

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

UNITED STATES OF AMERICA,

Plaintiff,

and

COMMONWEALTH OF
MASSACHUSETTS,

Plaintiff-Intervenor,

v.

CITY OF HOLYOKE,
MASSACHUSETTS,

Defendant.

NOTICE OF LODGING PROPOSED FINAL CONSENT DECREE

The proposed Final Consent Decree, attached as Exhibit 1, is hereby lodged with the Court, pursuant to 28 C.F.R. § 50.7, for public comment. Notice of the lodging of this Final Consent Decree, and the opportunity to comment thereon, will be published in the Federal Register. The United States will then receive public comments on the Final Consent Decree for the requisite 30-day public comment period, as provided in the proposed Final Consent Decree. During the pendency of the public comment period, no action is required of this Court. After the public comment period has expired, the United States will respond to any comments timely received and, should it appear to the United States that the settlement is in the public interest, file a motion asking the Court to sign and enter the Final Consent Decree.

In light of the foregoing, the United States requests that the Court take no action with respect to the lodged Final Consent Decree until the parties move for the entry of the Consent Decree or otherwise advise the Court.

Respectfully submitted,

RACHAEL S. ROLLINS
United States Attorney
District of Massachusetts

Dated: March 22, 2023

/s/Brian M. LaMacchia
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CERTIFICATE OF SERVICE

Counsel to the United States in this action hereby certifies that with the electronic filing of this motion all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system. Any other counsel of record will be served in accordance with the Federal Rules of Civil Procedure.

Dated: March 22, 2023

/s/Brian M. LaMacchia

BRIAN M. LaMACCHIA (BBO No. 664369)

EXHIBIT 1

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

UNITED STATES OF AMERICA,

Plaintiff,

COMMONWEALTH OF MASSACHUSETTS,

Plaintiff-Intervenor,

V.

CITY OF HOLYOKE, MASSACHUSETTS,

Defendant.

CASE NO. 19-cv-10332-MGM

FINAL CONSENT DECREE

United States and Massachusetts v. City of Holyoke Consent Decree**TABLE OF CONTENTS**

I.	STATEMENT OF CLAIM.....	3
II.	JURISDICTION AND VENUE	3
III.	APPLICABILITY	4
IV.	DEFINITIONS.....	5
V.	OBJECTIVES	7
VI.	REMEDIAL MEASURES.....	9
VII.	REPORTS ON COMPLIANCE	20
VIII.	REVIEW OF DELIVERABLES	21
IX.	STIPULATED PENALTIES	22
X.	CIVIL PENALTY.....	29
XI.	FORCE MAJEURE	29
XII.	DISPUTE RESOLUTION	31
XIII.	RIGHT OF ENTRY/INFORMATION COLLECTION AND RETENTION.....	34
XIV.	FORM OF NOTICE	36
XV.	EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS.....	38
XVI.	COSTS.....	40
XVII.	EFFECTIVE DATE.....	40
XVIII.	RETENTION OF JURISDICTION.....	40
XIX.	MODIFICATION	40
XX.	FUNDING.....	41
XXI.	SEVERABILITY	41
XXII.	TERMINATION.....	41
XXIII.	SIGNATORIES / SERVICE.....	42
XXIV.	PUBLIC PARTICIPATION	43
XXV.	INTEGRATION	43
XXVI.	SIGNATORIES	44
XXVII.	APPENDICES	44
XXVIII.	FINAL JUDGMENT	44

United States and Massachusetts v. City of Holyoke Consent Decree

WHEREAS, on May 22, 2019, the Court entered a Partial Consent Decree (hereinafter referred to as “2019 Partial Decree”) settling claims of the Plaintiffs the United States of America (“United States”), on behalf of the United States Environmental Protection Agency (“EPA”), and Commonwealth of Massachusetts (“Commonwealth”), on behalf of the Massachusetts Department of Environmental Protection (“MassDEP”), against the Defendant the City of Holyoke, Massachusetts (the “City”) (together, the United States, the Commonwealth, and the City are the “Parties”), for alleged violations of the City’s National Pollutant Discharge Elimination System (“NPDES”) Permit No. 0101630 and Section 301(a) of the federal Clean Water Act (“CWA”), 33 U.S.C. § 1311(a), and for the alleged violations of the City’s Massachusetts Permit No. 0101630, and the Massachusetts Clean Waters Act (“Massachusetts Act”), M.G.L. c. 21, §§ 26, *et seq.*, for the discharge of pollutants into waters of the United States from the City’s publicly owned treatment works (the “POTW”), as defined at 40 C.F.R. § 403.3, which includes a wastewater treatment plant located at One Berkshire Street, Holyoke, Massachusetts (the “WWTP”) and collection system (the “Collection System”);

WHEREAS the United States and Commonwealth had alleged violations consisting of, among other things: (i) discharging pollutants during wet and dry periods from combined sewer overflows (“CSOs”) in the City’s Collection System that caused or contributed to water quality violations in the Connecticut River; and (ii) discharging pollutants from other unpermitted components of the City’s Collection System to the Connecticut River;

WHEREAS, the framework for compliance with CWA requirements for CSOs is set forth in Section 402(q)(1) of the CWA, 33 U.S.C. § 1342(q)(1) (“CSO Control Policy”);

WHEREAS, the CSO Control Policy sets forth the following objectives: (1) to ensure that, if CSO discharges occur, they are only as a result of wet weather; (2) to bring all wet

United States and Massachusetts v. City of Holyoke Consent Decree

weather CSO discharges into compliance with the technology-based and water-quality based requirements of the CWA; and (3) to minimize water quality, aquatic biota, and human health impacts from CSO flows;

WHEREAS, the CSO Control Policy sets forth nine minimum controls, including the prohibition of dry weather overflows from CSOs, as a minimum best available technology economically achievable and best conventional technology established on a best professional judgment basis for CSO control;

WHEREAS, under the 2019 Partial Decree, the City agreed to prepare and submit an approvable updated CSO long term control plan (“Updated CSO LTCP”);

WHEREAS, under the 2019 Partial Decree, upon approval of the Updated CSO LTCP, the Parties were to negotiate the remedial work to be completed on the City’s Collection System;

WHEREAS, under Paragraph 12 of the 2019 Partial Decree, any approved final remedy and schedule, and any necessary related measures, of the Updated CSO LTCP would be “incorporated into, and shall be an enforceable part of, a modification of [the 2019 Partial Decree] ... or shall be incorporated into a new consent decree.”

WHEREAS, on April 4, 2016, EPA reissued a NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (“Small MS4 General Permit”) under CWA section 402(p), 33 U.S.C. § 1342(p), for which Holyoke applied and under which it received coverage;

WHEREAS, the United States’ Complaint against the City alleges that the City violated and continues to violate Section 301 of the CWA by discharging pollutants into waters of the United States from its municipal separate storm sewer system (“MS4”) drains without authorization under the Small MS4 General Permit, any other NPDES permit, or any other provision of the Act;

United States and Massachusetts v. City of Holyoke Consent Decree

WHEREAS, under Paragraph 48 of the 2019 Partial Decree, the Plaintiffs did not resolve and retained, without prejudice, the right to seek further relief to address the claims in the Complaints of the Plaintiffs, or any future claims, including the right to obtain civil penalties, which are addressed in this Final Consent Decree (hereafter “Consent Decree” or “Decree”);

WHEREAS, the Parties recognize, without admission of facts or law by the City except as may be expressly stated herein, 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 additional litigation among the Parties, and that this Consent Decree is fair, reasonable, and in the public interest;

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

I. STATEMENT OF CLAIM

1. The separate Complaints of the United States and the Commonwealth state claims upon which relief can be granted against the City pursuant to Section 309 of the CWA, 33 U.S.C. § 1319, and, with respect to the Commonwealth’s Complaint, pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 42, 43, and 46.

II. JURISDICTION AND VENUE

2. This Court has jurisdiction over the subject matter of this action pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and 28 U.S.C. §§ 1331, 1345, 1355, and 1367(a). This Court has personal jurisdiction over the Parties to this Consent Decree. Venue properly lies in this district pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and 28 U.S.C. §§ 1391(b) and (c). The City waives all objections it might have raised to such jurisdiction or venue.

United States and Massachusetts v. City of Holyoke Consent Decree

III. APPLICABILITY

3. The provisions of this Consent Decree shall apply to and be binding upon the United States, the Commonwealth, and upon the City and any successors, and assigns, or other entities or persons otherwise bound by law.

4. No transfer of any ownership interest in or any interest in the operation of the WWTP or Collection System, whether in compliance with this Paragraph or otherwise, shall relieve the City of its obligation to ensure that the terms of this Consent Decree are implemented unless (1) the transferee agrees to undertake the obligations required by this Decree and to be substituted for the City as a Party under this Decree and thus be bound by its terms, and (2) the United States and Commonwealth consent in writing to relieve the City of its obligations. At least 30 Days prior to such transfer, the City 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 above-referenced proposed written agreement, to EPA, the United States Attorney for the District of Massachusetts, the United States Department of Justice, and MassDEP, in accordance with Section XIV, below (Form of Notice). Any noncompliance with this Paragraph constitutes a violation of this Consent Decree. The United States' decision to refuse to approve the substitution of the transferee for the City shall not be subject to judicial review.

5. The City shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provisions of this Consent Decree. The City shall also provide a copy of this Consent Decree to all contractors and consultants (including engineering firms) retained to perform any obligation required by this Consent Decree on behalf of the City and condition any such contract upon performance of the

United States and Massachusetts v. City of Holyoke Consent Decree

work in conformity with the terms of this Consent Decree. The City shall require that such contractors and consultants provide a copy of this Consent Decree to their subcontractors to the extent the subcontractors are performing work subject to this Consent Decree. Such contractors, consultants and subcontractors shall be deemed agents of the City for the purposes of this Consent Decree. The City shall condition any such contract upon performance of the work in conformity with the terms of this Consent Decree.

6. In an action to enforce this Consent Decree, the City shall not assert 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.

