

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

_____)
UNITED STATES OF AMERICA,)
)
and)
)
THE STATE OF OHIO,)
) Civil Action No.: 1:22-cv-01964
Plaintiffs,)
)
v.)
)
THE CITY OF LAKEWOOD, OHIO,)
)
Defendant.)
_____)

**UNITED STATES' NOTICE OF LODGING OF CONSENT DECREE
WITH CITY OF LAKEWOOD, OHIO**

The United States hereby lodges the accompanying proposed Interim Partial Consent Decree (“Decree”) with this Court for the purpose of soliciting public comment on the proposed agreement. No action is requested of the Court at this time.

The United States and the State of Ohio, on behalf of the United States EPA and Ohio EPA, have filed an action under the Clean Water Act relating to the sewer system serving the City of Lakewood, Ohio. The Complaint alleges that on at least 1,933 occasions from January 2016 through the present, the City of Lakewood (“Lakewood”) has discharged untreated sanitary sewage into waters of the United States, from either an unpermitted discharge point or a permitted stormwater discharge point. The Complaint also alleges that on numerous occasions, from January 2016 through the present, Lakewood discharged effluent from combined sewer overflow outfalls in violation of its National Pollutant Discharge Elimination System permit.

The proposed Decree requires Lakewood to complete construction of a high-rate treatment system that will treat combined sewer overflows and to build two large storage basins that will hold millions of gallons of wastewater until it can be sent to the wastewater treatment plant. Under the Decree, Lakewood will also conduct multiple pipe lining and repair projects within its system designed to eliminate causes of sanitary sewer overflows. Lakewood will also undertake a sampling pilot study designed to identify sewage in stormwater outfalls and a one-year post-construction monitoring program, which will provide the data needed for future work in Lakewood's system. Lakewood will then be required to update its Integrated Wet Weather Improvement Plan to provide a comprehensive solution to address permitted and unpermitted overflows in the remainder of Lakewood's sewer system. Lakewood will ultimately be required to implement its updated Plan through a subsequent, enforceable agreement with the United States and the State of Ohio and demonstrate compliance with the Clean Water Act. Lakewood will pay a civil penalty of \$100,000, split evenly between the United States and the State. The State joins in the proposed Decree.

The Decree is a partial resolution of the civil claims of the United States and the State for the violations alleged in the Complaint. The Decree resolves the claims for civil penalty, but does not resolve the claims for injunctive relief. The injunctive relief claims will be fully resolved in a subsequent, enforceable agreement with the United States and the State in which Lakewood will be required to implement its updated Integrated Wet Weather Improvement Plan.

Pursuant to U.S. Department of Justice policy and 28 C.F.R. 50.7, the United States will publish notice of the lodging of the proposed Decree in the Federal Register to commence a 30-day public comment period. The Court should not sign the proposed Decree until the public has had an opportunity to comment and the United States has addressed those comments, if any. The

United States may withhold its consent to the proposed Decree if the comments disclose facts or considerations which indicate that the proposed Decree is improper, inappropriate, inadequate, or not in the public interest. At the conclusion of the public comment period, the United States will:

- (1) file with the Court any written comments received pertaining to the proposed Decree; and
- (2) either notify the Court of its withdrawal of the proposed Decree, or respond to comments received and request this Court to approve and enter the proposed Decree.

Respectfully submitted,

FOR THE UNITED STATES OF
AMERICA

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Environment and Natural Resources
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CERTIFICATE OF SERVICE

I hereby certify that today, the foregoing Notice of Lodging was filed electronically, and a copy was sent via email to counsel listed below.

/s/ Steven J. Paffilas
Steven J. Paffilas (OH 0037376)
Assistant United States Attorney

For the City of Lakewood:

Louis L. McMahon

For the State:

L. Scott Helkowski
William Fischbein

For EPA:

Robert Thompson
James Vinch

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

UNITED STATES OF AMERICA)
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Case No. 1:22-cv-01964

INTERIM PARTIAL CONSENT DECREE

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A. Plaintiffs United States of America, on behalf of the United States Environmental Protection Agency (“EPA”), and the State of Ohio, on behalf of the Ohio Environmental Protection Agency (“OEPA”), have filed a complaint in this action concurrently with this Consent Decree alleging that Defendant, City of Lakewood, Ohio (“Lakewood”), violated Section 301(a) of the Clean Water Act (“CWA” or “Act”), 33 U.S.C. § 1311(a), and the terms and conditions of Lakewood’s National Pollutant Discharge Elimination System (“NPDES”) Permit.

B. Lakewood’s Sewer System is a highly complex system that was built over time in the early to mid-1900s without a comprehensive, city-wide plan. As a result, Lakewood’s Sewer System developed piecemeal over time into a patchwork of separate sanitary, separate storm, and combined sewers that presents operational challenges. The combined sewers transport domestic sewage, industrial wastewater, and storm water to Lakewood’s wastewater treatment plant and to eight combined sewer overflow outfalls that discharge a combination of storm water and untreated sanitary sewage to Lake Erie and the Rocky River. The separate sanitary sewers transport sanitary sewage and industrial waste to the wastewater treatment plant, though numerous cross-connections exist between the separate sanitary sewer system and the storm sewer system that allow sewage to enter the storm sewers and discharge from the stormwater outfalls. The sanitary and storm sewers are often located within the same trench, with the storm sewer pipe overlying the sanitary sewer pipe.

C. The sewer system serves both the City of Lakewood and a portion of the City of Rocky River. Lakewood’s sewers have several hydraulic connections to sewers owned by the City of Cleveland and the Northeast Ohio Regional Sewer District (“NEORS”) that are located along the southern and eastern edges of Lakewood, which, depending on connection, either

divert flow from Cleveland and NEORSD's sewers into Lakewood's sewers or from Lakewood's sewers into Cleveland and NEORSD's sewers during wet weather events.

D. Lakewood's Sewer System is bounded on the north by Lake Erie, on the east and south by the City of Cleveland, and on the west by the City of Rocky River.

E. The Complaint against Lakewood alleges that Lakewood violated its NPDES Permit and Section 301(a) of the CWA, 33 U.S.C. §1311(a), by discharging pollutants into the Rocky River or Lake Erie from point sources that are not authorized discharge points under Lakewood's NPDES Permit and from permitted outfalls in violation of general effluent limitations in Lakewood's NPDES Permit.

F. On March 1, 2019, pursuant to requirements of Lakewood's NPDES Permit, Lakewood submitted to Ohio EPA an Integrated Wet Weather Improvement Plan ("IWWIP"). Lakewood's IWWIP includes a series of recommended projects intended to bring Lakewood into compliance with the Clean Water Act by addressing Lakewood's combined sewer overflows, sanitary sewer overflows, and some storm water overflows. The IWWIP was prepared in accordance with the requirements of EPA's Integrated Planning Framework (2012), now codified at 33 U.S.C. § 1342(s). This IWWIP will serve as Lakewood's Long Term Control Plan and satisfy the requirements of EPA's Combined Sewer Overflow Control Policy found at 59 Fed. Reg. 18,688 (April 19, 1994). Lakewood's IWWIP includes an implementation schedule and a financial capability assessment prepared in accordance with EPA guidance and addresses combined sewer overflows, sanitary sewer overflows, and some storm water overflows.

G. Lakewood has started or completed some of the projects proposed in the IWWIP. Lakewood has begun construction on a new High Rate Treatment facility that will treat overflows from one of Lakewood's combined sewer outfalls. Lakewood has also completed a

sewer separation pilot study and some improvements to its regulators that have reduced overflows at two of Lakewood's combined sewer outfalls.

H. This Interim Partial Consent Decree will require Lakewood to complete the construction of the High Rate Treatment facility and design and build two storage facilities that will greatly reduce the number and volume of overflows from Lakewood's Sewer System.

I. The Parties agree that this Interim Partial Consent Decree is an initial step toward settlement that does not fully resolve all of Plaintiffs' claims for injunctive relief for the violations alleged in the Complaint. The Parties also agree that a partial settlement such as this one that requires Lakewood to undertake several large construction projects followed by a period of evaluation and further planning is the best approach in this case, given the complexities of Lakewood's Sewer System and the unique engineering challenges that the system presents. Under this Interim Partial Consent Decree (hereinafter "Consent Decree"), Lakewood will build infrastructure that will significantly reduce the frequency and volume of sanitary sewage discharged into Lake Erie and the Rocky River by the most active Combined Sewer Overflows ("CSOs") in Lakewood's Sewer System. Lakewood will also develop, subject to EPA and OEPA approval, an updated IWWIP with the goal of further reducing CSOs throughout Lakewood's Sewer System and eliminating Sanitary Sewer Overflows ("SSOs"). The Parties anticipate negotiating a subsequent enforceable agreement that will govern the timing and implementation of the updated IWWIP to provide a comprehensive solution to address permitted and unpermitted overflows in the remainder of Lakewood's Sewer System.

J. Lakewood does not admit any liability to the United States or the State arising out of the transactions or occurrences alleged in the Complaint.

K. The Parties recognize, and the Court by entering this Consent Decree finds, that

this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation 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 (Jurisdiction and Venue) 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. Venue lies in this District pursuant to Section 309(b) of the CWA, and 28 U.S.C. §§ 1391(b) and 1395(a), because the violations alleged in the Complaint are alleged to have occurred in, and Lakewood conducts business in, this judicial district. For purposes of this Decree, or any action to enforce this Decree, Lakewood consents to the Court's jurisdiction over this Decree and any such action and over Lakewood and consents to venue in this judicial district.

2. For purposes of this Consent Decree, Lakewood agrees that the Complaint states claims upon which relief may be granted pursuant to Section 309(b) and (d) of the CWA, 33 U.S.C. § 1319(b) and (d).

II. APPLICABILITY

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

4. No transfer of ownership or operation of the Sewer System or Waste Water Treatment Plant, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Lakewood of its obligation to ensure that the terms of the Decree are implemented. At least 30 Days prior to such transfer, Lakewood 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, and the United States Department of Justice, in accordance with Section XV (Notices). Any attempt to transfer ownership or operation of the Facility without complying with this Paragraph constitutes a violation of this Decree.

5. Lakewood 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. Lakewood 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, Lakewood 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. DEFINITIONS

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

a. “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 functioning and performing as designed, *plus* completion of modified operations and maintenance manuals. This specifically includes all control systems and instrumentation necessary for normal operations and all residual handling systems.

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

c. “Combined Sewer System” shall mean the portion of Lakewood’s Sewer System designed to convey sewage (domestic, commercial, and industrial wastewaters) and storm water to Lakewood’s wastewater treatment plant or to a Combined Sewer Overflow (“CSO”) Outfall.

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

e. “Consent Decree” or “Decree” shall mean this Decree and all appendices attached hereto.

f. “Control Measures” shall mean the Control Measures listed in Appendix A of this Decree.

g. “CSO Discharge” or “Combined Sewer Overflow Discharge” shall mean any discharge from Lakewood’s CSO Outfalls.

h. “CSO Outfall” shall mean a designed outfall in the Combined Sewer System identified in the current NPDES Permit under Part II.F as “overflows.”

i. “Date of Lodging” shall mean the date on which this Decree is lodged with the United States District Court for the Northern District of Ohio.

j. “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.

k. “Deliverable” shall mean any written document required to be submitted by Lakewood to EPA and OEPA under this Consent Decree, other than reports required under Section VIII (Reporting Requirements) of the Consent Decree.

l. “Design Criteria” shall mean numeric and/or narrative specifications included in Appendix A that must be met in designing and constructing the Control Measures required by this Consent Decree.

m. “Dry Weather Overflow” shall mean any discharge or overflow from one or more of Lakewood’s permitted CSO Outfalls that is not caused by storm water or other wet weather events.

