined sewage controlled, and remaining gallons of CSO discharge; (ii) the expected performance of the downsized Gray Infrastructure control measures in terms of activation frequency, gallons of combined sewage controlled, and remaining gallons of CSO discharge; (iii) the expected performance of the Green Infrastructure control measures in terms of activation frequency, gallons of combined sewage controlled, and remaining gallons of CSO discharge; and (iv) the expected performance of the combination of the downsized Gray Infrastructure control measures and the Green Infrastructure control measures in terms of activation frequency, gallons of combined sewage controlled, and remaining gallons of CSO discharge. These analyses shall be carried out using the information and models used to develop NEORSD's LTCP, appropriate available performance data for the proposed Green Infrastructure control measures, and all monitoring information and data used in formulating the Proposal. The Proposal shall include detailed documentation of NEORSD's analyses, including detailed modeling results, engineering calculations, summaries of underlying assumptions and the bases for those assumptions, and detailed summaries of all data relied upon. The Proposal shall also include a detailed analysis and discussion of the long term effectiveness and performance expected to be achieved with implementation of the Proposal.
- c. A description of the Green Infrastructure control measure operation and maintenance activities to be carried out, including schedules for maintenance.
- d. A description of how NEORSD shall ensure it will be able to retain permanent access and sufficient control over the land devoted to the Green Infrastructure control measures set forth in the Proposal. For example, NEORSD may provide this demonstration by showing how it will acquire ownership of land parcels, or obtain legally-binding agreements with Cuyahoga County, or the pertinent governing authority or landowner, to retain permanent access and sufficient control of the parcels.
- e. A description of post-construction monitoring and modeling to be performed to determine whether the Performance criteria set forth in Appendix 1 will be met upon completion and implementation of the Gray Infrastructure and Green Infrastructure control measures outlined in the Proposal.
- f. A description of the type of corrective action measures, in compliance with Appendix 2, that can be undertaken if post-construction monitoring and modeling of the Green Infrastructure control measures do not demonstrate that the performance criteria for the Proposal are being met.

- g. A description of stakeholder outreach and public participation, implemented and planned, associated with the proposed Green Infrastructure control measures. The public participation for proposed Green-for-Gray substitutions shall include, but will not be limited to, people, households, and neighborhoods in the service area that have low household incomes or concentrated minority populations.

2. Provisions Applicable to Proposals to Substitute Green Infrastructure Control Measures for Tunnel Capacity

The following additional provisions apply where a Green for Gray substitution Proposal involves a reduction in the effective storage volume of any of the tunnels listed in Appendix 1.

- a. NEORSD shall submit to EPA and Ohio EPA a Green for Gray substitution Proposal for review and approval. The Proposal shall contain all the information identified in 1.a. – 1.g., above. In addition, the Proposal shall identify a date for the 30% design submittal for the pertinent tunnel, and shall include specific identification of an appropriate number of demonstration projects. The identified demonstration sites and types of Green Infrastructure control measures shall be characteristic of the Proposal’s total Green infrastructure type, scale, and scope, and shall meet the following criteria:
 - 1. Unless otherwise approved by Ohio EPA and EPA, the identified demonstration sites and types of Green Infrastructure control measures shall be within the drainage area(s) to be impacted by the Proposal;
 - 2. The identified demonstration sites and types of Green Infrastructure control measures shall implement the types of Green Infrastructure technology proposed by NEORSD in the Proposal;
 - 3. The identified demonstration sites and types of Green Infrastructure control measures shall be of sufficient number and size, so as to provide an adequate understanding of the performance range likely to be realized by those technologies when implemented as per NEORSD’s Proposal; and
 - 4. The identified demonstration sites and types of Green Infrastructure control measures shall be located in locations where soils, topography, and infiltration and drainage characteristics are characteristic of those to be encountered across the sites and Green Infrastructure control measures included in the Proposal.

The identified demonstration sites and types of Green Infrastructure control measures shall be planned so as to provide an adequate understanding of the performance range likely to be realized by those technologies when implemented pursuant to NEORSD’s Proposal.