IV. DEFINITIONS

7. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in the CWA or in regulations promulgated under the CWA shall have the meaning ascribed to them in the CWA or in the regulations promulgated thereunder. Whenever the terms listed below are used in this Consent Decree, the following definitions shall apply:

- a. “Effective Date” shall have the definition provided in Section XVII (Effective Date).
- b. “Catchment” shall mean the geographical area served by and drained to a distinct portion of the City’s MS4.
- c. “Clean Water Act” or “CWA” shall mean the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act), as amended, 33 U.S.C. §§ 1251, *et seq.* The “Massachusetts Clean Waters Act” or the “Massachusetts Act” shall mean the Massachusetts Clean Waters Act, as amended, M.G.L. c. 21, §§ 26-53.
- d. “Collection System” shall mean the wastewater (domestic, commercial, and

United States and Massachusetts v. City of Holyoke Consent Decree

industrial) collection, storage and transmission system (including, but not limited to, all pipes, siphons, devices, pump stations, force mains, gravity sewer lines, manholes, and appurtenances thereto) that is owned or operated by the City of Holyoke, at any time from the Effective Date of this Consent Decree until its termination under Section XXI (Termination), and that is designed to collect and convey municipal sewage to the WWTP.

e. “Combined Sewer Overflow” or “CSO” shall mean a discharge from the Combined Sewer System at a CSO outfall designated in the City’s Permit.

f. “Combined Sewer System” or “CSS” shall mean the pipelines, pumping stations, treatment facilities, and appurtenances in the Collection System that are designed to convey wastewater and stormwater through a single pipe system to the WWTP and/or CSO outfalls.

g. “Commonwealth” shall mean the Commonwealth of Massachusetts.

h. “Complaints” shall mean the complaints filed by the United States and the Commonwealth respectively in this action.

i. “Consent Decree” or “Decree” shall mean this Final Consent Decree and all appendices attached hereto. In the event of conflict between this Final Consent Decree and any appendix, this Final Consent Decree shall control.

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

k. “Day(s)” or “day(s)” shall mean a calendar day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal

United States and Massachusetts v. City of Holyoke Consent Decree

or Commonwealth holiday, the period shall run until the close of business of the next business day.

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

m. “MassDEP” shall mean the Massachusetts Department of Environmental Protection and any successor departments or agencies of the Commonwealth.

n. “Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral, a lower-case letter, or a lower-case Roman numeral.

o. “Parties” shall mean the United States, the Commonwealth, and the City of Holyoke, Massachusetts.

p. “Permit” or “NPDES Permit” shall mean NPDES Permit No. 0101630, issued on September 1, 2009, and reissued on October 25, 2016, and effective January 1, 2017, or any subsequently modified or reissued permit.

q. “Section” shall mean a portion of this Consent Decree identified by an upper case Roman numeral.

r. “United States” and “U.S.” shall mean the United States of America.

s. “Wastewater Treatment Plant” or “WWTP” shall mean the wastewater treatment plant owned by the City of Holyoke, and all components of such wastewater treatment plant.

V. OBJECTIVES

8. It is the express purpose of the Parties in entering into this Consent Decree to require the City to take measures necessary to fulfill the objectives of the CWA, and to achieve

United States and Massachusetts v. City of Holyoke Consent Decree

and maintain compliance with the CWA, the Massachusetts Act, the Permit, and any applicable Federal and State regulations.

9. All work pursuant to this Consent Decree shall be performed using sound, generally accepted engineering practices to ensure that construction, management, operation, and maintenance of the Collection System complies with the CWA, including consideration of practices to improve the resilience of the Collection System. Engineering designs and analyses required to be performed pursuant to this Consent Decree shall be conducted using sound engineering practices, and, to the extent they are applicable, shall be consistent with: (a) EPA's "Handbook: Sewer System Infrastructure Analysis and Rehabilitation," EPA/625/6-91/030, October 1991, or as amended; (b) EPA's "Handbook for Sewer System Evaluation and Rehabilitation," EPA/430/9-75/021, December 1975; (c) "Existing Sewer Evaluation and Rehabilitation," WEF MOP FD-6, 2009, or as amended; (d) "Guide to Short Term Flow Surveys of Sewer Systems," WRC Engineering (Undated); (e) the National Association of Sewer Service Companies' "Manual of Practice"; (f) MassDEP's "Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Survey," revised May 2017, or as amended; (g) New England Interstate Water Pollution Control Commission's TR-16 "Guides for the Design of Wastewater Treatment Works," as revised in 2016, or currently effective edition; (h) EPA's "Computer Tools for Sanitary Sewer System Capacity Analysis and Planning," EPA/600/R-07/111, October 2007, or as amended; (i) EPA's Creating Resilient Water Utilities (CRWU) Initiative, available on the EPA-maintained website at <https://www.epa.gov/crwu>; (j) EPA's Climate Resilience Evaluation and Awareness Tool (CREAT), version 3.0, referenced at EPA 815-B-16-004, May 2016, available on the EPA-maintained website at <https://www.epa.gov/crwu/build-resilience-your-utility>; and (k) the Commonwealth's Executive

United States and Massachusetts v. City of Holyoke Consent Decree

Order No. 569 (Establishing an Integrated Climate Change Strategy for the Commonwealth), dated September 16, 2016. Should there be a conflict between two or more of these sources, EPA's judgment, after consultation with MassDEP, as to which source to follow shall control.

VI. REMEDIAL MEASURES

Combined Sewer Overflow

10. The City shall implement the Updated CSO LTCP submitted on December 30, 2019 (Appendix A), as modified by the City's April 4, 2022, email to EPA and the MassDEP (Appendix B), and any subsequent modifications or revisions thereto approved pursuant to this Consent Decree (including the design and schedule to remove Day Brook from the collection system), in accordance with the schedule therein, except that the following specific elements of the Updated CSO LTCP shall be implemented according to the following schedule:

- a. On or before December 31, 2022, the City shall complete construction of the Springdale Pond drain-relocation project (part of CSO Area 8);
- b. On or before July 1, 2024, the City shall submit for approval by MassDEP design plans for the River Terrace (CSO Area 21A) remedial projects;
- c. On or before July 1, 2026, the City shall submit for approval by MassDEP design plans for the River Terrace (CSO Area 21B) remedial projects;
- d. On or before December 31, 2027, the City shall complete the River Terrace (CSO Area 21A) projects, in accordance with design plans approved by MassDEP;
- e. On or before December 31, 2029, the City shall complete the River Terrace (CSO Area 21B) projects, in accordance with design plans approved by MassDEP;
- f. On or before July 1, 2034, the City shall submit for approval by MassDEP design plans for the Springdale Park (CSO Area 8) remedial projects; and

United States and Massachusetts v. City of Holyoke Consent Decree

g. On or before December 31, 2037, the City shall complete the Springdale Park (CSO Area 8) project, in accordance with the design plans approved by MassDEP.

Illicit Discharge Detection and Elimination

11. The City shall inspect and sample its MS4 outfalls, and MS4 discharges to other municipal MS4s or non-City owned outfalls, in accordance with the requirements below. The City shall utilize the following IDDE screening thresholds as guidelines for its analysis of the data generated for each field sample to include:

- | | |
|--------------|---|
| Bacteria: | Class A or B waters – <i>E. coli</i> : equal to or greater than 410 colony forming units /100 milliliters (“cfu/100 ml”) and/or <i>Enterococcus</i> : equal to or greater than 130 cfu/100 ml |
| Surfactants: | equal to or greater than 0.25 milligrams per liter (“mg/l”) via field kits or 0.1 mg/l via laboratory analysis |
| Ammonia: | equal to or greater than 0.5 mg/l via field kits or 0.1 mg/l via laboratory analysis |
| Chlorine: | equal to or greater than 0.02 mg/l |

The following indicators, i.e., subparagraphs a. through e., shall constitute the detection of what shall hereby be referred to as a “Potential Illicit Discharge” and shall be used to prioritize the investigation of the catchment areas associated with the outfalls and interconnections:

- a. outfalls identified by EPA in sampling results previously supplied to the City on May 7-8, 2019 and July 7, 2019 based on field test kit screening;
- b. olfactory or visual evidence of sewage;
- c. an exceedance of a bacterial threshold concurrent with meeting or exceeding of both the surfactant and ammonia thresholds;
- d. an exceedance of both the surfactant and ammonia thresholds concurrent

United States and Massachusetts v. City of Holyoke Consent Decree

with any detectable level of chlorine; and

e. an exceedance of a bacterial threshold concurrent with any detectable level of ammonia below its threshold.

An exceedance of a bacterial threshold specified in this paragraph 11 without meeting an indicator described in subparagraphs a., b., c., d., or e., above, may also indicate an illicit discharge that shall, at a minimum, be addressed by “Best Management Practices” as specified in the Consent Decree.

12. By May 31, 2023, the City shall submit to EPA for review an IDDE Plan which includes screening and monitoring of all known MS4 outfalls and interconnections in both dry weather (as defined in the Consent Decree) and wet weather (as defined in the Consent Decree) conditions, investigation of all catchment areas, and identification and removal of illicit discharges, consistent with the schedule set forth in this paragraph. The IDDE Plan shall be consistent with EPA Region 1’s “EPA New England Bacterial Source Tracking Protocol,” January 2012 Draft. The City shall further update the IDDE Plan, as needed, to ensure consistency with any requirements in future NPDES Permits issued to the City. The City shall utilize the screening thresholds listed in the Consent Decree to prioritize all MS4 drainage Catchment areas for IDDE investigations. The IDDE Plan shall include:

- a. The current MS4 Catchment area map showing boundaries of each Catchment area and associated outfall or interconnection;
- b. Identification of all combined manholes within these Catchment areas;
- c. A schedule to inspect the identified combined manholes;
- d. A schedule to repair or eliminate the identified combined manholes; and
- e. A prioritization of all Catchment areas based on information and data

United States and Massachusetts v. City of Holyoke Consent Decree

available, including EPA monitoring results (previously provided to the City), City monitoring results, applicable Total Maximum Daily Loads for impaired waterbodies on the applicable EPA-approved Massachusetts CWA § 303(d) integrated List of Waters, and a schedule for completion of Catchment area investigations.