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

o. “Final Performance Criteria” shall mean the maximum number of CSO Discharges that Lakewood may have in a Typical Year as identified in Paragraph 27 of this Consent Decree that must be met following Lakewood’s completion of construction of all Control Measures specified in the Integrated Wet Weather Improvement Plan, as updated.

p. “Integrated Wet Weather Improvement Plan” or “IWWIP” shall mean the plan that Lakewood submitted on March 1, 2019 pursuant to its NPDES Permit and any subsequent updates.

q. “Lakewood” shall mean the City of Lakewood, Ohio.

r. “Municipal Separate Storm Sewer System” or “MS4” shall mean Lakewood’s system of municipal conveyances designed to collect, convey, and discharge storm water to waters of the United States.

s. “NPDES Permit” means Lakewood’s National Pollutant Discharge Elimination System Permit issued as Permit Number OH0026018 by Ohio EPA, as modified, effective August 1, 2021, or such permits that succeed this permit issued and in effect at a time relevant to a provision of this Consent Decree.

t. “Ohio EPA” or “OEPA” shall mean the Ohio Environmental Protection Agency and any successor departments or agencies of the State of Ohio.

u. “Paragraph” shall mean a portion of this Decree identified by an arabic numeral.

v. “Parties” shall mean the United States, the State of Ohio, and the City of Lakewood, Ohio.

w. “Plaintiffs” shall mean the United States and the State of Ohio.

x. “Private Service Connection Lateral” shall mean the portion of the Sewer System, not owned by Lakewood, used to convey wastewater from a building or buildings to the portion of the Sewer System owned by Lakewood.

y. “Sanitary Sewer Overflow” or “SSO” shall mean any discharge, overflow, spill, diversion, or release of wastewater, regardless of volume, to waters of the United States or the State from Lakewood’s Sanitary Sewer System through sources not authorized to discharge in any NPDES permit, as well as any release of wastewater from Lakewood’s Sanitary Sewer System to public or private property regardless of whether it reaches waters of the United States or State.

z. “Sanitary Sewer System” shall mean the portion of the Sewer System owned and/or operated by the City that is designed to convey sewage from residences, commercial buildings, industrial plants, and institutions to the wastewater treatment plant.

aa. “Section” shall mean a portion of this Decree identified by a roman numeral.

bb. “Sewer System” shall mean the sewer system owned and/or operated by Lakewood that is designed to convey sewage and storm water, including the Sanitary Sewer System, Combined Sewer System, and the Municipal Separate Storm Sewer System.

cc. “State” shall mean the State of Ohio.

dd. “Substantial Completion of Construction” shall mean completion of construction and installation of equipment or infrastructure such that the equipment or infrastructure has been placed in full operation and will both function and perform as designed. This specifically includes all control systems and instrumentation necessary for normal operations and all residual handling systems and excludes completion of modified operations and maintenance manuals required for Achievement of Full Operation.

ee. “Typical Year” shall mean Lakewood’s modification of the 1977 rainfall record from the rain gauge at Hopkins Airport Cleveland (CLE), as described in Section 8.3 of Lakewood’s “Integrated Wet-Weather Improvement Plan; Hydraulic Modeling Technical Memorandum” (by CT Consultants, dated November 11, 2014) (also found as Attachment B to the IWWIP Phase 1).

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

gg. “Waste Water Treatment Plant” or “WWTP” shall mean the waste water treatment plant owned and operated by Lakewood in Cuyahoga County, Ohio and located at 1699 Valley Parkway, Lakewood, Ohio and any other existing or future waste water treatment facilities connected to Lakewood’s Sewer System.

IV. OBJECTIVES

8. It is the express purpose of the Parties in entering into this Consent Decree to further the objectives of the Clean Water Act, as enunciated in Section 101 of the Act, 33 U.S.C. § 1251 *et seq.* All plans, reports, construction, and other obligations in this Consent Decree shall have the objective of causing Lakewood to come into and remain in compliance with the terms and conditions of its NPDES Permit, the Clean Water Act, and all applicable federal and state regulations promulgated in accordance with the Act.

V. CIVIL PENALTY

9. Within 30 Days after the Effective Date, Lakewood shall pay the sum of \$50,000 to the United States and \$50,000 to the State as a civil penalty, together with interest accruing from the date on which the Consent Decree is lodged with the Court, at the rate specified in 28 U.S.C. § 1961 as of the date of lodging.

10. Lakewood shall pay the civil penalty due to the United States by FedWire Electronic Funds Transfer (“EFT”) to the U.S. Department of Justice account, in accordance with instructions provided to Lakewood by the Financial Litigation Unit (“FLU”) of the United States Attorney’s Office for the Northern District of Ohio after the Effective Date. The payment instructions provided by the FLU will include a Consolidated Debt Collection System (“CDCS”) number, which Lakewood shall use to identify all payments required to be made in accordance with this Consent Decree. The FLU will provide the payment instructions to:

Director of Finance
finance@lakewoodoh.net
216-529-6090
12650 Detroit Ave.
Lakewood, OH 44107

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

11. At the time of payment, Lakewood shall send notice that payment has been made: (i) to EPA via email at cinwd_acctsreceivable@epa.gov or via regular mail at EPA Cincinnati Finance Office, 26 W. Martin Luther King Drive, Cincinnati, Ohio 45268; (ii) to the United States via email or regular mail in accordance with Section XV; and (iii) to EPA in accordance with Section XV. Such notice shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in *The United States of America and the State of Ohio v. City of Lakewood, Ohio* and shall reference the civil action number, CDCS Number and DOJ case number 90-5-1-1-08725/1.

12. Payment to the State will be made by cashier's check or certified funds, payable to "Treasurer, State of Ohio," and will be sent to: Sandra Finan, Paralegal, or her successor, at the Office of the Ohio Attorney General, Environmental Enforcement Section, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215.

13. Payment may also be made by electronic funds transfer to the designated accounts pursuant to instructions sent by the State. A copy of the check and transmittal letter or other evidence of payment shall also be sent to the Ohio Attorney General's Office and Ohio EPA.

VI. COMPLIANCE REQUIREMENTS

A. General Compliance Requirements

14. Permit Compliance. Lakewood shall comply at all times with its NPDES Permit.

15. Permits. Where any compliance obligation under this Section requires Lakewood to obtain a federal, state, or local permit or approval, Lakewood shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. Lakewood may seek relief under the provisions of Section X (Force Majeure) 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 Lakewood has submitted timely and complete applications and has taken all other actions necessary to obtain all such permits or approvals.

16. No Dry Weather Overflows. Dry Weather Overflows are prohibited.

17. CSO Control Policy Compliance. All compliance requirements in this Section of the Consent Decree shall be implemented consistent with the “Combined Sewer Overflow (CSO) Control Policy,” 59 Fed. Reg. 18,688 (April 19, 1994).

B. Phased Implementation of Lakewood’s IWWIP

18. Lakewood’s IWWIP. On March 1, 2019, Lakewood submitted an IWWIP as required by Lakewood’s NPDES Permit to address overflows in its Sewer System. In the IWWIP, Lakewood proposes implementing, over time, five sets of projects described as “Bundles” designed to bring Lakewood into compliance with the CWA.

19. Implementing Bundle 1 Projects. Lakewood shall implement Bundle 1 Projects in accordance with the descriptions, Design Criteria, and implementation schedule for each project as specified in Appendix A (Bundle 1 Projects Schedule and Design Criteria). The Bundle 1

Projects include the construction of a high rate treatment facility and the design and construction of two storage facilities, which will greatly reduce the number and volume of the most active CSOs in Lakewood's Sewer System. All Bundle 1 Projects listed in Appendix A shall be completed as expeditiously as practicable and in accordance with the implementation schedule. All Bundle 1 Projects shall achieve Substantial Completion of Construction no later than December 31, 2031.

20. Implementing Pollutant Sampling Pilot Study. Lakewood shall implement a Pollutant Sampling Pilot Study ("Sampling Pilot Study") in accordance with the Sampling Pilot Study description attached as Appendix B. The purpose of the Sampling Pilot Study is to help Lakewood select parameters and develop a protocol to estimate as close as possible the concentration of sanitary sewage in Lakewood's stormwater outfalls. The selected parameters and identified protocol will then be incorporated into the Bundle 1 Monitoring Plan, where appropriate, and will be incorporated into future post-construction monitoring plans to evaluate the effectiveness of Control Measures implemented under an updated IWWIP. Lakewood shall implement the Sampling Pilot Study and submit the project summary report in accordance with the timeline in Appendix B.

C. Bundle 1 Monitoring and Reporting

21. Bundle 1 Monitoring Plan. By July 1, 2030, Lakewood shall submit a Bundle 1 Monitoring Plan to assess the effectiveness of the Bundle 1 Projects. The Bundle 1 Monitoring Plan shall be consistent with the requirements listed in Appendix C and EPA's CSO Post-Construction Compliance Monitoring Guidance (May 2012) and shall incorporate the protocol developed under the Sampling Pilot Project, where appropriate. The Bundle 1 Monitoring Plan shall include rainfall monitoring, monitoring of permitted and unpermitted overflow points, and

monitoring at other specified locations throughout Lakewood's Sewer System. The data collected through implementation of the Bundle 1 Monitoring Plan will then be used to validate or recalibrate Lakewood's Sewer System Hydraulic Model to help Lakewood develop a comprehensive solution, which could include more effective projects, to address permitted and unpermitted overflows in the remainder of Lakewood's Sewer System.

22. Upon approval of the Bundle 1 Monitoring Plan under Section VII of this Decree (Review, Approval, and Implementation of Deliverables) and completion of the Bundle 1 Projects, Lakewood shall implement the Bundle 1 Monitoring Plan in accordance with the provisions and schedules set forth therein. Lakewood shall conduct monitoring activities for a period of 12 months (which could be extended by up to 12 months if Lakewood experiences significantly atypical weather). Any such extension will be considered a non-material modification.

23. Sewer System Hydraulic Model Validation/Recalibration. Once the Bundle 1 Monitoring Plan has been implemented and completed, Lakewood shall validate or recalibrate, if necessary, its Sewer System Hydraulic Model consistent with the requirements in Appendix C (Bundle 1 Monitoring Plan Requirements and Model Validation/Recalibration Requirements). No later than August 1, 2033 (unless extended by 12 months), Lakewood shall submit to EPA and OEPA, for review and comment, a Model Validation Report describing the successful validation and, if necessary, recalibration of the Model.

24. Bundle 1 Report. By August 1, 2033 (unless extended by 12 months), Lakewood shall submit to EPA and OEPA, for review and approval under Section VII of this Decree (Review, Approval, and Implementation of Deliverables), a detailed Bundle 1 Report. At a minimum, the detailed report shall include: (1) a description of the methods used to evaluate the

effectiveness of the Bundle 1 Control Measures; (2) the effectiveness of the Bundle 1 Control Measures and an analysis of the progress made toward meeting the relevant Final Performance Criteria; (3) the outfalls and areas within the collection system that were monitored; (4) overflow volume, activation data, and any other flow data collected as part of the monitoring; (5) precipitation data collected as part of the monitoring; and (6) validation/recalibration of Lakewood's Sewer System Hydraulic Model.