- b. If EPA and Ohio EPA approve the Proposal, NEORSD shall construct and implement the identified demonstration sites and types of Green Infrastructure control measures described in the Proposal.
- c. NEORSD shall conduct at least 1 year of post-construction monitoring of the identified demonstration sites and types of Green Infrastructure control measures described in the Proposal in accordance with the schedule in the approved Proposal.
- d. NEORSD shall submit a report on the post-construction monitoring of the identified demonstration sites and types of Green Infrastructure control measures. The report will include all data collected and an analysis of the data indicating whether the data demonstrates that the identified demonstration sites and types of Green Infrastructure control measures meet the performance criteria set forth in the Proposal. If the data does not demonstrate that the Green Infrastructure control measures meet the performance criteria, NEORSD shall include with the report a Modified Proposal. The Modified Proposal shall replace the initial Proposal and describe what additional measures are needed, including additional Green Infrastructure and/or Gray Infrastructure control measures to be constructed and implemented to meet the performance criteria in Appendix 1. The Modified Proposal shall highlight changes from the initial Proposal. The Modified Proposal could include implementation of a greater amount of Green Infrastructure control measures than what was planned in the original Proposal or a resizing of the pertinent tunnel or Gray Infrastructure control measures in order to achieve the performance standards set forth in Appendix 1. The report and Modified Proposal will describe the level of control actually being provided by the identified demonstration sites and types of Green Infrastructure control measures and include the volume reductions measured in the assessment along with what further control measures are needed to meet the performance criteria for the tunnel service area as specified in Appendix 1.
- e. The report on the post-construction monitoring of the identified demonstration sites and types of Green Infrastructure control measures, including a Modified Proposal if necessary, shall be submitted no later than 30 days prior to the date of the 30% design submittal for the tunnel. If NEORSD fails to submit the report 30 days or more prior to the date of the 30% design submittal, the Green for Gray substitution shall be considered disapproved and the design of the tunnel(s) and the development of detailed plans and specifications shall proceed based on the design and performance criteria specified in Appendix 1.
- f. The post-construction monitoring of the identified demonstration sites and types of Green Infrastructure control measures does not replace the post-construction monitoring of Green Infrastructure control measures across the drainage area, nor corrective action steps, if necessary, required pursuant to Appendix 2.

3. Reviews/Approvals of Green for Gray Substitution Proposals

EPA and Ohio EPA shall review each Green for Gray substitution Proposal submitted by NEORSD, each report on the performance of Green infrastructure demonstration sites and Green Infrastructure control measures, and each Modified Proposal, where needed. The Agencies may request clarifications or supplemental information to make informed decisions on each Proposal. Upon the conclusion of reviews of Proposals or Modified Proposals the Agencies will approve the Proposal, approve with conditions, or disapprove the Proposal.

Following a review of a report on the performance of Green infrastructure demonstration sites and Green Infrastructure control measures, the Agencies shall concur or non-concur on report findings, including the Report's findings on compliance with the performance criteria in Appendix 1 and the finding that a Modified Proposal is or is not necessary. If the Agencies non-concur on a finding in a report that a Modified Proposal is not necessary, NEORSD shall submit a Modified Proposal to meet the performance criteria in Appendix 1 and to fully address the substance of any comment the Agencies make with respect to the non-concurrence within 45 days of the date of the written non-concurrence notification. Design may not proceed past the 30% design point on the proposed downsized tunnel(s) until the Modified Proposal is submitted, reviewed, and concurred upon by the Agencies.

4. Provisions Applicable to Approved Green Infrastructure Control Measures

Upon approval of a Green for Gray substitution Proposal or Modified Proposal, NEORSD is authorized to implement Green Infrastructure control measures in conformance with the approved Proposal or Modified Proposal. The following additional provisions apply to implementation of Green Infrastructure control measures.

- a. NEORSD shall ensure permanent access and sufficient control over the land devoted to the Green Infrastructure control measures.
- b. NEORSD shall carry out the public participation activities described in the Proposal.
- c. NEORSD shall carry out the operation and maintenance activities described and scheduled in the approved Proposal.
- d. NEORSD shall track its implementation, operation, and maintenance of the Green Infrastructure control measures, and report on such activities and accomplishments as part of the semi-annual reporting required under Paragraph 37 of the Consent Decree.
- e. The post-construction monitoring and modeling provisions of the Proposal shall be implemented to verify if the performance criteria for the Green Infrastructure control measures have been met.
- f. If, following full completion of construction and implementation of the approved Green Infrastructure control measures, the post-construction monitoring of those measures fails to demonstrate that the Green Infrastructure control measures have met the performance criteria on which the substitution was based, NEORSD shall submit

to EPA and Ohio EPA a Corrective Action Plan as required pursuant to Section 2.4.4 of Appendix 2.