13. The City shall use the following criteria when conducting dry-weather inspections: under dry-weather conditions (less than 0.1 inches of rain in the preceding 24 hours (but 48 hours when possible) and no significant snowmelt), the City shall inspect all MS4 outfalls and interconnections to other MS4s and sample those with flow. Each outfall and interconnection discharge sample shall be concurrently analyzed for all of the following parameters: *E. coli* bacteria, surfactants, ammonia, total residual chlorine, temperature, conductivity, and salinity using laboratory analysis or instrumentation defined in Tables 1 and 2 of EPA Region 1's "EPA New England Bacterial Source Tracking Protocol," January 2012 Draft. The City shall maintain detailed and accurate records of the date and time that sampling was conducted and the weather conditions both during, and in the 48 hours prior to, each sampling event.

14. The City shall use these criteria when conducting wet-weather inspections: At least once every three years during wet weather conditions, the City shall inspect and sample all MS4 outfalls and interconnections to other MS4s. For the purposes of sampling outfalls or interconnections, "wet-weather conditions" should consist of at least 0.25-inches of rain over the 24-hour period prior to sampling. To facilitate sample planning and execution, however, precipitation events sufficient to produce any flow in outfalls or interconnections to be sampled will also be acceptable. Each outfall or interconnection discharge samples shall be concurrently analyzed for all of the following parameters: *E. coli* bacteria, surfactants, ammonia, total

United States and Massachusetts v. City of Holyoke Consent Decree

residual chlorine, temperature, conductivity, and salinity, using laboratory analysis or instrumentation defined in Tables 1 and 2 of EPA Region 1's "EPA New England Bacterial Source Tracking Protocol," January 2012 Draft. The City shall maintain detailed and accurate records of the date and time that sampling was conducted and the weather conditions both during, and in the 24 hours prior to, each sampling event.

15. Illicit discharge removal and abatement: For purposes of the Consent Decree, the "date of verification" of an illicit discharge shall be the date on which the City has identified a point of entry of an Illicit Discharge from a specific location or address that contributes wastewater flow to the MS4. This program shall contain the following for removal of illicit discharges and confirmation of elimination:

a. Upon detection of a Potential Illicit Discharge, the City shall locate, identify and eliminate the illicit discharge as expeditiously as possible. Upon identification of the illicit source, the City shall notify all responsible parties for any such discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities. Where elimination of a direct-plumbed source(s) of an illicit discharge within 60 Days of its identification as the source is not possible, the City shall establish an expeditious schedule, not to exceed one year, for its elimination by the City. If elimination of other identified source(s) (including indirect sources(s)) of an illicit discharge within 60 Days of its identification as the source is not possible, the City shall establish an expeditious schedule, not to exceed three years, for its elimination. Discharges from the MS4 that are mixed with an illicit discharge are not authorized and remain unlawful until eliminated;

b. Within one year following the removal of a verified illicit discharge, the City shall conduct additional dry- and wet-weather monitoring to confirm that the illicit discharge has

United States and Massachusetts v. City of Holyoke Consent Decree

been eliminated. If confirmatory screening indicates evidence of a continued Potential Illicit Discharge, the Catchment shall be scheduled for additional investigation and illicit discharge removal. In the event EPA informs the City that illicit discharges have not been eliminated from a particular outfall, based upon City data or EPA data (including EPA's PPCP data), the Catchment shall be scheduled for additional investigation and illicit discharge removal; and

c. Combined Manholes: If it is found that a combined manhole(s) is contributing to contamination within the MS4 the City shall establish an expeditious schedule(s) for its(their) elimination, and report the dates of identification and schedule(s) for removal in the City's Compliance Report. For combined manhole(s) that are overflowing multiple times within one year or are contributing significant contamination to the MS4, the City shall eliminate such combined manhole(s) within one year of such discovery.

16. Upon approval by EPA, the IDDE Plan shall be incorporated into and become enforceable under this Consent Decree and the City shall implement the IDDE Plan, as approved by EPA, in accordance with the schedule set forth therein.

17. The City shall provide information relating to implementation of its IDDE Plan semi-annually in the compliance report required by the Consent Decree.

Best Management Practices (BMPs)

18. The City shall include BMPs as defined in the Consent Decree to eliminate sources of pollutants. If the City's IDDE investigation identifies a source of pollutants to the City's MS4 whose elimination requires implementation of BMPs, the City shall include recommendations for implementing Green Infrastructure ("GI")/Low Impact Development ("LID") BMPs to address the MS4 pollutant discharge. If GI/LID BMPs are not recommended for implementation, the City shall provide a reason why such GI/LID BMP implementation is

United States and Massachusetts v. City of Holyoke Consent Decree

not being recommended for each particular location and shall include such explanation in the compliance reports required under the consent decree.

Measures to Minimize Nitrogen in Stormwater

19. The City shall identify and implement BMPs designed to reduce Nitrogen discharges to waterbodies, or their tributaries. To address Nitrogen discharges the City shall comply with the following requirements:

a. The City shall update its September 2019 Stormwater Management Program (“SWMP”) by May 31, 2023 to incorporate the requirements of this section and document the date of SWMP update.

b. Additional or Enhanced BMPs:

i. The City shall distribute an annual message in the spring (April/May) timeframe that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers. The City shall distribute an annual message in the summer (June/July) timeframe encouraging the proper management of pet waste, including noting any existing ordinances where appropriate. The City shall distribute an annual message in the fall (August/September/October) timeframe encouraging the proper disposal of leaf litter. The City shall deliver an annual message on each of these topics, unless the City determines that one or more of these issues is not a significant contributor of Nitrogen to discharges from the MS4 and retains documentation of this finding in the SWMP;

ii. Stormwater Management in New Development and Redevelopment: the requirement for adoption/amendment of the permittee’s ordinance or other regulatory mechanism shall include a requirement that new development and redevelopment stormwater management BMPs be optimized for Nitrogen removal; and

United States and Massachusetts v. City of Holyoke Consent Decree

iii. Good House Keeping and Pollution Prevention for City Owned Operations: The City shall establish requirements for use of slow-release fertilizers on City owned property currently using fertilizer. The City shall establish procedures to properly manage grass cuttings and leaf litter on City property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces; increased street sweeping frequency of all municipal owned streets and parking lots (with the exception of rural uncurbed roads with no catch basins or high speed limited access highways) to a minimum of two times per year, once in the spring (following winter activities such as sanding) and at least once in the fall (Sept 1 – Dec 1; following leaf fall).

c. Nitrogen Source Identification Report

i. By December 31, 2023, the City shall complete a Nitrogen Source Identification Report. The report shall include the following elements: (1) Calculation of total urbanized area within the City’s jurisdiction that is within the Connecticut River Watershed, incorporating updated mapping of the MS4 and Catchment delineations, (2) All screening and monitoring results targeting the receiving water segment(s), (3) Impervious area and directly connected impervious area (DCIA) for the target Catchment, (4) Identification, delineation and prioritization of potential Catchments with high Nitrogen loading, and (5) Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.

ii. The Nitrogen source identification report shall be submitted to EPA in the January 31, 2024 Compliance Report.

d. Potential Structural BMPs

i. By December 31, 2023 the City shall evaluate all City-owned

United States and Massachusetts v. City of Holyoke Consent Decree

properties or those identified in the Nitrogen Source Identification Report that could potentially be modified or retrofitted with BMPs designed to reduce the frequency, volume, and pollutant loads of stormwater discharges to and from its MS4. The evaluation shall include: (a) the next planned infrastructure, resurfacing or redevelopment activity planned for the property (if applicable) or planned retrofit date; (b) the estimated cost of redevelopment or retrofit BMPs; and (3) the engineering and regulatory feasibility of redevelopment or retrofit BMPs.

ii. The City shall provide a listing of planned structural BMPs and a plan and schedule for implementation in the January 31, 2024 Compliance Report. The City shall plan and install a minimum of one structural BMP as a demonstration project within the drainage area of the water quality limited water or its tributaries by December 31, 2024. The demonstration project shall be installed targeting a Catchment with high Nitrogen load potential. The City shall install the remainder of the structural BMPs in accordance with the plan and schedule provided in the January 31, 2024 Compliance Report.

iii. Any structural BMPs installed by the City shall be tracked and the City shall estimate the Nitrogen removal by the BMP. The City shall document the BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated Nitrogen removed in mass per year by the BMP in each annual Compliance Report required by the consent decree.

Geographic Information System Maps

20. By December 31, 2022, the City shall update and submit to EPA and MassDEP in electronic format the current version of the City's stormwater collection system and wastewater collection system geographical information system (GIS) map to include the following information:

United States and Massachusetts v. City of Holyoke Consent Decree

- a. Outfalls and receiving waters;
- b. Open channel conveyances;
- c. Interconnections with other MS4s and other storm sewer systems;
- d. Municipally-owned stormwater treatment structures;
- e. Waterbodies identified by name and indication of all use impairments; and
- f. Initial Catchment delineations identifying the area that drains to each individual outfall or interconnection.