D. Updated IWWIP

25. Submitting an updated IWWIP. By December 31, 2034 (unless extended by 12 months per Paragraph 22), Lakewood shall submit to EPA and OEPA, for review and approval under Section VII of this Decree (Review, Approval, and Implementation of Deliverables), an updated IWWIP revised to provide a comprehensive solution to address permitted and unpermitted overflows in the remainder of Lakewood's Sewer System. The requirements for Lakewood's updated IWWIP are included in the attached Appendix D.

26. The final deadline for completing all remedial measures specified in the updated IWWIP must be as expeditious as practicable, but shall be no later than December 31, 2047.

27. Final Performance Criteria. Lakewood's updated IWWIP shall include a commitment to meet at least the following Final Performance Criteria for Lakewood's permitted CSO Outfalls expressed as the maximum number of CSO Discharges that Lakewood may have in a Typical Year as determined by the most recently updated system model and consistent with Lakewood's post-construction monitoring plan:

- CSO 052 – No more than 4 overflows in a Typical Year. As described in Appendix A (Bundle 1 Projects Schedule and Design Criteria), Lakewood will

construct a storage basin with a capacity of 6.1 million gallons to control overflows from 052;

- CSO 053 – 0 overflows in a Typical Year;
- CSO 054 – elimination of this outfall;
- CSO 055 – No more than 4 overflows in a Typical Year;
- CSO 056 – No more than 4 overflows in a Typical Year;
- CSO 057 – No more than 4 overflows in a Typical Year;
- CSO 058 – No more than 4 overflows in a Typical Year;
- CSO 059 – No more than 4 overflows in a Typical Year. As described in Appendix A (Bundle 1 Projects Schedule and Design Criteria), Lakewood will construct a storage basin with a capacity of 1.5 million gallons to control overflows from 059.

28. Implementing the updated IWWIP. Lakewood will ultimately be required through a subsequent, enforceable agreement with the United States and the State of Ohio to fully implement its updated IWWIP, including the requirements in Paragraphs 26 and 27, to address the permitted and unpermitted overflows in its Sewer System and to demonstrate compliance by a date certain in a manner consistent with meeting its Final Performance Criteria and the Clean Water Act.

VII. REVIEW, APPROVAL, AND IMPLEMENTATION OF DELIVERABLES

29. Approval of Deliverables. After review of any Deliverable that is required to be submitted pursuant to this Consent Decree, EPA, after consultation with the State, shall in writing: (a) approve the submission in whole or in part; (b) approve the submission upon

specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission.

30. **Approved Deliverables.** If the Deliverable is approved pursuant to Paragraph 29(a), Lakewood shall take all actions required by the Deliverable in accordance with the schedules and requirements of the Deliverable as approved. If the Deliverable is conditionally approved or approved only in part pursuant to Subparagraph 29(b) or (c), Lakewood shall, upon written direction from EPA, take all actions required by the approved Deliverable that EPA, after consultation with the State, determines are technically severable from any disapproved portions. Following EPA approval of any submission or portion thereof, such Deliverable or portion thereof so approved shall be incorporated into and become enforceable under this Consent Decree. Implementation of any non-deficient portion of a Deliverable shall not relieve Lakewood of any liability for stipulated penalties for any deficient portion of the Deliverable.

31. **Disapproved Deliverables.** If the submission is disapproved in whole or in part pursuant to Subparagraph 29(c) or (d), Lakewood shall, within 60 days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit to EPA the Deliverable, or disapproved portion thereof, for approval. If the resubmission is approved in whole or in part, Lakewood shall proceed in accordance with Paragraph 30.

32. **Resubmitted Deliverables.** If a resubmitted Deliverable, or portion thereof, is disapproved in whole or in part, EPA, after consultation with the State, may again require Lakewood to correct any deficiencies, in accordance with Paragraph 31. EPA also retains the right to modify or develop any disapproved portion of the resubmitted Deliverable. Upon EPA's correction of any such deficiencies, the resubmitted Deliverable, or portion thereof, shall be incorporated into and become enforceable under this Consent Decree and Lakewood shall take

all actions to immediately implement the EPA-corrected Deliverable in accordance with the schedules and/or terms of the Deliverable as approved, subject to Lakewood's right to invoke Dispute Resolution under Section XI (Dispute Resolution) of this Consent Decree and the right of EPA and the State to seek stipulated penalties as set forth in Paragraph 33.

33. Accrual of Stipulated Penalties. Any stipulated penalties applicable to the untimely submission of the original Deliverable, as provided in Section IX (Stipulated Penalties) of this Consent Decree, shall accrue during the 60-Day period or other specified period, but shall not be payable unless the resubmitted Deliverable is untimely or is disapproved in whole or in part; provided that, if the original Deliverable was so deficient as to constitute a material breach of Lakewood's obligations under this Consent Decree, the stipulated penalties applicable to the original Deliverable shall be due and payable notwithstanding any subsequent resubmission.

34. Certification. In all submissions, notices, documents, or reports required to be submitted to the United States (including EPA) or the State pursuant to this Consent Decree, Lakewood shall sign and certify such submission, notices, documents, and reports as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

35. Admissibility in Other Proceedings. Any information submitted by Lakewood pursuant to this Consent Decree may be used by the United States or Ohio in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law. Lakewood shall not object to the accuracy, authenticity, and/or admissibility into evidence of any

submission in any proceeding to enforce this Consent Decree. Lakewood reserves all rights and defenses in all other proceedings.

36. Copy to OEPA. Lakewood shall provide a copy of each document to OEPA at the same time such document is provided to EPA.

VIII. REPORTING REQUIREMENTS

37. Semi-annual Reports. By July 31st and January 31st of each year after the lodging of this Consent Decree, until termination of this Decree pursuant to Section XIX (Termination), Lakewood shall submit to EPA and OEPA a semi-annual report for the preceding six months that contains all information necessary to determine Lakewood's compliance with the requirements of this Consent Decree. The Semi-annual Reports shall each include, at a minimum, information on the following topics:

a. a description of the projects and activities conducted during the reporting period to comply with the requirements of this Decree, a projection of work to be performed pursuant to this Consent Decree during the next reporting period, a table showing the approved projects from the IWWIP (including the project number, short description, projected and actual dates of all items listed in the implementation schedule column of Appendix A of this Consent Decree), and notice of any anticipated failures to meet future requirements of the Consent Decree or approved plans;

b. information that Lakewood obtained or received (*e.g.*, customer complaints) regarding discharges from Private Service Connection Laterals, including any information received specifying the location of the discharge, and a description of the circumstances of the discharge; and

c. a description of any non-compliance with the requirements of this Consent

Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If Lakewood violates, or has reason to believe that it may violate, any requirement of this Consent Decree, Lakewood shall notify the United States and the State of such violation and its likely duration, in writing, within ten working Days of the Day Lakewood first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Lakewood shall so state in the report. Lakewood shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the Day Lakewood becomes aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves Lakewood of its obligation to provide the notice required by Section X (Force Majeure).

38. Public Website. Lakewood shall maintain its Clean Water Lakewood Website ("Website") as part of its official home page, lakewoodoh.gov, as an operable, discoverable Website on which it will post Consent Decree documents. Lakewood shall describe the purpose of each type of document posted and shall include the following language: "[Name of document] has been posted in accordance with the Consent Decree in *United States and State of Ohio v. City of Lakewood*. [Name of document] may not have been reviewed or verified by EPA prior to posting. If you have any questions about the information in the [name of document], how it was collected, or what it means, please contact Lakewood Public Works Director at (216) 529-6800." Each posted document shall remain posted for at least five years. All posted documents shall be readily accessible, searchable, clearly labeled, and clearly presented to the public. The Website shall include the following:

a. Consent Decree Submissions. Lakewood shall post to the Website all final EPA-reviewed and/or -approved plans, reports, or other submissions required by Sections VI (Compliance Requirements) and VIII (Reporting Requirements). Documents requiring EPA approval shall be posted within ten Days of approval. All other documents shall be posted within 30 days of submission to EPA.

b. Other Public Presentations and Education Materials. Lakewood shall post to its Website materials used in presentations to the public related to the work under this Consent Decree and other relevant educational materials identified by Lakewood.

39. Public Signage. Lakewood shall maintain signage to inform the public that a rain-related CSO may occur that may impact the water body and may contain sanitary sewage as required under its NPDES permit and by applicable law.

40. Whenever any violation of this Consent Decree or of any applicable permits or any other event affecting Lakewood's performance under this Decree, or the performance of its Sewer System or WWTP may pose an immediate threat to the public health or welfare or the environment, Lakewood shall notify EPA and the State orally or by electronic transmission as soon as possible, but no later than 24 hours after Lakewood first knew of the violation or event. This procedure is in addition to the requirements set forth in this Section.

41. Each report submitted by Lakewood under this Section shall be signed by an official of Lakewood and include the certification set forth in Paragraph 34. This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

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

IX. STIPULATED PENALTIES

43. Lakewood shall be liable for stipulated penalties to the United States and the State for violations of this Consent Decree as specified below, unless excused under Section X (Force Majeure). 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.

44. Late Payment of Civil Penalty. If Lakewood fails to pay the civil penalty required to be paid under Section V (Civil Penalty) when due, Lakewood shall pay a stipulated penalty of \$1,000 per Day for each Day that the payment is late, in accordance with the payment instructions in Paragraphs 9 - 13.

45. Compliance Requirements. The following stipulated penalties shall accrue per violation per Day for failing to meet any of the following requirements or implementation schedules in Section VI (Compliance Requirements): Paragraph 19 (Implementing Bundle 1 Projects); Paragraph 20 (Implementing Pollutant Sampling Pilot Study); Paragraph 21 (Bundle 1 Monitoring Plan); Paragraph 22 (Implementing Bundle 1 Monitoring Plan); Paragraph 23 (Sewer System Hydraulic Model Validation/Recalibration); Paragraph 25 (Submitting an updated IWWIP); and Paragraph 27 (including Final Performance Criteria):

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th day
\$4,000	15th through 30th day
\$8,000	31st day and beyond

46. Reporting Requirements. The following stipulated penalties shall accrue per violation per Day for each violation of Paragraph 24 (Bundle 1 Report) and the reporting requirements of Section VIII (Reporting Requirements):

<u>Penalty Per Violation Per day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th day
\$2,500	15th through 30th day
\$5,000	31st day and beyond

47. 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.

48. Lakewood shall pay any stipulated penalty within 30 Days of receiving a written demand for payment. Either the United States or the State, or both, may elect to demand stipulated penalties under this Section; however, the United States and the State shall consult with each other before making any demand. Where both agencies demand stipulated penalties, any such penalties determined to be owing shall be paid 50 percent to the United States and 50 percent to the State. Where only one Plaintiff demands stipulated penalties, the entire amount of stipulated penalties shall be paid to the Plaintiff who made the demand. The Plaintiff making a demand for payment of a stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff. In no case shall the determination by one Plaintiff not to seek stipulated

penalties preclude the other Plaintiff from seeking stipulated penalties in accordance with this Decree.