5. **Evaluating the Co-Benefits of Green Infrastructure Control Measures**

NEORSD shall submit a report to EPA and Ohio EPA quantifying the co-benefits of NEORSD's Green for Gray substitution Proposals by December 31, 2028 for the Easterly District, by December 31, 2029 for the Westerly District, and by December 31, 2036 for the Southerly District. Co-benefits, for the purposes of this Consent Decree, means the benefits, in addition to mitigating wet weather flow, that are achieved by NEORSD's CSO Program in Appendix 1, except for control measures 12, 13 and 25 in Appendix 1. In the report, NEORSD shall describe the methods to be used to identify/analyze co-benefits. The co-benefits to be evaluated and quantified include, at a minimum, the following:

- Life-cycle costs
- Ecological benefits (ecosystem services)
- Socio-economic and/or quality of life benefits to low-income or minority populations
- Provision of recreational benefits
- Climate change-related effects, including change in carbon footprint
- Energy savings
- Air quality
- Aesthetics
- Jobs
- Property values

This report may also include updated information about the co-benefits of Green infrastructure control measures implemented pursuant to Appendix 3 of this Decree.

6. **No Material Change**

EPA and Ohio EPA's approval of NEORSD's request to make Green for Gray substitutions shall not be considered to be a material change in the Consent Decree.

*United States and State of Ohio v. Northeast Ohio
Regional Sewer District*

Consent Decree
Appendix 5

**Federal Supplemental Environmental
Project**

APPENDIX 5

To Consent Decree, *United States and State of Ohio v. Northeast Ohio Regional Sewer District* (N.D. Ohio)

Collection and Disposal of Household Hazardous Waste at Special Waste Convenience Center (Center) or Alternative Location

The Cuyahoga County Solid Waste District (“CCSWD”) currently conducts a twice-yearly Household Hazardous Waste Round-Up event, during which it collects approximately 500,000 pounds of household hazardous materials for recycling. Collection of this material ensures that it is not improperly disposed of in local waterways. Materials collected include motor oil, oil-based paints, pesticides, mercury, batteries, and propane tanks. While the Household Hazardous Waste Round-Up events have been successful, they are too infrequent to adequately serve residents in Cuyahoga County. CCSWD is currently renovating an abandoned structure in the City of Garfield Heights to serve as a collection center (“Center”), but has represented to the Parties that it will only have sufficient funding to be able to operate the Center twice a year. The purpose of this SEP is to increase the amount of household hazardous waste collected by providing for collection days in addition to the CCSWD Round-Up events.

NEORS shall be responsible for the conduct and funding of at least one collection day per month for four years or until NEORS spends at least \$1,000,000 in creditable operating expenses, whichever is longer. The SEP shall consist of: arranging for a central location where communities within Cuyahoga County, in the Greater Cleveland area, can deliver household hazardous waste collected from residents (or where residents can drop their own waste off); arranging to have the waste picked up from the central location and be properly disposed of; and notifying the surrounding communities of the dates and locations of the collection events and encouraging residents to participate. NEORS may use the Center or any other suitable location for the central drop off location. NEORS also may use contractors or consultants in implementing the SEP including, without limitation, CCSWD. NEORS currently estimates that, resulting from the conduct and funding of this work, the Center or alternate location will collect and dispose of approximately 1,000,000 pounds per year of household hazardous wastes. However, the exact amount of waste collected will depend on the volume of waste generated in the communities, and the cost of disposal will vary depending on the type and relative toxicity of the waste received.

NEORS shall begin the monthly collection and disposal activities no later than the month of April 2011. Eligible expenses include NEORS’s documented costs for collection and disposal of household hazardous waste.

*United States and State of Ohio v. Northeast Ohio
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Consent Decree
Appendix 6

**State Supplemental Environmental
Project**

APPENDIX 6
STATE SUPPLEMENTAL ENVIRONMENTAL PROJECT

I. Canal Pump Station Operation and Maintenance

The Brecksville Dam (also known as the Route 82, Station Road or Canal Diversion Dam) is a structure located on the Cuyahoga River at river mile 20.7. The original dam, known as the Pinery Feeder Dam, was initially constructed in 1827 for the purpose of providing additional water to the Ohio and Erie Canal. The original structure was modified and parts rebuilt several times in the ensuing years. The dam was replaced with a new dam in 1951, located approximately 120 feet downstream from the Pinery Feeder Dam.

The Ohio EPA has identified the dam as one of the causes of non-attainment in this section of the Cuyahoga River. The Lower Cuyahoga River TMDL, which was approved by U.S. EPA on September 26, 2003, specifically identified removal of the Canal Diversion Dam as a project needed to implement the TMDL and restoration of the Lower Cuyahoga River. The TMDL does not assign responsibility to an entity for removal of the dam.