21. The City shall submit to EPA for review updated maps reflecting newly developed and/or discovered information, corrections, and modifications in conjunction with the compliance reporting required by this Consent Decree. Such mapping shall be designed to provide a comprehensive depiction of key infrastructure and factors influencing the proper operation and maintenance of the City's Collection System and MS4, and each update shall include progress toward achieving that design. Mapping shall include: water resource and topographic features; sanitary and stormwater sewer infrastructure; prior investigation and study findings; cleaning and repair activities; and capital projects. The scale and detail of the maps shall be appropriate to facilitate a clear understanding of the City's Collection System and MS4 by the City, EPA, and MassDEP. In addition, the mapping shall serve as a planning tool for the implementation of future remedial measures, shall delineate the extent of completed and planned investigations and corrections, and shall include other related capital projects. To ensure legible mapping, information shall be grouped appropriately and represented thematically (*e.g.*, by color coding) with legends or schedules where possible. Mapping shall be updated as necessary to reflect newly developed and discovered information, corrections, or modifications. The following information and features shall, at a minimum, be included in the mapping:

- a. Base Map
 - i. Municipal boundaries;
 - ii. Street names;
 - iii. Private property delineations;

United States and Massachusetts v. City of Holyoke Consent Decree

- b. Water Resources and Topographic Features
 - i. Water bodies and watercourses identified by name and all use impairments identified in Massachusetts' most recent Integrated List of Waters prepared to fulfill reporting requirements of Section 303(d) of the Clean Water Act;
 - ii. Topography;
- c. Infrastructure
 - i. MS4;
 - ii. Outfalls;
 - iii. Pipes (including size and material);
 - iv. Open channel conveyances (*e.g.*, swales, ditches);
 - v. Catch basins;
 - vi. Manholes;
 - vii. Inter-municipal connections;
 - viii. Municipally-owned stormwater treatment structures (*e.g.*, detention and retention basins, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, and other proprietary systems);
 - ix. Delineation of Catchment areas for each outfall;
- d. Collection System:
 - i. Pipes (including size, material, and approximate age);
 - ii. Flow type (*e.g.*, pressure, vacuum, gravity);
 - iii. Manholes;
 - iv. Pump stations (public and private), and other key sewer
 - v. Appurtenances);
 - vi. Locations of interceptor sewers;
 - vii. Delineation of Sewershed areas for each connection to the
 - viii. interceptor sewer;
 - 1) Sewersheds or sewer alignments experiencing inadequate level of service (with indication of reason(s));
 - 2) Common/twin-invert manholes or structures (*i.e.*, structures serving or housing both separate storm and sanitary sewers);
 - 3) Collection System alignments served by known or suspected underdrain systems;
 - 4) Sewer alignments with common trench construction and major crossings representing high potential for communication during high groundwater conditions;
- e. Investigations, remediation, and capital projects completed for the City's MS4 and Collection System in accordance with this Consent Decree, including:
 - i. Alignments, dates, and thematic representation of work completed (with legend) of past investigations (*e.g.*, flow isolation, dye testing, closed-circuit television, etc.);
 - ii. Locations of suspected, confirmed, and eliminated illicit discharges (with dates and flow estimates) to the City's MS4;

United States and Massachusetts v. City of Holyoke Consent Decree

- iii. Alignments and dates of past and planned infrastructure remediation projects;
- iv. Planned Collection System and MS4 capital projects; and
- v. Proposed phasing of future capital projects.

VII. REPORTS ON COMPLIANCE

22. Until otherwise directed in writing by EPA, the City shall submit by January 31 and July 31 of each year for review by EPA and MassDEP a Compliance Report (“Compliance Report”) for the previous six-month period (January 1st through June 30th, and July 1st through December 31st) (“Reporting Period”) regarding its progress in implementing the Remedial Measures and other provisions of this Consent Decree. Each Compliance Report shall at a minimum:

- a. Describe activities undertaken during the Reporting Period directed at achieving compliance with this Consent Decree;
- b. Identify all plans, reports, and other deliverables required by this Consent Decree that have been completed and submitted during the Reporting Period;
- c. Describe the expected activities to be taken during the next Reporting Period in order to achieve compliance with this Consent Decree; and,
- d. Identify any anticipated or potential areas of noncompliance with this Consent Decree.

Technical Meetings. The technical staff at EPA, the MassDEP, and the City will arrange to meet in person or remotely following the City’s submission of the January 31 and July 31 reports to review the City’s compliance with the terms of the Consent Decree.

Website. The City shall also establish and maintain a public website to provide a means for interested parties to access and view deliverables and modifications to deliverables under the Consent Decree.

United States and Massachusetts v. City of Holyoke Consent Decree

The reporting requirements set forth in this Section do not relieve the City of its obligation to submit any other reports or information as required by Federal, Commonwealth or local law or regulation. EPA reserves the right to review and require modifications to the above reporting requirements.

VIII. REVIEW OF DELIVERABLES

23. After review of any plan, schedule, report, or other item that is required to be submitted for approval by EPA and/or MassDEP pursuant to this Consent Decree, EPA and/or MassDEP, as appropriate, shall in writing: (a) approve, in whole or in part, the submission; (b) approve, in whole or in part, the submission upon specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission.

24. If EPA and/or MassDEP, as appropriate, approves the submission pursuant to Paragraph 23, the City shall take all actions required by the plan, report, or other document, in accordance with the schedules and requirements of the plan, report, or other document, as approved. If EPA and/or MassDEP, as appropriate, provides conditional approval or approval only in part pursuant to the previous Paragraph, the City shall, upon written direction from EPA and/or MassDEP, as appropriate, take all actions required by the approved plan, report, or other item that EPA and/or MassDEP, as appropriate, determines are technically severable from any disapproved portions, subject to the City's right to dispute only the specified conditions or the disapproved portions, under Section XI, below (Dispute Resolution).

25. If EPA and/or MassDEP, as appropriate, disapproves the submission, in whole or in part, pursuant to Paragraph 23, above, the City shall, within 45 Days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the

United States and Massachusetts v. City of Holyoke Consent Decree

resubmission is approved in whole or in part, the City shall proceed in accordance with the preceding Paragraph.

26. If EPA and/or MassDEP, as appropriate, disapproves in whole or in part a resubmitted plan, report, or other item, or portion thereof, EPA and/or MassDEP, as appropriate, may again require the City to correct any deficiencies, in accordance with this Paragraph, or may itself correct any deficiencies subject to the City's right to invoke Dispute Resolution under Section XII and the right of EPA and/or MassDEP, as appropriate, stipulated penalties as provided Section IX. If the City elects to invoke Dispute Resolution as set forth in Section XII herein, the City shall do so by sending a Notice of Dispute in accordance with that Section within 15 Days (or such other time as the Parties agree to in writing) after receipt of the applicable decision.

IX. STIPULATED PENALTIES

27. The City shall pay stipulated penalties to the United States and the Commonwealth for violations or noncompliance with the requirements of this Consent Decree, as set forth below, unless excused under Section XI, below (Force Majeure). A violation or noncompliance includes failing to perform an obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules or by the date(s) established by or approved under this Decree: Reporting and Monitoring Requirements. For every Day that the City fails timely to submit a report required by Section VII (Reports on Compliance) herein, or fails to provide the certification required in Section XIV (Form of Notice) herein, the Defendant shall pay a stipulated penalty as follows:

United States and Massachusetts v. City of Holyoke Consent Decree

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 750	1st through 10th Day
\$ 1,500	11th through 20th Day
\$ 2,500	21st Day and beyond

28. Remedial Measures. For every Day that the City fails to timely meet the requirements of Section VI (Remedial Measures) of this Consent Decree, including but not limited to, submitting an approvable plan, schedule, report, or other item, other than a report required by Section VII (Reports on Compliance) herein, or fails to implement remedial requirements in a plan, schedule, report, or other item Approved by EPA and/or MassDEP, the Defendant shall pay a stipulated penalty as follows:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 1,500	1st through 10th Day
\$ 3,000	11th through 20th Day
\$ 5,000	21st Day and beyond

29. Transfer of Facility. If the City fails to: (a) provide a copy of this Consent Decree to any proposed transferee; (b) provide written notice to the United States or the Commonwealth at least 30 Days prior to any transfer of any portion of the facility; or (c) provide a copy of the proposed written agreement with the transferee as required by Paragraph 4, the City shall pay a stipulated penalty of \$10,000 per occurrence.

30. Obligations Prior to the Effective Date. Upon the Effective Date, the stipulated penalty provisions of this Decree shall be retroactively enforceable with regard to any and all violations that have occurred prior to the Effective Date, provided that stipulated penalties that may have accrued prior to the Effective Date may not be collected unless and until this Consent Decree is entered by the Court.

United States and Massachusetts v. City of Holyoke Consent Decree

31. Stipulated penalties shall continue to accrue under this Section during any Dispute Resolution under Section XI herein but need not be paid until the following:

a. If the dispute is resolved by agreement of the Parties or by a decision of EPA and/or MassDEP that is not appealed to the Court, the City shall pay accrued penalties determined to be owing, together with interest, to the United States and Commonwealth within 30 Days of the effective date of the agreement or the receipt of EPA's and/or MassDEP's, as appropriate, decision or order.

b. If the dispute is appealed to the Court and the United States and/or the Commonwealth prevails in whole or in part, the City 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 the City appeals the District Court's decision, the Defendant shall pay all accrued penalties determined to be owing, together with interest, within 15 Days of receiving the final appellate court decision.

32. If the City fails to pay stipulated penalties according to the terms of this Consent Decree, the City shall be liable for interest on such penalties, as provided for in 28 U.S.C. § 1961 ("Interest"), accruing as of the date payment became due.

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

34. Accrual of Penalties. Stipulated penalties accrue from the date performance is due, or the day a noncompliance occurs, whichever is applicable, until the date the requirement is completed or the final day of the correction of the noncompliance. Nothing in this Decree prevents the simultaneous accrual of separate penalties for separate violations of this Decree.

United States and Massachusetts v. City of Holyoke Consent Decree

Stipulated penalties accrue regardless of whether the City has been notified of its noncompliance, and regardless of whether the City has initiated Dispute Resolution under Section XI, provided, however, that no penalties will accrue as follows:

a. with respect to a submission that EPA and/or MassDEP, as appropriate, subsequently determines is deficient under Section VIII (Review of Deliverables), during the period, if any, beginning on the 31st day after EPA's and/or MassDEP's, as appropriate, receipt of such submission until the date that EPA notifies the City of any deficiency.

b. with respect to a matter that is the subject of Dispute Resolution under Section XII, during the period, if any, beginning on the 21st day after the later of the date that EPA's and/or MassDEP's, as appropriate, Statement of Position is received or the date that the City's reply thereto (if any) is received until the date of the formal decision under Paragraphs 42 and 44.

c. with respect to a matter that is the subject of judicial review by the Court under Paragraphs 45, during the period, if any, beginning on the 31st day after the Court's receipt of the final submission under Paragraph 46, below, regarding the dispute until the date that the Court issues a final decision regarding such dispute.