49. Either Plaintiff may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due it under this Consent Decree.

50. Stipulated penalties shall continue to accrue as provided in Paragraph 47, 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 OEPA that is not appealed to the Court, Lakewood shall pay accrued penalties determined to be owing, together with interest, to the United States and/or the State within 30 Days of the effective date of the agreement or the receipt of EPA or OEPA's decision or order.

b. If the dispute is appealed to the Court and the United States and State prevail in whole or in part, Lakewood shall pay all accrued penalties determined by the Court to be owing, together with interest, within 60 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, Lakewood shall pay all accrued penalties determined to be owing, together with interest, within 15 Days of receiving the final appellate court decision.

51. Lakewood shall pay stipulated penalties owing to the United States and the State in the manner set forth and with the confirmation notices required by Paragraphs 11 and 13, 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.

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

53. The payment of penalties and interest, if any, shall not alter in any way Lakewood's obligation to complete the performance of the requirements of this Consent Decree.

54. Non-Exclusivity of Remedy. Stipulated penalties are not the United States' or the State's exclusive remedy for violations of this Consent Decree. Subject to the provisions of Section XIII (Effect of Settlement/Reservation of Rights), the United States and the State expressly reserve the right to seek any other relief they deem appropriate for Lakewood's violation of this Decree or applicable law, including but not limited to an action against Lakewood for statutory penalties, additional injunctive relief, mitigation or offset measures, and/or contempt. However, the amount of any statutory penalty assessed for a violation of this Consent Decree shall be reduced by an amount equal to the amount of any stipulated penalty assessed and paid pursuant to this Consent Decree.

X. FORCE MAJEURE

55. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Lakewood, of any entity controlled by Lakewood, or of Lakewood's contractors, which delays or prevents the performance of any obligation under this Consent Decree despite Lakewood's best efforts to fulfill the obligation. The requirement that Lakewood exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (a) as it is occurring and (b) following the potential force majeure,

such that the delay and any adverse effects of the delay are minimized. “Force Majeure” does not include Lakewood’s financial inability to perform any obligation under this Consent Decree.

56. 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, Lakewood shall provide notice orally or by electronic transmission to EPA and the State, within 72 hours of when Lakewood first knew that the event might cause a delay. Within seven days thereafter, Lakewood shall provide in writing to EPA and the State an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Lakewood’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 the opinion of Lakewood, such event may cause or contribute to an endangerment to public health, welfare or the environment. Lakewood 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 Lakewood 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. Lakewood shall be deemed to know of any circumstance of which Lakewood, any entity controlled by Lakewood, or Lakewood’s contractors knew or should have known.

57. If EPA, after a reasonable opportunity for review and comment by the State, agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA, after a reasonable opportunity for review and comment by the

State, 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 Lakewood in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

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

59. If Lakewood elects to invoke the dispute resolution procedures set forth in Section XI (Dispute Resolution), it shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Lakewood 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 Lakewood complied with the requirements of Paragraphs 55 and 56. If Lakewood carries this burden, the delay at issue shall be deemed not to be a violation by Lakewood of the affected obligation of this Consent Decree identified to EPA and the Court.

XI. DISPUTE RESOLUTION

60. 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. Lakewood's failure to seek resolution of a dispute under this Section shall preclude Lakewood from raising any such issue as a defense to an action by the United States to enforce any obligation of Lakewood arising under this Decree.

61. 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 Lakewood sends the United States and the State a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 60 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 United States shall be considered binding unless, within 15 Days after the conclusion of the informal negotiation period, Lakewood invokes formal dispute resolution procedures as set forth below.

62. Formal Dispute Resolution. Lakewood shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States and the State 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 Lakewood's position and any supporting documentation relied upon by Lakewood.

63. The United States, after consultation with the State, shall serve its Statement of Position within 45 Days of receipt of Lakewood's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States' Statement of Position shall be binding on Lakewood, unless Lakewood files a motion for judicial review of the dispute in accordance with the following Paragraph.

64. Judicial Review. Lakewood may seek judicial review of the dispute by filing with the Court and serving on the United States and the State, in accordance with Section XV (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within ten Days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Lakewood'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.

65. The United States, after consultation with the State, shall respond to Lakewood's motion within the time period allowed by the Local Rules of this Court. Lakewood may file a reply memorandum, to the extent permitted by the Local Rules.

66. Standard of Review

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought under Paragraph 62 pertaining to the adequacy or appropriateness of plans, procedures to implement plans, schedules or any other items requiring approval by EPA under this Consent Decree; the adequacy of the performance of work undertaken pursuant to this Consent Decree; and all other disputes that are accorded review on the administrative record under applicable principles of administrative law, Lakewood shall have the burden of demonstrating, based on the administrative record, that the position of the United States is arbitrary and capricious or otherwise not in accordance with law.

b. Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under Paragraph 62, Lakewood shall bear the burden of demonstrating that its position complies with this Consent Decree.

67. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Lakewood 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 50. If Lakewood does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section IX (Stipulated Penalties).

XII. INFORMATION COLLECTION AND RETENTION

68. The United States, the State, and their representatives, including attorneys, contractors, and consultants, shall have the right of entry into the Sewer System or any facility covered by this Consent Decree, at all reasonable times in accordance with OSHA safety protocols, 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 Lakewood or its representatives, contractors, or consultants;
- d. obtain documentary evidence, including photographs and similar data; and
- e. assess Lakewood's compliance with this Consent Decree.

69. Upon request, Lakewood shall provide EPA and the State or their authorized representatives splits of any samples taken by Lakewood. Upon request, EPA and the State shall provide Lakewood splits of any samples taken by EPA or the State.

70. Until five years after the termination of this Consent Decree, Lakewood 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 Lakewood'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, Lakewood shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

71. At the conclusion of the information-retention period provided in the preceding Paragraph, Lakewood 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, Lakewood shall deliver any such documents, records, or other information to EPA or the State. Lakewood 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 Lakewood asserts such a privilege, it shall provide the following: (a) the title of the document, record, or information; (b) the date of the document, record, or information; (c) the name and title of each author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the subject of the document, record, or information; and (f) the privilege asserted by Lakewood. 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.

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

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

XIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

74. This Consent Decree is a partial resolution of the civil claims of the United States and the State for the violations alleged in the Complaint filed in this action. This Consent Decree resolves the claims for civil penalty of the United States and the State for the violations alleged in the Complaint filed in this action through the Date of Lodging. This Consent Decree does not resolve the claims for injunctive relief and is without prejudice to the United States’ or the State’s right to seek further injunctive relief to address the civil claims alleged in the Complaint. This Consent Decree also does not resolve and is without prejudice to any future claims, including, but not limited to, further injunctive relief, civil penalties, and the right of the United States and the State to seek further administrative relief to address these claims. Except as expressly provided in this Consent Decree, Lakewood reserves all rights and defenses. It is the present intention of the Parties to seek to negotiate a subsequent enforceable agreement to fully resolve the civil claims of the United States and the State for the violations alleged in the Complaint filed in this action.

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

76. 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 the Sewer System and WWTP or Lakewood's violations, Lakewood 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.

77. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. Lakewood is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and Lakewood'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 Lakewood's compliance with any aspect of this Consent

Decree will result in compliance with provisions of the Act, 33 U.S.C. § 1311 et seq., or with any other provisions of federal, State, or local laws, regulations, or permits.

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

79. 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.

XIV. COSTS

80. 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 Lakewood.

XV. NOTICES

81. Unless otherwise specified in this Decree, whenever notifications, submissions, or communications are required by this Consent Decree, they shall only be made electronically to the email address below unless specified otherwise:

Party	Email Address	Mailing Address
EPA	r5weca@epa.gov Re: DJ #90-5-1-1-08725/1 (City of Lakewood, OH0026018) thompson.robertl@epa.gov	Chief, Water Enforcement and Compliance Assurance Branch (ECW-15J) U.S. Environmental Protection Agency, Region 5 77 West Jackson Boulevard Chicago, IL 60604 and Regional Counsel (C-14J) U.S. Environmental Protection Agency, Region 5 77 West Jackson Boulevard Chicago, IL 60604
DOJ	eescdcopy.enrd@usdoj.gov Re: DJ #90-5-1-1-08725/1	EES Case Management Unit Environment and Natural Resources Division U.S. Department of Justice P.O. Box 7611 Washington, D.C. 20044-7611 Re: DJ #90-5-1-1-08725/1
State of Ohio	lawrence.helkowski@ohioattorneygeneral.gov	L. Scott Helkowski Environmental Enforcement Section 30 E. Broad Street, 25th Floor Columbus, OH 43215-3400
OEPA	wetweather.npdes@ohio.epa.gov	Wet Weather Coordinator Ohio EPA Division of Surface Water 50 West Town Street P.O. Box 1049 Columbus OH 43216
Lakewood	law@lakewoodoh.net	Director of Law City of Lakewood 12650 Detroit Avenue Lakewood, OH 44107

82. Materials required to be sent to the United States shall be sent to DOJ and EPA as directed in the previous paragraph. Materials may be sent by email or mail and need not be sent by both. Materials sent by email must be text searchable pdf documents, if possible.

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

84. 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.

XVI. EFFECTIVE DATE

85. 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 Lakewood 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.

XVII. RETENTION OF JURISDICTION

86. 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 XI and XVIII, or effectuating or enforcing compliance with the terms of this Decree.

XVIII. MODIFICATION

87. 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. Mutually agreeable changes to the interim deadlines in Appendix A (Bundle 1 Projects Schedule and Design Criteria) are not considered material changes, so long as the changes in the schedule do not extend past December 31, 2031.

88. Any disputes concerning modification of this Decree shall be resolved pursuant to Section XI (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 66, 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).

XIX. TERMINATION

89. After Lakewood has completed the requirements of Section VI (Compliance Requirements), has complied with all other requirements of this Consent Decree, has paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree, and has entered into an enforceable agreement under which Lakewood will implement the updated IWWIP as required by Paragraph 28, Lakewood may serve upon the United States and the State a Request for Termination, stating that Lakewood has satisfied those requirements, together with all necessary supporting documentation.

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

91. If the United States, after consultation with the State, does not agree that the Decree may be terminated, Lakewood may invoke Dispute Resolution under Section XI. However, Lakewood shall not seek Dispute Resolution of any dispute regarding termination until 60 Days after service of its Request for Termination.

92. Regardless of whether Lakewood has requested termination of the Consent Decree pursuant to Paragraph 89, the United States and the State may seek the Court's approval to terminate this Consent Decree based upon the United States' and the State's determination that Lakewood has met the requirements for termination in accordance with this Section.

XX. PUBLIC PARTICIPATION

93. 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. Lakewood 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 Lakewood in writing that it no longer supports entry of the Decree.

XXI. SIGNATORIES/SERVICE

94. Each undersigned representative of Lakewood, the State, and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice identified on the DOJ signature page below, 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.

95. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. Lakewood 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. Lakewood need not file an answer to the Complaint in this action unless or until the Court expressly declines to enter this Consent Decree.

XXII. INTEGRATION

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

XXIII. STAY OF LITIGATION

97. In light of the partial resolution of the United States' and State's claims and the Parties' expectations outlined above, the Court hereby stays all litigation in this action unless or until the United States advises the Court that further litigation is needed to achieve full resolution of its claims.