On July 24, 2009, the National Park Service (“NPS”) published in the Federal Register a notice of intent to prepare an Environmental Impact Statement (“EIS”), in collaboration with Ohio EPA, the U.S. Army Corps of Engineers, and the Ohio Department of Natural Resources (“Cooperating Agencies”) to evaluate the environmental impacts of modifying or removing the dam. As the EIS is ongoing, a final decision on whether dam removal will occur has not yet been made. It is estimated that the EIS will be completed in late 2011.

If dam removal occurs, a supply of water from the Cuyahoga River to the Ohio and Erie Canal must be provided. If the Canal does not receive the proper amount of water, there could be important social impacts and small, but important, environmental or agricultural impacts. Studies by the NPS have indicated that a flow estimate of 20 ft³/sec or 12.9 million gallons per day (“mgd”) from the Cuyahoga River is necessary for proper function of the Ohio and Erie Canal. As a result, construction and operation of a pump station is necessary in order to maintain this flow to the Ohio and Erie Canal.

NEORSD has agreed to implement a Supplemental Environmental Project (“SEP”), for Canal Pump Station Operation and Maintenance. The SEP shall include the operation and maintenance, including assumption of all operating costs, of the pump station constructed and installed to maintain flow from the Cuyahoga River to the Ohio and Erie Canal, provided that the Canal Diversion Dam Removal and the Construction of the Pump Station is selected for implementation following the completion of the EIS and construction of the pump station. Operation and maintenance of the pump station by NEORSD shall be performed for a period of twenty-five (25) years in accordance with Section VIII and this Appendix 6 of the Consent Decree.

Following commencement of operation of the pump station, NEORSD shall submit to the United States and the State, as provided in Section VIII of the Consent Decree, an Annual Report, within thirty (30) days after the end of each year of operation, which includes the following information:

1. A detailed description of the SEP as implemented during the prior calendar year;
2. A description of any problems encountered during operation and maintenance of the pump station and any corrective actions taken in response to such problems;
3. An itemized list of all eligible SEP costs expended;
4. Certification that the pump station has been fully operational throughout the year and has been maintained or had replacement components installed consistent with providing for the continued operation of the pump station as designed throughout the year period so that at the conclusion of that period the pump station continues to be fully operational; and
5. Any other information requested by the United States or the State.

NEORSD shall also submit to the United States and the State, as provided in Section XVI of the Consent Decree, on the date set for completion of the SEP, a SEP Completion Report which contains the following information:

1. A detailed description of the SEP as implemented;
2. A description of any problems encountered in completing the SEP and any corrective actions taken in response to such problems;
3. An itemized list of all eligible SEP costs expended;
4. Certification that the SEP has been fully implemented pursuant to the provisions of the Consent Decree; and
5. Any other information requested by the United States or the State.

Following receipt of the SEP Completion Report, Ohio EPA or the State will notify NEORSD whether the SEP has been satisfactorily completed. Disputes concerning the satisfactory performance of the SEP and the amount of eligible SEP costs may be resolved under the Dispute Resolution provisions in Section XIII of the Consent Decree.

Each Annual Report, SEP Completion Report or any other submission required by this Appendix shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 44 of the Consent Decree. Any public statements made by NEORSD,

whether written or oral, in print, film, or other media, making reference to the SEP under the Consent Decree shall include the following language:

This project was undertaken in connection with the settlement of an enforcement action, *United States and State of Ohio v. Northeast Ohio Regional Sewer District*, taken on behalf of Ohio EPA.

II. Alternative SEP

In the event that the Canal Diversion Dam Removal and Construction of the Pump Station is not selected for implementation following the conclusion of the EIS, NEORSD shall implement an Alternative SEP. Under the Alternative SEP, NEORSD shall pay the sum of eight hundred thousand dollars (\$800,000.000) to Ohio EPA for deposit into the Surface Water Improvement Fund for use by Ohio EPA for any project(s) related to water quality protection and/or water quality restoration consistent with the operation and use of that fund as established pursuant to O.R.C. § 6111.0381. Such payment shall be made within sixty (60) days after NEORSD has received notice from Ohio EPA that the Canal Diversion Dam Removal will not be implemented, or by January 31, 2012, whichever occurs later. This money shall be used by Ohio EPA to provide grant funding for water quality improvements within the Chagrin, Cuyahoga, or Rocky River Watersheds; or the watersheds of the Lake Erie Direct Tributaries that are located within the NEORSD service area (including, but not limited to, the watersheds of Euclid Creek, Doan Brook, Dugway Brook and Nine Mile Creek).