35. Demand and Payment of Stipulated Penalties. EPA or the Commonwealth or both may send the City a demand for stipulated penalties. Where both sovereigns elect to seek stipulated penalties for any violation of this Consent Decree, any such penalties determined to be owing shall be paid fifty percent (50%) to the United States and fifty percent (50%) to the Commonwealth. Where one sovereign elects to seek such stipulated penalties, and the other sovereign does not join in the demand within 15 Days of its receipt of written notice, timely joins in the demand as to only some of the violations in question, or timely joins in the demand but

United States and Massachusetts v. City of Holyoke Consent Decree

subsequently elects to waive stipulated penalties as to any or all of the violations in question, the entire amount of the stipulated penalties determined to be owing for each violation as to which only one sovereign has sought stipulated penalties shall be payable to the sovereign making the demand. Where one sovereign reduces the stipulated penalty otherwise payable for any violation, the difference shall be payable to the other sovereign. In no case shall the determination by one sovereign not to seek stipulated penalties preclude the other sovereign from seeking stipulated penalties, as otherwise provided for by, and consistent with, the terms of this Consent Decree.

36. The demand will include a description of the noncompliance and will specify the amount of the stipulated penalties owed. The City may initiate Dispute Resolution under Section XII within 30 days after receipt of the demand. The City shall pay the amount demanded or, if it initiates dispute resolution, the uncontested portion of the amount demanded, within 30 days after receipt of the demand. The City shall pay the contested portion of the penalties determined to be owed, if any, within 30 days after the resolution of the dispute. Each payment for (a) the uncontested penalty demand or uncontested portion, if late; and (b) the contested portion of the penalty demand determined to be owed, if any, must include an additional amount for Interest accrued from the date of receipt of the demand through the date of payment.

37. Notwithstanding any other provision of this Section, the United States or the Commonwealth, as appropriate, may, in its/their unreviewable discretion, waive any portion of stipulated penalties that have accrued under this Decree.

38. Following the United States' and/or the Commonwealth's determination that the City has failed to comply with a requirement of this Consent Decree, the United States and/or the Commonwealth may give the Defendant written notification of the same and describe the

United States and Massachusetts v. City of Holyoke Consent Decree

noncompliance. The United States and/or the Commonwealth may send the Defendant a written demand for the payment of the stipulated penalties. However, the stipulated penalties shall accrue as provided in the preceding Paragraph regardless of whether the United States and/or the Commonwealth has notified the Defendant of a violation of or noncompliance with the requirements of this Consent Decree, or demanded payment of stipulated penalties.

39. The Defendant shall pay stipulated penalties as specified in this Section by delivering the payments to the United States and the Commonwealth, in equal amounts, within 30 Days of the date of a demand for payment of stipulated penalties in accordance with the instructions set forth as follows:

a. One half of the stipulated penalties (unless a different division is required under Paragraph 26 above), as payment to the United States, shall be made, upon written demand, by FedWire Electronic Funds Transfer (“EFT”) to the U.S. Department of Justice in accordance with written instructions to be provided to the Defendant by the Financial Litigation Unit of the U.S. Attorney’s Office for the District of Massachusetts. The cost of such electronic transfer shall be the responsibility of the City. At the time of payment, the Defendant shall send a copy of the EFT authorization form and EFT transaction record, together with a transmittal letter, which shall state that the payment is for stipulated penalties owed pursuant to the Consent Decree in *United States and Commonwealth of Massachusetts v. City of Holyoke*, Massachusetts, and shall reference the civil action number and DOJ case number 90-5-1-1-11703, to the United States in accordance with Section XIV (Form of Notice) herein; by email to [REDACTED] and by mail to: EPA Cincinnati Finance Office, 26 Martin Luther King Drive, Cincinnati, Ohio 45268.

United States and Massachusetts v. City of Holyoke Consent Decree

b. The City shall also make one-half of any stipulated payment to the Commonwealth by Electronic Funds Transfer (“EFT”) to the Commonwealth in accordance with current EFT procedures, using the following account information:

Commonwealth of Massachusetts, Office of Attorney General
ABA#: 011075150
ACCOUNT#: 00088882022
SANTANDER BANK
75 STATE STREET
BOSTON, MA 02109
TIN: 046002284

and shall include the following in the payment information: “EPD, Commonwealth v. City of Holyoke.” Any payments received by the Commonwealth after 4:00 P.M. (Eastern Time) will be credited on the next business day. At the time of payment, Holyoke shall send notice, by electronic mail, that such payment has been made to the Commonwealth to I. Andrew Goldberg, Environmental Protection Division at [REDACTED] and shall include all of the payment information stated in this Paragraph in addition to the amount of the payment.

40. In the event the Defendant fails to pay stipulated penalties according to the terms of this Consent Decree, such penalty (or portion thereof) shall be subject to interest at the statutory judgment rate set forth at 28 U.S.C. § 1961, accruing as of the date payment became due.

41. Stipulated penalties are not the United States’ or Commonwealth’s exclusive remedy for violations of this Consent Decree. Subject to the provisions of Section XV (Effect of Settlement/Reservation of Rights), the United States and Commonwealth expressly reserve the right to seek any other relief it deems appropriate for the City’s violation of this Consent Decree or applicable law, including but not limited to an action against the City for statutory penalties, additional injunctive relief, mitigation or offset measures, and/or contempt. The amount of any

United States and Massachusetts v. City of Holyoke Consent Decree

statutory penalty assessed for a violation of this Consent Decree shall be reduced by the amount of any stipulated penalty assessed and paid pursuant to this Consent Decree.

X. CIVIL PENALTY

42. Within thirty (30) Days after the Effective Date, the City shall pay a civil penalty of \$50,000, together with interest accruing from the Effective Date at the rate specified in 28 U.S.C. § 1961, which shall be divided between the Plaintiffs as follows:

- a. \$ 25,000, plus applicable interest, to the United States; and
- b. \$ 25,000, plus applicable interest, to the Commonwealth.

The City shall pay the civil penalty in the manner specified in Paragraph 39, above.

XI. FORCE MAJEURE

43. “Force Majeure,” for purposes of this Consent Decree, is defined as any event arising from causes entirely beyond the control of the City or of any entity controlled by the City, including its engineers, consultants, contractors and subcontractors, that delays or prevents the timely performance of any obligation under this Consent Decree notwithstanding the City’s best efforts to fulfill the obligation. The requirement that the City exercise “best efforts” includes using best efforts to anticipate any potential Force Majeure event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. “Force Majeure” does not include the City’s financial inability to perform any obligation under this Consent Decree. Stipulated Penalties shall not be due for the number of Days of noncompliance caused by a Force Majeure event as defined in this Section, provided that the City complies with the terms of this Section.

44. If any event occurs which may delay or prevent the performance of any obligation under this Consent Decree, whether or not caused by a Force Majeure event, the City shall notify

United States and Massachusetts v. City of Holyoke Consent Decree

EPA and MassDEP within 72 hours after the City first knew or should have known that the event might cause a delay. Within five working Days thereafter, the City shall submit for approval by EPA and MassDEP, at the addresses specified in Section XIV (Form of Notice), a written explanation of the cause(s) of any actual or expected delay or noncompliance, the anticipated duration of any delay, the measure(s) taken and to be taken by the City to prevent or minimize the delay, a proposed schedule for the implementation of such measures, and a statement as to whether, in the opinion of the City, such event may cause or contribute to an endangerment to public health, welfare, or the environment. Notwithstanding the foregoing, the City shall notify EPA and MassDEP orally within 24 hours of becoming aware of any event that presents an imminent threat to the public health or welfare or the environment and provide written notice to EPA and MassDEP within 72 hours of discovery of such event. Such notification does not supplant any other notifications that may be required under applicable law. The City shall be deemed to know of any circumstances of which the City, any entity controlled by the City, or the City's contractors knew or should have known. Failure to provide timely and complete notice in accordance with this Paragraph shall constitute a waiver of any claim of Force Majeure with respect to the event in question.

45. If EPA and MassDEP agree that a delay or anticipated delay is attributable to Force Majeure, the time for performance of the obligations under this Consent Decree that are affected by the Force Majeure event shall be extended by EPA, after a reasonable opportunity for review and comment by MassDEP, for a period of time as may be necessary to allow performance of such obligations. EPA will notify the City in writing of the length of the extension, if any, for performance of the obligations affected by the Force Majeure event.

United States and Massachusetts v. City of Holyoke Consent Decree

46. If EPA, after a reasonable opportunity for review and comment by MassDEP, does not agree the delay or anticipated delay is attributable to Force Majeure or on the number of Days of noncompliance caused by such event, EPA will notify the City in writing of its decision. The City may then elect to initiate the dispute resolution process set forth in Section XII (Dispute Resolution). In any dispute resolution proceeding, the City 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 the City complied with the requirements of this Section. If the City carries this burden, the delay at issue shall be deemed not to be a violation by the City of the affected obligation(s) of this Consent Decree identified to EPA, MassDEP, and the Court.

47. Delay in performance of any obligation under this Consent Decree shall not automatically justify or excuse delay in complying with any subsequent obligation or requirement of this Consent Decree.

48. Failure of the City to obtain any Federal or Commonwealth grants or loans shall not be considered a Force Majeure event under this Consent Decree.

XII. DISPUTE RESOLUTION

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

United States and Massachusetts v. City of Holyoke Consent Decree

50. 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 the City sends DOJ, EPA, and the Commonwealth a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 20 Days from the date the dispute arises, unless that period is modified by written agreement of the Parties. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States and/or the Commonwealth, as appropriate, shall be considered binding unless, within 10 Days after the conclusion of the informal negotiation period, the City invokes formal dispute resolution.

51. Formal Dispute Resolution. The City shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by sending DOJ, EPA, and the Commonwealth 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 the City's position and any supporting documentation relied upon by the City.

52. The United States and/or the Commonwealth will send the City its Statement of Position within 45 Days of receipt of the City's Statement of Position. The United States' and/or the Commonwealth's, as appropriate, Statement(s) 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 Director of the Enforcement and Compliance Assurance Division, EPA Region 1, will issue a final decision resolving the matter in dispute. The decision of the Director of the Enforcement and Compliance Assurance Division, EPA Region 1, shall be binding on the City, subject only to the right to seek judicial

United States and Massachusetts v. City of Holyoke Consent Decree

review, in accordance with the following Paragraph. EPA shall maintain an administrative record of the dispute, which shall contain all statements of the Parties, including supporting documentation, submitted pursuant to this Section, and the decision of the Director of the Enforcement and Compliance Assurance Division, EPA Region 1. The United States' and/or the Commonwealth's Statement(s) of Position is binding on the City, unless the City files a motion for judicial review of the dispute in accordance with the following Paragraph.