XXIV. APPENDICES

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

“Appendix A” is Bundle 1 Projects Schedule and Design Criteria;

“Appendix B” is Pollutant Sampling Pilot Study;

“Appendix C” is Bundle 1 Monitoring Plan Requirements and Model Validation/Recalibration Requirements;

“Appendix D” is Requirements for Lakewood’s Updated IWWIP.

Dated and entered this _____ day of _____, 202__.

UNITED STATES DISTRICT JUDGE

FOR THE UNITED STATES OF AMERICA:

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

10/28/22
Date

/s/ Alison C. McGregor
ALISON C. MCGREGOR
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Washington, DC 20044-7611

MICHELLE M. BAEPLER
First Assistant United States Attorney
Northern District of Ohio

/s/Steven J. Paffilas

STEVEN J. PAFFILAS (OH 0037376)
Assistant United States Attorney
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Cleveland, OH 44113

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

Digitally signed by DIANA
SAENZ
Date: 2022.10.27 16:38:27
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DIANA SAENZ

Date

DIANA SAENZ
Acting Division Director
Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

Date

ROBERT KAPLAN

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ROBERT A. KAPLAN
Regional Counsel
U.S. Environmental Protection Agency, Region 5
77 W. Jackson Blvd.
Chicago, IL 60604

**ROBERT
THOMPSON**

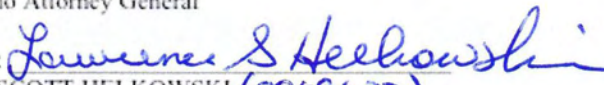
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Date: 2022.09.28 10:34:00 -05'00'

ROBERT THOMPSON
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U.S. Environmental Protection Agency, Region 5
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FOR THE STATE OF OHIO:

10/21/2022
Date

DAVE YOST
Ohio Attorney General

By: 
L. SCOTT HELKOWSKI (008622)
Assistant Attorney General
Environmental Enforcement Section
30 E. Broad Street, 25th Floor
Columbus, Ohio 43215-3400

FOR THE CITY OF LAKEWOOD:

10/12/2022
Date

Meghan George
Mayor Meghan George

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Appendix A

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Bundle 1 Projects Schedule and Design Criteria

Project Number	Control Measure	Description	Design Criteria	Implementation Schedule
1	High Rate Treatment Facility (HRT)	HRT facility for control of CSO 002	Build in conformance with State Permit to Install	Currently being built. Substantial Completion of Construction: 9/1/22 Achievement of Full Operation: 12/31/24
2	052 Storage	Design and construct storage for CSO 052 and aerial sewer to storage at or near WWTP	Design 6.1 MG of storage	Complete Design: 6/1/25 Initiate Construction: 6/1/26 Substantial Completion of Construction: 12/31/28 Achievement of Full Operation: 12/31/2030
3	059 Storage	Evaluate land use requirements, Design and construct storage for CSO 059 and related interceptor overflow storage facilities	Design 1.5 MG of storage	Complete Design: 12/31/29 Initiate Construction: 6/1/30 Substantial Completion of Construction: 12/31/31 Achievement of Full Operation: 7/1/2033
4	Pipe lining and replacements	Completed with annual watermain replacements, as necessary and hydraulically feasible	Evaluated on project by project basis in accordance with the IWWIP	

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Appendix B

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Pollutant Sampling Pilot Study

A. Parameters and Testing

Lakewood is implementing this pilot study pursuant to Paragraph 20 of the Consent Decree. Once completed, it will be incorporated into the Bundle 1 Monitoring Plan and subsequent monitoring plans, as appropriate, in accordance with Paragraph 20 of the Consent Decree. In this pilot study, the following sampling parameters will be evaluated in order to identify the parameters that provide the most accurate, efficient, and cost-effective data to determine if there is sewage in the stormwater downstream of these improvements:

1. Fluoride
2. Escherichia coli (E. coli) in accordance with methods approved by EPA
3. CBOD
4. Enterococcus
5. Ammonia/Potassium
6. MST

Testing methods selected shall follow 40 CFR Part 136 except as otherwise noted below in this Appendix, and the most accurate and appropriate test at the time of the sampling effort shall be utilized. Testing shall be performed by an OEPA-approved laboratory. The following parameter descriptions are general guidelines concerning the parameters at the time of lodging of the Consent Decree.

1. Fluoride – Fluoride is added to drinking water for dental health. Very little fluoride is absorbed by human consumption, and most is discharged with household sewage. Sewage is one of three possible sources that can contribute to fluoride concentrations in Lakewood stormwater.

- a. Domestic sewage - Raw water from Lake Erie is processed and fluoride added to raise levels in tap water to an average concentration of 1.0 mg/l (Cleveland Water Department website).
- b. Surface runoff waters - Fluoride can build up on the ground from windblown soils, fertilizing, domestic pets, and other human activities. Surface water runoff can contain up to 0.2 mg/l fluoride reflecting rainwater contact with these sources.
- c. Groundwater - Fluoride concentrations in groundwater worldwide can range as high as 10 mg/l. Ohio is in an area with a low probability of high fluoride concentrations in the groundwater; however, concentrations in Lakewood groundwater are not known.

The fluoride concentration will be measured using Standard Methods 4500-F⁻ C-2011

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(electrode manual). The holding time for a fluoride sample is 28 days. The Laboratory fluorimeter has a minimum detectable limit of 0.05 mg/l. At this detection limit, sewage can be detected in stormwater up to a dilution of 1 part in 16 (0.8/0.05).

2. Escherichia coli - E. coli is used as a benchmark in many past studies. It can be paired with other constituents to increase confidence in results. E. coli is a bacterium found in the lower intestines of warm-blooded animals, and the bacteria are discharged as a component of the feces. Because E. coli is so ubiquitous in many species of animal, a high number of cfu/100ml is not a conclusive indication of human fecal contamination. At very high concentrations, (such as those typically cited as CSO Event Mean Concentrations or EMCs) presumption of the presence of sewage may be appropriate. Therefore, the presence of E.coli alone cannot confirm the presence of human sewage in stormwater. Stormwater runoff samples should be tested to establish baseline values for E. coli, then presence and quantity of sewage in the stormwater can be monitored based on any increase in the values.

The WWTP dry weather influent collected in 2019 has an average measured E. coli concentration of 1.46×10^7 colony forming units per 100 milliliters (cfu/100ml). Sampling and testing conducted for the pollutant model resulted in an average stormwater runoff concentration of 4.53×10^5 cfu/100ml, however, the concentration varied during the wet weather events.

The E. coli sample will be collected and placed on ice. The maximum holding time until testing is 8 hours. The E. coli concentration will be measured using the Colilert 18 – IDEXX US test procedure. Results will be available in 18 hours. The results are reported as most probable number with upper and lower confidence limits of 95%. The test procedure has a minimum detectable limit of 1 cfu/100ml. At this detection limit, E. coli will be detected to some extent in both the over and under sewer samples. Lakewood will use a statistical analysis of the over sewer and under sewer samples to determine if the E. coli increase, if any, is sufficient to determine if there is sewage in the over sewer.

3. CBOD – CBOD is not specific to sanitary sewage. Instead, it has been included in this study specifically because Lakewood has previously used a “tracer” in the model to differentiate CBOD from sewage as compared to CBOD from stormwater runoff. The City has used CBOD discharge quantities to evaluate remedial measures. Lakewood will use the CBOD data collected in this study to evaluate its SWMM model.

For the Lakewood SWMM model the concentration of CBOD from sewage was calculated at 177 mg/l as it leaves the homes. An additional source of CBOD is wet weather surface runoff. Sampling and testing conducted for the pollutant model resulted in an average stormwater runoff concentration of 17 mg/l, however, the concentration varied during the course of the wet weather events from a “first flush” concentration of 75 mg/l down to a value of 9 mg/l later in the event. Sampling for the pollutant model found that this first flush

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lasts about an hour and depends on the time of travel of the stormwater runoff to the sampling point.

The CBOD sample will be collected and placed on ice. The maximum holding time until testing is 48 hours. The CBOD concentration will be measured using method EPA-NERL: 405.1. There is not a minimum detectable limit; however, 86 analysts at 56 laboratories have tested concentrations of 2 mg/l whose results had a standard deviation of ± 0.7 mg/l. CBOD will be detected to some extent in both the over and under sewer samples. Lakewood will use a statistical analysis of the over sewer and under sewer samples and the stormwater samples to determine if the CBOD increase, if any, is sufficient to determine if there is sewage in the over sewer.

4. Enterococcus - Enterococcus faecalis is another bacterium found in the lower intestines. It is somewhat more specific to humans than E. coli, and thus may be a better indicator of sewage. Similar to E. coli, Enterococcus faecalis is also found in the gastrointestinal tract and bacteria are discharged as a component of the feces.

Enterococcus concentration is used as a beach safety indicator in saltwater; however, it is not found in the National Stormwater Database. Metcalf and Eddy (Fourth Edition) gives an average wastewater concentration of 105 cfu/100ml. Because Enterococcus faecalis is not solely specific to humans, its presence alone cannot confirm the presence of human sewage in stormwater. At very high concentrations, (such as those typically cited as CSO EMCs) presumption of the presence of sewage may be appropriate.

The enterococcus sample will be collected and placed on ice. The maximum holding time until testing is 6 hours. The enterococcus concentration will be measured using Enterolith Rapid Enterococci Test (IDEXX) which follows the ASTM Method (#D6503-99) test procedure. Results will be available in 24 hours. The results are reported as most probable number with a minimum detectable limit of 1 cfu/100ml. At this detection limit, enterococci will be detected to some extent in both the over and under sewer samples. Lakewood will use a statistical analysis of the over sewer and under sewer and stormwater samples to determine if the enterococci increase, if any, is sufficient to determine if there is sewage in the over sewer.

5. Ammonia/Potassium – Ammonia and potassium can be used in conjunction with fluoride to distinguish between wash waters and sanitary sewage contamination. Fluoride is present in both sanitary and wash waters, since it is added to the treated water distributed by the city. However, wash waters (i.e. runoff derived from car and house washing or yard watering) will contain only fluoride while sanitary contamination will contain fluoride, ammonia, and potassium.

The ammonia/potassium sample will be collected and placed on ice. The maximum holding time until testing is 28 days. The ammonia concentration will be measured using 4500-NH3 G.

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Automated Phenate Method. The automated spectrophotometer has a minimum detectable limit of 0.02 mg/l and a maximum of 2.0 mg/l. Potassium concentration will be measured by digesting the sample with method 200.2 and analyzing by Inductively Coupled Plasma (ICP) using EPA Method 200.7. For potassium, the EPA method has a minimum detection limit of 0.7 mg/l. Ammonium and potassium will be detected to some extent in both the over and under sewer samples. Lakewood will use a statistical analysis of the over sewer and under sewer and stormwater samples to determine if the change in ammonia and potassium concentrations in conjunction with fluoride and the other test parameters, if any, is sufficient to determine if there is sewage in the over sewer. The relative changes in concentrations of these two parameters will also be examined and explained.

6. Microbial Source Tracking (MST) – MST would be used when the use of the first five parameters provide conflicting or inconclusive results. MST is used to differentiate host sources of fecal pollutants (e.g., humans, cows, pigs, raccoons, deer, geese, chickens, etc.). Past MST studies relied on finding source specific bacteroides genes predominate to each animal source and matching it to the bacteroides genes in the water samples to determine the fractions of each animal source.