53. Judicial Dispute Resolution. The City may seek judicial review of the dispute by filing with the Court and serving on the United States and/or the Commonwealth, as appropriate, a motion requesting judicial resolution of the dispute. The motion must be filed within 10 Days of receipt of the United States' and/or the Commonwealth's Statement(s) of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Defendant'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.

54. The United States and/or the Commonwealth, as appropriate, shall respond to the City's motion within the time period allowed by the Local Rules of this Court. The City may file a reply memorandum, to the extent permitted by the Local Rules.

55. Standard of Review: Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought under this Section regarding the adequacy or appropriateness of plans, procedures to implement plans, schedules or any other items requiring approval by EPA under this Consent Decree, regarding the adequacy of the performance of work undertaken pursuant to this Consent Decree, or that is accorded review on the administrative record under applicable principles of administrative law, the City shall

United States and Massachusetts v. City of Holyoke Consent Decree

have the burden of demonstrating, based on the administrative record, that the position of the United States and/or the Commonwealth, as appropriate, is arbitrary and capricious or otherwise not in accordance with law.

56. Standard of Review: Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under Paragraph 51 (Formal Dispute Resolution), the City shall bear the burden of demonstrating that its position complies with this Consent Decree and better furthers the objectives of the Consent Decree set forth in Section V (Objectives).

57. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of the City under this Consent Decree, unless and until final resolution of the dispute so provides.

XIII. RIGHT OF ENTRY/INFORMATION COLLECTION AND RETENTION

58. EPA and MassDEP and their contractors, consultants, and attorneys shall have authority to enter any property and/or facility owned and/or controlled by the City, at all reasonable times, upon proper identification, for the purposes of: (a) monitoring the progress of activity required by this Consent Decree; (b) verifying any data or information submitted to EPA and MassDEP under this Consent Decree; (c) assessing the City's compliance with this Consent Decree; (d) obtaining samples and, upon request, splits of any samples taken by the City or its representatives, contractors, or consultants; and (e) obtaining documentary evidence, including photographs and similar data. Upon request, EPA and MassDEP shall provide the City splits of any samples taken by EPA or MassDEP. This requirement is in addition to, and does not limit, the authority of EPA or MassDEP pursuant to the CWA, the Massachusetts Act, or any other provision of Federal or Commonwealth law or regulation.

United States and Massachusetts v. City of Holyoke Consent Decree

59. Until five years after the termination of this Consent Decree, the City shall retain non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) generated by the City, and all data collected and all reports generated by the City's contractors (including data and reports in electronic form), that relate in any manner to the City'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 Commonwealth, the City shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

60. At the conclusion of the information-retention period provided in the preceding Paragraph, the City shall notify the United States and the Commonwealth 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 Commonwealth, the City shall deliver any such documents, records, or other information to EPA and/or MassDEP. The City may assert that certain documents, records, or other information are privileged under the attorney-client privilege or any other privilege recognized by Federal law. If the City asserts such a privilege, it shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by the City. However, no documents, records, data, reports or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

United States and Massachusetts v. City of Holyoke Consent Decree

61. 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 Commonwealth pursuant to applicable Federal or Commonwealth laws, regulations, or permits, nor does it limit or affect any duty or obligation of the City to maintain documents, records, or other information imposed by applicable Federal or Commonwealth laws, regulations, or permits.

XIV. FORM OF NOTICE

62. All agreements, approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, waivers, and requests specified in this Decree must be in writing unless otherwise specified. Whenever a notice is required to be given or a report or other document is required to be sent by one Party to another under this Decree, it must be sent as specified below. All notices under this Section are effective upon receipt, unless otherwise specified. In the case of emailed notices, there is a rebuttable presumption that such notices are received on the same day that they are sent. Any Party may change the method, person, or address applicable to it by providing notice of such change to all Parties.

As to DOJ:

As to the U.S. Department of Justice

Chief, Environmental Enforcement Section
 Environment & Natural Resources Division
 United States Department of Justice
 P.O. Box 7611 - Ben Franklin Station
 Washington, DC 20044
 Re: DJ# 90-5-1-1-11703

As to EPA:

via email to:

Tonia Bandrowicz, Sr. Enf. Counsel


Douglas Koopman, Environmental Engineer


United States and Massachusetts v. City of Holyoke Consent Decree

As to Massachusetts
Attorney General's
Office:

via email to:
Assistant Attorney General I. Andrew Goldberg
Environmental Protection Division
[REDACTED]

As to MassDEP:

via email to:
Christine Y. LeBel, Chief Regional Counsel
[REDACTED]

Saadi Motamedi, Acting Deputy Regional Director,
Bureau of Water Resources
[REDACTED]

As to City of Holyoke:

Lisa A. Ball, City Solicitor
Holyoke City Hall Annex
Holyoke, MA 01040
[REDACTED]

63. The City shall make an electronic copy of all submissions required to be submitted by this Consent Decree, including Compliance Reports, available on a publicly accessible website.

64. All written notices, reports or any other submissions required of the City by this Consent Decree shall contain the following certification by a duly authorized representative of the City:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

XV. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

65. This Consent Decree resolves the civil claims of the United States and the Commonwealth for the violations alleged in the Complaints filed in this action, as well as violations of the City's Small MS4 General Permit that are specifically addressed in this Consent Decree, through the date of lodging.

66. The United States and the Commonwealth reserve all legal and equitable rights and 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 Commonwealth to obtain penalties or injunctive relief under the CWA or implementing regulations, the Massachusetts Act, or other Federal or Commonwealth laws, regulations or permit conditions except as expressly specified in Paragraph 65, above. The United States and the Commonwealth further reserve all legal and equitable remedies to address any imminent and substantial endangerment to the public health and welfare or the environment arising at, or posed by, the City's WWTP, whether related to the violations addressed in this Consent Decree or otherwise.

67. This Consent Decree is not a permit, or a modification of any existing permit, under any Federal, Commonwealth, or local laws or regulations. The City is responsible for achieving and maintaining complete compliance with all applicable Federal, Commonwealth, and local laws and regulations, and permits; and the City's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except expressly specified in Paragraph 65, above. The United States and the Commonwealth do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that the City's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CWA or with any other provisions of Federal, Commonwealth, or local laws,

United States and Massachusetts v. City of Holyoke Consent Decree

regulations or permits. This Consent Decree shall not be construed to constitute EPA and/or MassDEP approval of any equipment or technology installed by the City under the terms of this Consent Decree.

68. In any subsequent administrative or judicial proceeding initiated by the United States or the Commonwealth for injunctive relief, civil penalties, or other appropriate relief relating to the City's WWTP, or the City's violations of Federal, Commonwealth or local laws, and regulations and permits, including the violations alleged in the Complaints, the City 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 Commonwealth in the subsequent proceeding were or should have been brought in the instant case, nor with respect to the Complaints, any defense or claim based upon the expiration of the statute of limitations, except with respect to claims that have been specifically resolved pursuant to Paragraph 65, above.

69. This Consent Decree does not limit any rights or remedies available to the United States or the Commonwealth for any criminal violations.

70. This Consent Decree does not resolve any claims for contingent liability under Section 309(e) of the Clean Water Act, 33 U.S.C. § 1319(e). The United States specifically reserves any such claims against the Commonwealth.

71. This Consent Decree does not limit or affect the rights of the City or the United States 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 the City, except as otherwise provided by law.

United States and Massachusetts v. City of Holyoke Consent Decree

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

XVI. COSTS

73. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States and Commonwealth 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 Defendant.

XVII. EFFECTIVE DATE

74. 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 the City 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.

XVIII. RETENTION OF JURISDICTION

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

XIX. MODIFICATION

76. The terms of this Consent Decree, and any submitted and approved deliverables, may be modified only by a subsequent written agreement signed by all the Parties, except that,

United States and Massachusetts v. City of Holyoke Consent Decree

without otherwise altering the obligations of the Consent Decree, (a) the Parties may by written agreement modify the schedules specified in this Decree, and (b) EPA and/or MassDEP may approve submissions upon specified conditions or modify submissions. Where the modification constitutes a material change to this Decree, such as an extension of the final construction date, it shall be effective only upon approval by the Court.

77. Any disputes concerning modification of this Consent Decree shall be resolved pursuant to Section XII (Dispute Resolution), provided, however, that, instead of the burden of proof provided in Section XII, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XX. FUNDING

78. Performance of the terms of this Consent Decree by the City is not conditioned on the receipt of any Federal or Commonwealth grant funds or loans. In addition, performance is not excused by the lack of Federal or Commonwealth grant funds or loans.

XXI. SEVERABILITY

79. The provisions of this Consent Decree shall be severable, and should any provision be declared by a court of competent jurisdiction to be unenforceable, the remaining provisions shall remain in full force and effect.

XXII. TERMINATION

80. After the City completes all of the requirements of Section VI (Remedial Measures) and Section VII (Reports on Compliance), above, complies with all other requirements of the Consent Decree, and has paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree, the City may serve upon the United States and the

United States and Massachusetts v. City of Holyoke Consent Decree

Commonwealth a Request for Termination, certifying that the City has satisfied those requirements, together with all applicable supporting documentation.

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

82. If the United States and/or the Commonwealth do/does not agree that the Consent Decree may be terminated, the City may invoke dispute resolution under Section XII (Dispute Resolution), above. However, the City shall not seek dispute resolution of any dispute regarding termination until Sixty (60) Days after service of its Request for Termination.

XXIII. SIGNATORIES / SERVICE

83. Each undersigned representative of the City, Commonwealth of Massachusetts, EPA, 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.

84. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. The City 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. The

United States and Massachusetts v. City of Holyoke Consent Decree

City need not file an answer to the U.S. Complaint nor the Commonwealth's Plaintiff-Intervenor Complaint in this action unless or until the Court expressly declines to enter this Consent Decree.

XXIV. PUBLIC PARTICIPATION

85. 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 received disclose facts or considerations which indicate that this Consent Decree is inappropriate, improper or inadequate, and the Commonwealth reserves the right to withdraw or withhold consent if the United States withdraws or withholds consent and/or if the comments received disclose facts or considerations which indicate that this Consent Decree is inconsistent with state law. The City consents to the 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 this Decree, unless the United States has notified the City in writing that it no longer supports entry of this Decree.