Lakewood testing will find a microbial strain predominate in humans and use MST techniques to determine presence and concentrations of this strain before and after construction of improvement projects. When testing for the source of fecal contamination using MST, a minimum of two markers (HF183 & general bacteroides) must be tested to prepare a Human Fecal Score. HF183 is a well vetted marker, is found throughout the human population and typically has a high concentration in sanitary sewage. It is not, however, 100% human-specific. The second marker will therefore be selected with human-specificity as a high priority.

The MST sample will be collected and placed on ice. The maximum holding time until filtration is 8 hours. The analyses will be carried out in accordance with the following EPA draft methods:

- a. Method 1696: Characterization of Human Fecal Pollution in Water by HF183/BacR287 TaqMan® Quantitative Polymerase Chain Reaction (qPCR) Assay
- b. Method 1697: Characterization of Human Fecal Pollution in Water by HumM2 TaqMan® Quantitative Polymerase Chain Reaction (qPCR) Assay®

B. Baseline Data

Dry day WWTP sampling - Collection staff will collect WWTP influent samples on five separate dry-weather days and times. Two hours prior to sampling WWTP influent (approximate collection system travel time), collection staff will contact the City to take a 250 ml sample of tap water at a designated facility to be analyzed for fluoride concentration.

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The WWTP influent flow rate will be recorded at the time collection staff take the samples. The samples will be delivered to the Laboratory to be analyzed for the following parameters in accordance with methods approved by EPA:

1. Fluoride
2. E. coli
3. CBOD
4. Enterococcus
5. Ammonia/Potassium
6. MST

Wet day WWTP sampling - WWTP wet day influent sampling will establish baseline data for comparison to preconstruction testing. The same parameters will be measured on seven (7) wet days. Similar to Dry day sampling, a sample of tap water at a City designated facility will be taken approximately one to two hours in advance of WWTP sampling. A variety of wet days will be chosen to accumulate data from different rainfall intensities and durations. An added constraint is two (2) of the events should have at least 0.25 inches of rainfall before the influent samples are taken. Rainfall data will be collected at 5-minute intervals at the Lakewood rain gauges.

Control site combined sewer sampling – Collection staff will obtain additional baseline data from the CSO-059 weir using an autosampler. This collection point will provide data on concentrations of the six parameters in CSO combined with stormwater during events when CSO-059 is active.

Control site storm sewer sampling – Collection staff will obtain additional baseline data from manhole 057TL10 located in Lakewood Park. This collection point will provide data on concentrations of the six parameters in a stormwater sewer during the wet day events.

C. Project Specific Data

The pilot study will use a manhole separation project on a street currently having an over/under pipe configuration with single manholes. The under pipe conveys dry weather sewage. The single manhole contains an invert plate in the bottom to keep separated stormwater in the over pipe from the sewage in the under pipe. The manhole separation project will construct a new manhole for the over pipe and eliminate the invert plate. The under pipe sewer main will likely be lined as well with a CIPP process as well as the laterals within the Right of Way. The pilot study will test the six pollutants to gather and summarize data.

Prior to manhole separation, wet weather flow monitoring and sampling will be conducted in the over pipe at the downstream end of the project area. Before initiating the sampling

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program, Lakewood will perform the following actions:

1. Clean and televise the sewers. A pan and tilt camera will look up each lateral connection to record its condition near the mainline sewer.
2. Inspect the manhole structures and record their condition (and invert plates, if any).
3. Install flow meters in the over and under pipes to record depth and velocity every 5 minutes. The over pipe flow meter will be equipped with a cell phone modem to notify the collection staff when a wet weather event is sufficient to produce flow.
4. Install a temporary rain gauge near the centroid of the project drainage area. Program the rain gauge to record rainfall every 5 minutes.

Pre-construction sampling will collect grab samples from the over pipe for a minimum of seven wet weather events. To eliminate the need for a confined space entry, the samples will be collected using a bottle gripping sampling pole. For non-bacterial sampling, the laboratory will provide any preservatives that will be needed for the sample. The initial schedule shall be to collect a sample if and when the storm sewer is flowing on a Monday through Thursday morning (8-11am) to allow delivery to the Laboratory. This schedule may change after nine months if less than seven samples have been collected. When a wet weather event occurs, the following actions will occur:

1. The over pipe flow meter will send an alert to the collection staff when flow commences.
2. The collection staff will call the City to take a tap water sample for current fluoride concentration.
3. An hour after flow begins, collection staff will stop at the manhole, collect a grab sample and place it on ice, then stop at a City facility to collect the tap water sample.
4. Collection staff will deliver the samples to the Laboratory for processing and analysis (see Exhibit 1).

After construction, a 1-year evaluation period will commence. Lakewood will collect a minimum of seven wet weather water samples. Post-construction flow monitoring and testing will be documented and summarized.

D. Project Timeline

The project specific sampling schedule is anticipated to last approximately three (3) years. Year one will include pre-construction monitoring and sampling which is underway. Year two will include construction. Year three will include post-construction monitoring and sampling. The overall timeline may be affected by weather and the sufficiency of the sampling effort. Overall these factors could extend the timeline by approximately 1 year.

Upon completion of the evaluation period monitoring and testing, a project summary report will be prepared within twelve (12) months of the completion of testing, no later than

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December 31, 2032 unless extended by mutual agreement of all the parties. The report will document the flow and testing data, and summarize any useful information such as expected concentration ranges in sewage and in stormwater for each parameter, method used, minimum detection levels (MDLs), any relevant information gleaned from the sewer system rehabilitation, and likely implications for sensitivity of each parameter. The report shall conclude this sampling pollutant pilot study.

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Exhibit 1 – Sampling Protocol:
Sample Collection and Preparation for
Fluoride, E. coli, CBOD, Enterococcus, Ammonia/Potassium, and MST
Testing

A. Sample Collection:

Sample volumes necessary for testing each parameter shall be determined by the approved testing laboratory. Sampling and testing shall be performed in accordance with 40 CFR Part 136. The testing laboratory shall provide any necessary preservatives to be added by the sampling team, if determined necessary by the laboratory to meet testing standards. Aliquots from the samples taken shall be used by the Laboratory for fluoride concentration, culturing and enumeration of fecal indicator microorganisms (E. coli and Enterococcus faecalis), CBOD and ammonia/potassium analyses.

1. Sterilized and sealed bottles will be supplied by the testing laboratory as necessary for each respective sample to be collected. If this tape seal is broken prior to use in the field, the bottle is considered NOT to be sterile and must not be used for sample collection. Sample identification labels must also be placed on sterile bottles prior to leaving the laboratory.
2. Water samples are collected at approximately one foot below the surface or mid-depth when flow is shallow (Figure 1) or directly from the outfall if possible. For in-pipe grab sampling, hold the bottle near the base and plunge, neck downward, below the water surface (~12 inches if possible). When using a bottle gripping pole sampler, keep the bottle turned down, if possible, but do not submerge it to the invert. Turn bottle until neck points slightly upward and mouth is directed toward the current. If there is no current, create a current artificially by pushing bottle forward horizontally in a direction away from the hand (be careful to minimize sediment suspension during sampling).



Figure 1: Illustration of in-pipe grab sample collection technique by pole sampling.

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3. Rinse the bottle by pouring out the initial water collected. Be sure to pour water out downstream from where water is being obtained to avoid fouling of subsequent collections. One time per site and per event, a chlorine test strip will be used to test for any chlorine residual in the sample. If chlorine residual is detected, appropriate preservatives will be added to dechlorinate.
4. Collect water a second time in bottle and pour out a sufficient amount of water to leave an approximate 1-inch air space in the bottle after capping. Preserve if appropriate. Sample team shall check for preservative after sample has been collected to confirm adequate presence.
5. Cap bottle tightly and place samples on ice at a temperature of $<10^{\circ}\text{C}$ during transit to the Laboratory. Do not freeze the samples. Use insulated containers to maintain proper storage temperature. Ensure that sample bottles are tightly closed and are not completely immersed in ice water during transit. Label the sample bottle with the location, date, and time of sample collection.

B. Transportation to Laboratory for Sample Testing:

Following collection, raw samples shall be transported to the Northeast Ohio Sewer District's Laboratory in a cooler on wet ice ($<10^{\circ}\text{C}$). The time between the collection of these samples and their analysis or preservation at the lab is not to exceed 6 hours. Those collecting the samples will be expected to deliver them to the lab as promptly as possible, ensuring the integrity of the samples by operating well within this time constraint. Samples collected will be labeled directly on the sampling bottle with all necessary identifying information including sample site, sample number, and time of sample collection.

C. Necessary materials utilized in sample analysis:

The materials necessary to complete the sampling procedures for each parameter are determined by the official testing methods implemented by Northeast Ohio Sewer District's Lab protocols. The third party lab that will be conducting the testing methods is understood to have all necessary materials and trained personnel to complete the analysis. A list of necessary materials and procedures will be included at the end of this document once it is received from the Northeast Ohio Sewer District's lab.

D. Sample Analysis Procedures:

The procedures used for the sample analysis of the five parameters will be *EPA 300.0*, *EPA 350.1*, *EPA 200.7*, the method associated with the *Colilert Quanti-Tray SM 9223B*, and the method associated for the *Enterolert IDEXX*. A list of necessary materials and procedures will be included at the end of this document once it is received from the Northeast Ohio Sewer District's lab.

References

https://www.who.int/water_sanitation_health/dwq/chemicals/fluoride.pdf

<https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/SOURCEWATER/DOMESTICWELLSAFETY/Documents/Contaminant%20Factsheets/Fluoride.pdf>

CT Consultants, Inc. *SWMM Pollutant Model Technical Memorandum*, (June, 2016).

eCFR :: 40 CFR Part 136 -- Guidelines Establishing Test Procedures for the Analysis of Pollutants

<https://www.ecfr.gov/current/title-40/chapter-1/subchapter-D/part-136>

https://www.bing.com/search?q=Enterococcus%20concentration%20in%20sewage&qs=n&form=QBRE&=Search%20%7B0%7D%20for%20%7B1%7D&=Search%20work%20for%20%7B0%7D&msbsrank=3_3_0&sp=-

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[1&ghc=1&pq=enterococcus%20concentration%20in%20sewage&sc=3-36&sk=&cvid=23CBA080AEDB4035B93ED40D6AC5FE9A ge - Bing](#)

<https://www.idexx.com/en/water/resources/mpn-generator/>

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<https://www.idexx.com/en/water/water-products-services/enterolert/>

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[OES%20analysis%20of%20metal%20in%20water%20and%20soils,and%20Wastes%20by%20Inductively%20Coupled%20Plasma-Atomic%20Emission%20Spectrometry.%22](https://www.thermofisher.com/us/en/home/industrial/environmental/environmental-learning-center/environmental-resource-library/us-epa-methods/analyzing-trace-elements-epa-method-200-7.html#:~:text=ICP-OES%20analysis%20of%20metal%20in%20water%20and%20soils,and%20Wastes%20by%20Inductively%20Coupled%20Plasma-Atomic%20Emission%20Spectrometry.%22)

<https://www.epa.gov/sites/default/files/2015-06/documents/epa-200.7.pdf>

[https://www.bing.com/search?q=HF183%2FBacR287+TaqMan%C2%AE+Quantitative+Polymerase+Chain+Reaction+\(qPCR\)+Assay&cvid=6bf0bdf11a4c443a8aec250b3fa37643&aqs=edge..69i57j69i58.1447172j0j1&pglt=299&FORM=ANNTA1&PC=DCTS](https://www.bing.com/search?q=HF183%2FBacR287+TaqMan%C2%AE+Quantitative+Polymerase+Chain+Reaction+(qPCR)+Assay&cvid=6bf0bdf11a4c443a8aec250b3fa37643&aqs=edge..69i57j69i58.1447172j0j1&pglt=299&FORM=ANNTA1&PC=DCTS)

https://www.epa.gov/sites/default/files/2019-03/documents/method_1696_draft_2019.pdf

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Appendix C

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Bundle 1 Monitoring Plan Requirements and Model Validation/Recalibration Requirements

I. Bundle 1 Monitoring Plan Requirements

One purpose of Lakewood's Bundle 1 Monitoring Plan is to evaluate the impact of the completed Bundle 1 Projects listed below. The data collected through implementation of the Monitoring Plan will then be used to validate or recalibrate Lakewood's Sewer System Hydraulic Model ("Model") to help Lakewood perform an IWWIP Update.

By July 1, 2030, Lakewood shall submit to EPA and OEPA, for review and approval in accordance with Paragraph 21 of the Consent Decree, a detailed Monitoring Plan designed to evaluate the effect of the completed Bundle 1 Projects on Lakewood's Sewer System. Lakewood shall implement the Bundle 1 Monitoring Plan in accordance with the provisions and schedules set forth therein and Paragraph 22 of the Consent Decree. This Monitoring Plan shall be consistent with the requirements of this Appendix C and those listed in EPA's CSO Post-Construction Compliance Monitoring Guidance (May 2012) or any updates thereto and shall include: (a) rainfall monitoring; and (b) flow monitoring to support model validation and/or recalibration.

The Bundle 1 Monitoring Plan will include rainfall monitoring, and pre-construction monitoring and sampling, and post-construction monitoring of the two subject project areas as listed below.

- (1) Project Area 1: CSO-052
Pre-construction Flow Monitoring: CSO-052 overflow sewer (12 months)
Post-construction Flow Monitoring: CSO-052 storage facility overflow sewer (12 months)
- (2) Project Area 2: CSO-059
Pre-construction Flow Monitoring: CSO-059 overflow sewer (12 months)
Post-construction Flow Monitoring: CSO-059 storage facility overflow sewer (12 months, which may begin when Lakewood has achieved Substantial Completion of Construction and begun regular beneficial use of the storage facility. Lakewood will not dispute the validity of the Post-construction flow monitoring data once the storage facility has reached Substantial Completion of Construction.)

II. Model Validation/Recalibration Requirements

Lakewood's Sewer System Hydraulic Model ("Model") is a tool developed to predict overflows, plan IWWIP sewer improvements, and evaluate compliance with CD

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performance measures. Lakewood's Model was originally calibrated in 2014. Since original calibration, the Model has been improved and refined to more accurately simulate overflows based on long-term monitoring data, and to include IWWIP projects which have been completed since the original calibration.

In order to ensure that Lakewood's Model is an appropriate tool for developing a comprehensive solution to address permitted and unpermitted overflows in the remainder of its Sewer System, and for post-construction monitoring, Lakewood shall validate, and if necessary, recalibrate its Model prior to the simulation of post-construction performance of its system using the Typical Year rainfall record as defined in the Consent Decree.

Under Lakewood's Model Validation/Recalibration Requirements, Lakewood shall collect rainfall, flow, and overflow activation monitoring for at least a 12-month validation monitoring period. Lakewood may request an extension of up to 12-months of the Monitoring Period due to atypical weather conditions during the initial period. The Monitoring Plan shall also include the following specific requirements:

1. Use monitoring from the multiple sites that Lakewood currently monitors pursuant to its NPDES permit and its CSO Notification requirements. The Plan shall identify all monitoring locations, including any newly identified overflows of combined sewage, and shall identify the type of monitor(s), for example level sensor, A/V Flow Meter, etc., to be installed at each location.
2. Be consistent with the requirements listed in EPA's CSO Post-Construction Compliance Monitoring Guidance (May 2012) where applicable.
3. Be developed in accordance with current industry practice, including the development and implementation of industry practice meter maintenance, and data review and quality assurance procedures.
4. Include: (a) rainfall monitoring at the sites previously used for model calibration; (b) monitoring of permitted and unpermitted overflow points; and (c) monitoring at other key locations throughout Lakewood's Sewer System for model calibration to support model validation and/or recalibration required by this Appendix in locations and monitoring consistent with current industry practice.
5. To the extent that Lakewood proposes to use previously-collected data that continues to be representative of current system responses to wet weather, Lakewood shall provide information regarding the specific location at which the data was collected, the equipment used to collect the data, data quality review information for that data, and detailed support for Lakewood's contention that the data continues to be representative. Any proposal to use

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data more than 5 years old is discouraged and will require significant justification.

In accordance with the approved monitoring plan, Lakewood shall have collected adequate monitoring data for the purposes of adequately validating or recalibrating Lakewood's Model. The data collected shall be summarized and incorporated into Lakewood's Model Validation/Recalibration Report.

Lakewood has been conducting flow monitoring of approximately 60 sites since 2015, in accordance with their Ohio EPA (OEPA) NPDES Permit. Lakewood reports overflows to OEPA based upon this monitoring, and the network of sensors enables Lakewood to comply with current CSO Public Notification Protocol. The flow monitoring will continue based upon Lakewood's continued NPDES requirements.

By August 1, 2033 and subject to any monitoring period extension, Lakewood shall submit to EPA and OEPA, for review and approval, a Model Validation/Recalibration Report to confirm the predictive ability of the model.

The Model Validation/Recalibration Report shall include:

1. An overview and description of the system.
2. A summary of hydraulic/hydrologic/pollutant parameterization.
3. A summary of the Bundle 1 Monitoring Plan flow monitoring and precipitation data.
4. An explanation of dry weather loadings and where feasible, validation of dry weather flows.
5. An explanation of wet weather loadings and validation of wet weather flows at active monitoring sites.
6. Presentation of the following:
 - i. One or more tables summarizing each calibration point's performance relative to the calibration criteria (i.e., peak flow, total volume, Nash-Sutcliffe Efficiency, etc.);
 - ii. "45 Degree" Scatterplots of each calibration point's performance relative to each of the calibration criteria; and
 - iii. Comparative hydrographs ("model vs meter") for each calibration point
7. A summary of Typical Year simulation results including number of activations and total volume discharged for each outfall.

Lakewood's Model Validation/Recalibration Report shall be developed in accordance with current industry practice, including the development and implementation of industry practice meter maintenance, and data review and quality assurance procedures. The Model Validation Report shall also include the following specific requirements:

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A. Validation/Calibration Standards

1. In general, Lakewood shall adhere to the current version of the Chartered Institute of Water and Environmental Management's (CIWEM) "Code of Practice for the Hydraulic Modeling of Urban Drainage Systems." In the case of any inconsistency between that document and this Appendix, Lakewood shall identify those inconsistencies in its Monitoring Plan and propose a resolution for EPA and OEPA approval.

B. Rainfall Monitoring.

1. Lakewood shall use at a minimum of six appropriately distributed automatic recording rain gauges with 0.01-inch sensitivity.

C. Flow and Hydraulic Grade Line Monitoring

1. Lakewood shall monitor: (i) the time, duration, flow rate, and volume of activations at permitted and unpermitted overflow points in Lakewood's Sewer System; (ii) the time, duration, flow rate, and volume of the locations in Lakewood's Sewer System used for model calibration, as listed in the attached Table C-1; and (iii) the time, duration, flow rate, and volume of an appropriate selection of key monitoring points located on the interceptors and significant trunk sewers. This list and any additional necessary model validation meter locations determined shall be submitted in the draft Bundle I Monitoring Plan in accordance with Paragraph 20.
2. Any temporary data useful for validation and calibration purposes will be included and explained in the monitoring plan.
3. The flow meters used for this monitoring shall be Area/Velocity meters consistent with current industry practice and shall be capable of a 5-minute logging interval.
4. If a monitoring location has an appropriate weir structure or is not a feasible A/V install site, Lakewood may use a level sensor and data logger capable of a 5-minute logging interval to characterize flow using an appropriate weir equation.

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D. Dry Weather Flow Calibration/Validation Criteria

1. Dry weather flow calibration was performed in support of the 2014 Hydraulic Technical Memorandum, when the model was developed. No substantial changes to dry weather flow have occurred as evidenced by continued WWTP influent data. Dry weather loadings were balanced based upon 2018 flow data at the WWTP. This analysis shall be summarized as a part of the validation report.

The following criteria (items 2-3) are not applicable to monitoring sites which do not convey dry weather flow:

2. Dry weather flow verification should be carried out for at least two dry weather periods and the predicted flows/depths compared to the observed flows/depths. The two flow hydrographs should closely follow each other both in shape and in magnitude.
3. In addition to the shape, as a general guide, the flow hydrographs should meet the following criteria:
 - i. The timing of the peaks and troughs should be within 1 hour.
 - ii. The peak flow rate should be in the range $\pm 10\%$.
 - iii. The volume of flow should be in the range $\pm 10\%$. Care should be taken to exclude periods of missing or inaccurate data.

E. Wet Weather Flow Calibration/Validation Criteria

1. All rainfall events with rainfall and flow data which are reviewed and determined to be of sufficient quality shall be used to support Model calibration. A summary table or graphic shall be provided that identifies all data that was excluded and/or qualified, and that specifies the nature of each qualification and the basis of each exclusion.
2. Smaller rainfall events shall be used for development of hydrologic parameters, such as depression storage.
3. Model and monitoring data shall be based on 5-minute time-step increments or 5-minute averages.
4. For the events from the flow survey, the predicted flows/depths should be compared to the observed flows/depths. The two flow hydrographs should closely follow each other both in shape and in magnitude, until the flow has substantially returned to dry weather flow rates.

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5. In addition to the shape, as a general guide, the observed and modelled hydrographs should meet the following criteria in at least (66%) of the events:

Parameter	General	Critical Locations
Shape	Good match (NSEC if used >0.5)	Good match (NSEC if used >0.5)
Time of peaks and troughs	±0.5 hour	±0.5 hour
Peak depth (un-surcharged)	±0.1m or ±10% whichever is greater	±0.1m
Peak depth (surcharged)	+0.5m to - 0.1m	±0.1m
Peak flow	+ 25% to -15%	±10%
Flow volume	+20% to -10%	±10%

6. Predicted flooding locations shall be substantiated by some evidence of observed flooding or a clear explanation for the absence of observed flooding.
7. The number, time/duration and volume of CSO and SSO Discharges simulated for the Monitoring Period shall reasonably match those actually recorded during the Monitoring Period.

If necessary, Lakewood will recalibrate the Model using all appropriate rainfall events unless such an event has other characteristics that make its use inappropriate, until the above Dry and Wet Weather Flow Calibration/Validation Criteria are met. Once the criteria are met, Lakewood shall submit the Model Validation Report to EPA and OEPA, for review and approval, describing in detail the successful validation and, if necessary, recalibration.