XXV. INTEGRATION

86. This Consent Decree, including deliverables that are subsequently approved pursuant to this Decree, constitutes the entire agreement among the Parties regarding the subject matter of the Decree, and supersedes all prior representations, agreements, and understandings, whether oral or written, concerning the subject matter of the Decree herein. Other than submissions that are subsequently submitted and approved pursuant to this Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Decree.

United States and Massachusetts v. City of Holyoke Consent Decree

XXVI. SIGNATORIES

87. Each undersigned representative 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.

XXVII. APPENDICES

88. The following appendices are attached to and part of this Consent Decree: “Appendix A” is the “Executive Summary” of the City’s Updated CSO LTCP submitted to EPA and MassDEP on December 30, 2019; and “Appendix B” is the City’s modifications to the December 30, 2019, Updated CSO LTCP as set forth in the City’s April 4, 2022, email to EPA and the MassDEP.

XXVIII. FINAL JUDGMENT

89. Upon approval and entry of the Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, the Commonwealth of Massachusetts, and Defendant.

Judgment is hereby entered in accordance with the foregoing Consent Decree this _____ day of _____, 2023.

UNITED STATES DISTRICT JUDGE
District of Massachusetts

United States and Massachusetts v. City of Holyoke Consent Decree

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States of America and Commonwealth of Massachusetts v. City of Holyoke, Massachusetts*.

FOR THE UNITED STATES OF AMERICA:

Respectfully submitted,

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

HENRY FRIEDMAN

Digitally signed by HENRY
FRIEDMAN
Date: 2023.03.08 10:48:50 -05'00'

HENRY FRIEDMAN,
Assistant Section Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611
Phone:
Email:

Date

RACHAEL S. ROLLINS
United States Attorney
District of Massachusetts

BRIAN LAMACCHIA

Digitally signed by BRIAN
LAMACCHIA
Date: 2023.03.08 10:02:22 -05'00'

BRIAN M. LaMACCHIA
Assistant U.S. Attorney
U.S. Attorney's Office, District of Massachusetts
1 Courthouse Way, Suite 9200
Boston, MA 02110
Phone: [REDACTED]
Email: [REDACTED]

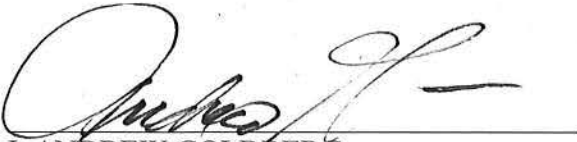
Date

United States and Massachusetts v. City of Holyoke Consent Decree

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States of America and Commonwealth of Massachusetts v. City of Holyoke, Massachusetts*.

FOR THE COMMONWEALTH OF MASSACHUSETTS:

ANDREA JOY CAMPBELL
Attorney General



I. ANDREW GOLDBERG
Assistant Attorney General
Environmental Protection Division
One Ashburton Place, 18th Floor
Boston, MA 02108
[REDACTED]
[REDACTED]

2/7/2023
Date

United States and Massachusetts v. City of Holyoke Consent Decree

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States of America and Commonwealth of Massachusetts v. City of Holyoke, Massachusetts*.

For the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

CARL DIERKER Digitally signed by CARL DIERKER
Date: 2023.02.23 10:54:53 -05'00'

CARL DIERKER
Regional Counsel
U.S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109

Date

Of Counsel

TONIA BANDROWICZ
Senior Enforcement Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 1
5 Post Office Square,
Boston, MA 02109

**BENJAMIN
BAHK** Digitally signed by
BENJAMIN BAHK
Date: 2023.03.07
13:52:53 -05'00'

BENJAMIN BAHK
Director, Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance
Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Date

LOURDES BUFILL Digitally signed by LOURDES
BUFILL
Date: 2023.02.23 13:26:18 -05'00'

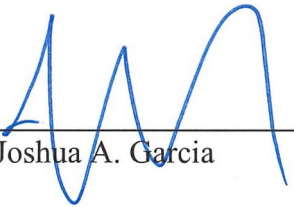
LOURDES BUFILL
Attorney, Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Date

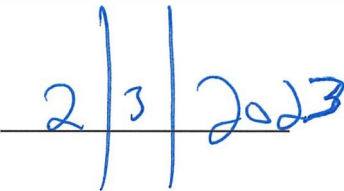
United States and Massachusetts v. City of Holyoke Consent Decree

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States of America and Commonwealth of Massachusetts v. City of Holyoke, Massachusetts*.

For Defendant CITY OF HOLYOKE, MA



Mayor Joshua A. Garcia

Date 

2/3/2023

171471-003
December 30, 2019

Mr. Michael McManus, General Superintendent
Holyoke Department of Public Works
63 Canal Street
Holyoke, MA 01040

Re: Draft CSO Long-Term Control Plan Update Report

Dear Mr. McManus:

Tighe & Bond is pleased to submit to the City of Holyoke the draft Combined Sewer Overflow Long-Term Control Plan (CSO LTCP) Update, which was prepared in accordance with the March 2018 CSO LTCP Update Work Plan that was approved by the Massachusetts Department of Environmental Protection (MassDEP) and the U.S. Environmental Protection Agency (EPA). This evaluation was also conducted in accordance with our October 11, 2018 agreement and November 26, 2019 amendment with the City for this effort.

Executive Summary

This report includes the following tasks:

- Sewer system characterization
- Review of changes to water quality standards and CSO policies
- Review of recent wastewater treatment facility and Berkshire Street CSO Treatment Facility flow and operating data
- Review of CSO activity data
- Review of Connecticut River water quality and quantity data
- Update the hydraulic model of the combined sewer system
- Develop and compare CSO abatement alternatives
- Provide CSO abatement recommendations
- Perform a climate vulnerability assessment
- Perform a financial capability assessment
- Develop an implementation schedule based on the results of the financial capability assessment

Phase 2 tasks, which have not yet been performed, include:

- Implementing a Public Participation Program
- Preparing a final report that includes a description of the public participation program and input received from attendees

1 Sewer System Characterization

The City of Holyoke's wastewater collection system consists of approximately 137 miles of sewer mains, approximately 61% of which is combined. These sewers range from brick, concrete and vitrified clay (VC) pipes in the older portions of the sewer system to reinforced concrete (RC), asbestos cement (AC) and polyvinyl chloride (PVC) pipes in the newer sections of the sewer system. Portions of the system are over 100 years old. The system includes

several major interceptor sewers that receive flow from area collector sewers and convey that wastewater flow towards the City's wastewater treatment facility (WWTF). The interceptor sewers and other key sewers reviewed in greater detail as part of this evaluation include:

- The North Interceptor
- The South Interceptor
- The Front Street Interceptor
- The Highland Park Interceptor
- The Day Brook Sewer
- The Jefferson Street Sewer

These sewer mains were included in the hydraulic model because they are the main lines conveying combined flow from upstream regulators to the WWTF. Refer to the sewer system schematic in Figure EX-1 for the locations of these sewers.

A total of 12 active CSO outfalls still remain in the City and are controlled by 17 regulators. A summary of these CSOs and regulators is presented below in Table EX-1. These CSOs are also shown in the schematic in Figure EX-1.

TABLE EX-1

CSOs Summary

CSO No.	Regulator No.	Location	Receiving Water
2	2	Providence Hospital	Connecticut River
7	7	Northampton St./Glen St. intersection	Connecticut River
8	8	Springdale Park	Connecticut River
9	9 ¹	Berkshire St.	Connecticut River
11	11	Jackson St.	Connecticut River
16	16	Front St./Appleton St. intersection	First Level Canal
17	17	Front St./Lyman St. intersection	First Level Canal
18	18	Walnut St.	Connecticut River
18	18A	Essex St./Walnut St. intersection	Connecticut River
18	18B	Highland Park Pump Station	Connecticut River
19	19	Yale St.	Connecticut River
20	20	Cleveland St.	Connecticut River
21	21 ²	River Terrace	Connecticut River
21	21B ²	River Terrace	Connecticut River
23	23A	Jefferson St., between Madison Ave. and Dartmouth St.	Connecticut River ³
23	23B	Jefferson St. at Dartmouth St.	Connecticut River ³
23	23C	Dartmouth St., just east of Jefferson St.	Connecticut River ³

¹Overflows from this regulator are currently treated at the Berkshire St. CSO Treatment Facility.

²There are 2 overflow points within the one regulator.

³During an overflow event, a portion of the discharge may infiltrate into the ground before reaching the river.

The major changes within the wastewater collection system that have occurred since the May 2000 Draft CSO LTCP was completed include:

1. Sewer separation projects in the Jones Ferry Road, Appleton Street, and Mosher Street areas (tributary to CSOs 3, 13 and 14, respectively).
2. The removal of Green Brook from the sewer system (tributary to CSO 21).
3. Regulator modifications at CSOs 2, 7, 8, 9, 11, 13, 16, 18A, 19, 20 and 23.
4. The Berkshire Street CSO Treatment Facility was constructed to treat combined overflows from the CSO 9 Regulator.

These changes have resulted in an estimated 66% reduction in annual combined sewer overflow volume since the draft CSO LTCP was prepared.

There are seven wastewater pumping stations in the City: Jones Ferry Road, Smith's Ferry, Mosher Street, Jackson Street, Cabot Street, Highland Park and Springdale Park. These pump stations are shown on Figure EX-1.

The design of sewer separation in the Jackson Street Area, which is tributary to CSO 11, is complete, and construction is expected to begin in the Spring of 2020.

A map of the City of Holyoke's wastewater collection system is included in Appendix A. The map illustrates key features of the sewer system and shows the sewersheds upstream of each active CSO.

2 CSO Activity and Wastewater Flow Data

The City has a comprehensive CSO monitoring program in place to monitor CSO activity and to ensure that the CSO regulators are operating properly that includes block testing and flow monitoring. This program is implemented by Suez, who has a contract with the City to operate and maintain the City's wastewater collection and storm drainage systems, pump stations, WWTF, and flood control systems. This program is in accordance with EPA and MassDEP permits and regulations.