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Table C1 - Active Monitoring Sites			
Site:	Model Object ID	Location	Interior (within system) or Outfall (Discharge at or to river or lake)
CSO-002	CSO-002	Lakewood WWTP influent chamber	Outfall
CSO-059 (LEWS 1035)	059S001_059C1020	12900 Lake Ave.	Outfall
LEWS 1035-A	059T014_059T014A	Thoreau at Clifton	Interior
LEWS 1040-A	059BS852_059BS852A	Nicholson (North End)	Interior
LEWS 1040-B*	059AC1310_059T1310	Detroit @ Clarence	Interior
LEWS 1040-C	059AT897_059AT897A	Detroit @ Grace	Interior
LEWS 1040-D	059AS050_059AT025	Detroit east of Elbur	Interior
LEWS 1040-E	059AS047_059AT024	Detroit & Elbur	Interior
LEWS 1040-F	059AC046A_059AC046B	Detroit @ Wyandotte	Interior
LEWS 1040-G	059S078A_059AT1375	Madison @ Lewis	Interior
LEWS 1040-H	059C0076A_059C0076AA	Elbur @ Madison	Interior
LEWS 1045-A	059BS012A_059BS012	Wilbert north end	Outfall
LEWS 1055-A	059BC006A_059BC006	Edgewater between Homewood & Wilbert	Interior
LEWS 1055-C	059AS045_059AT022	Detroit @ Parkwood	Interior
LEWS 1055-D	059AC036_059AC036A	Detroit @ Robinwood	Interior
LEWS 1055-E	059AC1036_059AC1036A	Cedarwood & Blossom Park	Interior
LEWS 1070-A	002S766_002T767	Homewood (north end)	Outfall
LEWS 1070-B	057C023_057C023A	Clifton @ Whippoorwill	Interior
CSO-058 (LEWS 1110)	058C001A_058C001B	Edgewater Dr. between Roy/Kirtland	Outfall
LEWS 1130-C	057C012A_057C012	Clifton & Belle (SE corner)	Interior
CSO-057 (LEWS 1135)	057T001_057C343	14710 Lake Ave	Outfall
CSO-056B (LEWS 1150)	056C490_056C490B	Edgewater Dr. between Leedale/Rosalie	Outfall
LEWS 1150-C	056C289_056T050	Detroit @ Elmwood	Interior
LEWS 1150-D	056C295_056T049	Detroit @ Mars	Interior

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Table C1 - Active Monitoring Sites			
Site:	Model Object ID	Location	Interior (within system) or Outfall (Discharge at or to river or lake)
LEWS 1150-E	056T058_056T313	Victoria Ave. north of Hilliard	Interior
CSO-056A (LEWS 1155)	056T915_056T915B	Edgewater Dr. between Leedale/Rosalie	Outfall
LEWS 1180-A	002S188_002T188	Clifton @ Lakeland	Interior
LEWS 1190-A	002C244_LEWS1190-PSEUDO	Edgewater @ Summit	Outfall
LEWS 1215-A	002C240A_002C240	Erie Cliff north end	Outfall
LEWS 1220-A	002C238A_002C238	Maple Cliff north end	Outfall
CSO-055 (LEWS 1225)	055C003_055C003A	Edgewater between Kenneth/Maple Cliff	Outfall
LEWS 1295-B	002C197_002S197A	Webb @ Lake SW Corner	Interior
LEWS 1295-C	002C178_002T177	Clifton @ Edwards	Interior
RRES 1145-F	002S4414_002T4414	1429 West Clifton	Interior
RRES 1145-I	002C026A_002T026	Detroit @ Clifton Place	Interior
RRES 1145-J	002C029A_002T029	Detroit @ Rockway	Interior
RRES 1145-K	002T4392_002T4360A	1421 Spring Garden	Interior
RRES 1145-L	002C032A_002T032	Detroit @ Larchmont	Interior
RRES 1145-M	002C039A_002T039	Detroit @ Wagar	Interior
RRES 1145-N	002S252E_002T252	West Clifton south of RR	Interior
RRES 1145-O	002S253_002T253	West Clifton north of RR	Interior
RRES 1145-P	002S1405_002T1404	1285 West Clifton	Interior
RRES 1145-U	002S4068_002T1410	1186 West Clifton	Interior
RRES 1160-A	052SMeter006_052T091	Hilliard @ Olive	Interior
CSO-052 (RRES 1160)	052T007_052T006	Madison East of Riverside	Outfall
RRES 1165B	052S005_052T004	Riverside north of Madison	Outfall
RRES 1180	052T041_052RRES1180	Riverside @ Indianola	Outfall
CSO-053 (RRWS 1200)	053C002_053C001	Lakewood WWTP near Dog Park	Outfall (CSO eliminated)

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Requirements for Lakewood's Updated IWWIP

Under the terms of the Consent Decree, Lakewood will update its Integrated Wet Weather Improvement Plan ("IWWIP") once the Bundle 1 Monitoring Period is complete and Lakewood has submitted its Bundle 1 Monitoring Report. The purpose of the updated IWWIP is to evaluate a range of alternatives and ultimately recommend a set of alternatives designed to address permitted and unpermitted overflows in Lakewood's Sewer System. Lakewood's updated IWWIP shall include, but is not limited to, the following requirements:

I. Public Engagement and Participation Plan

Lakewood shall develop and implement a Public Engagement and Participation Plan as part of the process of updating the IWWIP.

II. Alternatives Analysis

A. In identifying, assessing, and selecting CSO and SSO Control Measure alternatives for its updated IWWIP, Lakewood shall give the highest priority to eliminating SSOs and controlling CSO Discharges to Sensitive Areas as that term is described on page 1-21 of the EPA Combined Sewer Overflows Guidance for Long-Term Control Plan (EPA 832-B-95-002) ("LTCP Guidance"). Where elimination or relocation of a CSO Outfall to a Sensitive Area is not physically possible and economically achievable, or would provide less environmental benefit than additional treatment, Lakewood's updated IWWIP shall provide for treatment as necessary to meet water quality standards for full protection of all designated and existing uses.

B. Lakewood's analysis of the alternatives shall include, at a minimum:

1. An assessment of the impacts that each alternative, or mix of alternatives, under consideration has on the in-stream water quality of the receiving waters (including an

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evaluation of the reduction in pollutants of concern that are discharged to the receiving waters).

2. Identification and selection of additional remedial measures that are necessary to ensure that the CSO Discharges comply with the requirements of Lakewood's current NPDES Permit including, but not limited to, any specific or general water quality or technology-based effluent limitations applicable to the CSO Discharges, the CWA, and the CSO Control Policy.

3. A reasonable range of alternative sizes (*e.g.*, sized to achieve 0, 2, and 4 CSO Discharges in a Typical Year), and reasonable mixes of alternative technologies, including (where appropriate) alternatives that address multiple CSOs.

4. The frequency and volume of CSO Discharges from each CSO Outfall during the Typical Year for each alternative or mix of alternatives considered.

5. A reasonable range of alternative sizes (*e.g.* sized to eliminate SSOs in a 2, 5 and 10 year storm), and a reasonable mix of alternative technologies, including (where appropriate) alternatives that address multiple SSOs.

6. A requirement to not increase the risk of basement backups as a result of implementing any particular or type of solution.

III. Cost/Performance Analysis

A. Lakewood shall perform a cost/performance analysis as part of the alternatives analysis. The analysis shall include, at a minimum:

1. "Knee" of the curve cost/performance analyses (as that term is described on pages 3-55 through 3-58 of the LTCP Guidance) on the range of options under consideration, which would allow for the comparison of the costs per unit of measure (in mass) of pollutants removed from the discharge and volume of CSOs eliminated or controlled, for each of the

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alternatives that is being considered.

2. Evaluation of the cost-effectiveness of each alternative (including, where appropriate, a range of sizes of a single alternative) in reducing the volume and number of untreated CSO Discharges to a range of numbers of overflows per each CSO Outfall per Typical Year (such as 0, 2, and 4 overflows per CSO Outfall per year).

3. Evaluation of the cost-effectiveness of each alternative (including, where appropriate, a range of sizes of a single alternative) in eliminating SSOs in a 2, 5 and 10 year storm.

4. The total project costs for each alternative or mix of alternatives, and a breakdown of the capital costs, annual operation and maintenance (“O&M”) costs, and life-cycle costs that were used to calculate the total project costs for each alternative or mix of alternatives. The terms “capital costs,” “annual O & M costs,” and “life cycle costs” are described on pages 3-49 through 3-51 of the EPA Combined Sewer Overflows Guidance for Long-Term Control Plan (EPA 832-B-95-002). The determination of project costs shall be carried out using a consistent and identified year dollar (i.e., “costs are provided in January 2020 dollars”).

IV. Financial Capability Analysis

Lakewood shall conduct a Financial Capability Analysis (“FCA”) to evaluate Lakewood’s ability to fund and schedule the implementation of the selected SSO alternative(s) and the selected CSO Control Measure alternative or combination of alternatives. Lakewood shall conduct the FCA consistent with EPA’s CSO Guidance for Financial Capability Assessment and Schedule Development (March 1997), EPA’s Financial Capability Assessment Framework for Municipal Clean Water Act Requirements (Nov. 2014), and any subsequent updates thereto.

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V. Alternative(s) Selection, Criteria Identification, and Implementation

As part of the updated IWWIP, Lakewood shall submit to EPA and OEPA for review and approval a recommended plan as part of the IWWIP. The recommended plan shall include the results of the following IWWIP development steps:

A. Selection of SSO and CSO Control Measure Alternative(s). Lakewood shall select the appropriate SSO and CSO Control Measure alternative, or combination of alternatives, based on information such as costs, effectiveness, and water quality information that Lakewood has gathered and developed pursuant to this Appendix. The selected alternative or combination of alternatives will eliminate SSOs and eliminate, reduce, and/or treat CSO Discharges in compliance with the CSO Policy, current Lakewood's NPDES Permit. Selection of green infrastructure ("GI") measures as a CSO Control Measure alternative, or part of a combination of alternatives, shall include evaluation and documentation of long-term institutional mechanisms required to ensure that Lakewood will be able to preserve and maintain constructed GI measures, retain access and sufficient control over the lands used for the constructed GI measures, and ensure that future site or land use changes do not result in the loss of the runoff reduction benefits of constructed GI measures. The engineering design of any GI measures selected as CSO Control Measure alternatives, or as part of a combination of alternatives, shall include detailed modeling results, engineering calculations, summaries of underlying assumptions and the basis for those assumptions, and detailed analysis and discussion of the long-term effectiveness and expected performance of any or all implemented GI measures.

B. Development of Implementation Schedule. Lakewood shall develop a schedule for the design, construction, and implementation of all selected CSO and SSO Control Measures such that the design, construction, and implementation of selected Control Measures occurs as

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expeditiously as possible, and in no event later than 2047. If it is not possible for Lakewood to design, construct, and implement all Control Measures simultaneously, the schedule shall include a phased schedule based on the relative importance of each Control Measure. Highest priority shall be given to eliminating SSOs and to eliminating, reducing, or treating CSO Discharges to Sensitive Areas and to those CSO Control Measures that will provide the greatest reduction in discharge of pollutants of concern. Lakewood shall specify in the implementation schedule critical milestones for the implementation of each Control Measure, including dates for: (1) commencement of design; (2) commencement of construction; (3) Substantial Completion of Construction; and (4) Achievement of Full Operation of Control Measure.