2.1 CSO Activity and Flows

General observations are as follows:

1. The greatest number of CSO activations occur at the CSO 18 (Walnut Street) and CSO 20 (Cleveland Street) Regulators. Suez has reported that the high number of overflows at CSO 20 are related to 1.) an undersized outlet pipe on Oxford Road (a 16-inch diameter sewer with a flat-slope) and 2.) high flows from the Smith's Ferry Pump Station, which discharges into the gravity system a short distance upstream of the CSO 20 Regulator.
2. The greatest quantity of annual untreated CSO volume discharged to the Connecticut River or the First Level Canal is from CSOs 8 (Springdale Park), 9 (Berkshire Street), 18 (Walnut Street) and 21 (River Terrace), with annual overflow volumes ranging from 28.1 to 41.0 million gallons (MG).
3. The smallest quantity of annual untreated CSO volume discharged to the Connecticut River or the First Level Canal is from CSOs 2 (Providence Hospital), 7 (Northampton Street/Glen Street), 19 (Yale Street) and 23 (Jefferson Street), with annual overflow volumes ranging from 0.1 to 0.6 MG.

2.2 WWTF Flow Data

Average and maximum daily wastewater flow data measured at the WWTF from 2011 to 2018 was also reviewed as part of this evaluation. The data illustrates that the annual average flows, which ranged from 6.8 to 9.5 MGD, were well below the average daily design flow of the WWTF of 17.5 MGD. The average daily flow entering the WWTF exceeded the average daily design flow of 17.5 MGD an average of 5 times annually over the period from 2011 to 2018. The maximum flow through the WWTF exceeded the peak design flow of 37 MGD an average of 30 times annually over the period from 2011 to 2018.

2.3 Berkshire Street CSO Treatment Facility Flow Data

The Berkshire Street CSO Treatment Facility was constructed downstream of the CSO 9 outfall, which conveys the greatest volume of combined sewage/stormwater flow to the Connecticut River annually of the City's CSOs. The CSO Treatment Facility consists of a pump station, screening equipment, and a chlorine contact chamber.

The treatment facility was originally designed so that wastewater flow exceeding the capacity of the influent pumps (103 MGD) would overtop a weir wall in the wetwell, drop into the Return Channel adjacent to the wetwell, and then flow by gravity to the CSO 9 outfall pipe, which conveys the wastewater flow to the Connecticut River. However, shortly after facility startup, it was determined that if the flow level reached the overflow level in the pump station wetwell, basement backups would occur at buildings in the vicinity of the WWTF, and sewage would surcharge in the system to the point that the combined flow would exit the system through manholes on Main Street. In order to address the hydraulic issue described above, a 10-foot wide by 10-foot high opening was cut in the weir wall and was sealed by a new slide gate (Gate 4). Suez has established gate operating parameters to minimize bypasses as described below:

1. Gate 4 is opened when either the flow rate to the CSO Treatment Facility is 165 MGD for 150 seconds or the wastewater level in the pump station wet well is at or above 59.5 feet for 180 seconds.
2. Gate 4 is closed when the flow rate drops to 120 MGD.

CSO treatment facility operating data collected from 2009 to 2018 was reviewed as part of this evaluation. An average of 206 million gallons (MG) of combined flow was directed to the Berkshire Street CSO Treatment Facility annually over the last 10 years. Of that amount, an average of 174 MG (84%) was treated annually either through the CSO treatment facility or returned to the WWTF for secondary treatment. The remaining 32 MG of combined flow (16%) bypassed the CSO treatment facility annually and was discharged to the Connecticut River without treatment. The CSO treatment facility was active an average of 42 days/year from 2009 to 2018. On 9 of these days/year, on average, combined flow was discharged to the Connecticut River without treatment.

3 Watershed and Receiving Water Characterization

Information on the characteristics of the Connecticut River and its watershed was provided in the CSO LTCP Update report. The Connecticut River, which is approximately 410 miles long, is the longest river in New England. The Connecticut River flows from the Connecticut Lakes in northern New Hampshire, along the Vermont/New Hampshire boundary, and then through Massachusetts and Connecticut, eventually discharging into the Long Island Sound at Old Saybrook.

The Connecticut River Watershed, which is the largest river ecosystem in New England, includes a land area of approximately 11,000 square miles over four New England states (Vermont, New Hampshire, Massachusetts and Connecticut). The Nature Conservancy

named the Connecticut River Watershed one of the "Last Great Places" in 1993. The watershed of the mainstem of the Connecticut River within Massachusetts encompasses 660 square miles and includes all or part of 44 communities, including the City of Holyoke.

The portion of the river along Holyoke is approximately 11 miles long and can be divided into two sections: the portion upstream (north) of the Holyoke Dam, which is approximately 6 miles long and the portion downstream (south) of the Holyoke Dam, which is approximately 5 miles long. Within Holyoke, the watershed north of the Holyoke Dam is generally characterized by rural development, while the watershed south of the dam is more urbanized. There are dikes and floodwalls that restrict access along the southern section of the river and prevent flood damage during high river level periods.

In recognition of the Connecticut River's significance to the region, several programs and projects have focused on the protection and restoration of the Connecticut River and revitalization of the communities along the river. For example, the entire Connecticut River watershed was designated as a national fish and wildlife refuge in 1991. The Silvio O. Conte National Fish and Wildlife Refuge Act was passed to conserve, protect and enhance the plant, fish and wildlife species within the watershed. In addition, the Connecticut River was designated by the Federal Government in 1998 as one of fourteen "American Heritage Rivers" in the country. Federal support for the protection and restoration of the Connecticut River and revitalization of the communities along it was provided through this program.

Recreational activities in and along the Connecticut River include primary contact recreation (swimming and water skiing), secondary contact recreation (fishing and boating), and hiking/walking. Most of these recreational activities, however, occur upstream of the Holyoke Dam.

Sensitive areas along the river identified during the study include:

1. Near the Holyoke Dam, because the dam acts as a staging area and temporary bottleneck for uprunning fish. CSO 18 is just upstream of the dam.
2. Although there are no designated public swimming areas along the Connecticut River, swimming is common above the dam at Long Pond Cove and at "High Rock". High Rock is located just downstream of CSO 21 and Long Pond Cove is located downstream of CSO 19.
3. Boating is common in the vicinity of the Sue Panitch River Access Center, an existing public boat launch site at the end of Jones Ferry Road. CSO 2 is just downstream of the boat launch location.

Recent river water quality data confirms that bacteria levels exceed water quality standards.

The Connecticut River is impacted by CSO discharges from the City of Holyoke and other nearby communities along the river, including the Cities of Springfield and Chicopee. Average annual CSO discharges from the three communities are as follows:

Community	Annual CSO Volume (MG)
Holyoke	163 ¹
Chicopee	110 ²
Springfield	443 ³

¹This is the estimated current annual CSO volume. CSO 11 will be eliminated as part of a sewer separation project that has been designed and will soon be bid, which will reduce the total average annual overflow volume by 18 MG to 145 MG.

²As reported in Chicopee's 2017 Integrated Management Plan.

³As reported in Springfield's 2014 Integrated Wastewater Plan.

In addition to the CSO discharges to the Connecticut River, there are stormwater discharges to the river from Holyoke and many other communities along the river that impact water quality. In the early 2000's, Holyoke, Springfield, and Chicopee partnered with MassDEP and the Pioneer Valley Planning Commission (PVPC) to update a Connecticut River water quality model. The development of the model and an analysis of results is provided in Springfield's Final Long Term CSO Control Plan, dated May 2012. Springfield concluded in their Plan that while CSOs contributed to *E. coli* in the river, the overall volume of stormwater into the river is so much greater than CSO volume that the majority of *E. coli* in the river during rain events can be attributed to stormwater, rather than CSOs.

The PVPC, in collaboration with the Connecticut River Conservancy (CRC), has compiled bacteriological (*E. coli*) data collected from 2012 to the present at multiple locations along the river from Vermont to Connecticut. The data shows that water quality standard exceedances for bacteria were measured in the river within each of the communities where samples were taken, regardless of whether the community has a separate sewer system or a combined sewer system with discharges to the river. In addition, there does not appear to be a significant difference in the number of water quality exceedances upstream of the Holyoke Dam vs. downstream of the Dam. This data may also be indicating that stormwater discharges have a significant impact on water quality within the Connecticut River.

4 Wastewater Collection System Modeling

A hydrologic and hydraulic model of the Holyoke wastewater collection system was developed as part of the draft CSO LTCP. The model simulated CSO activity in the City during storm events of various sizes and was used to develop and evaluate CSO abatement alternatives. At that time, the Storm Water Management Model (SWMM) software was used to create the model. That model software was selected because it was accepted by EPA and MassDEP, was commonly used for sewer system modeling, and was used for the City's sewer system modeling performed as part of the regional CSO study in the late 1980s. The regional model was used, where appropriate, to facilitate the development of the Holyoke sewer system model as part of the May 2000 draft CSO LTCP.

Since 2008, the model developed as part of the draft CSO LTCP has been updated by Suez to reflect CSO abatement projects since the original draft CSO LTCP was prepared in 2000. The City's model was refined as part of this project, and then used to develop and evaluate CSO abatement alternatives. The following changes were made to the sewer system model to improve accuracy:

1. Surface and pipe invert elevation data was collected along the Front Street Interceptor, the Jefferson Street Sewer, and the Day Brook Sewer and used to refine pipe slopes and depths in the model.
2. Record drawings for the North, South, and Highland Park Interceptors were reviewed and the model was adjusted based on this data.
3. Changes were made at the CSO 9 Regulator to better reflect Suez's control of the flow split between the WWTF and the Berkshire Street CSO Treatment Facility.
4. Changes were made at the Highland Park Pump Station to better reflect the actual pump rates based on Suez's pump flow data.
5. An additional sewershed and an existing regulator were added to the model on Dartmouth Street, near Jefferson Street, in Drainage Area 23 to improve model accuracy.
6. An additional CSO (CSO 17), located at the Front Street/Lyman Street intersection, was identified by the City and added to the model.

5 CSO Control Policies

National CSO Control Policy – Under EPA’s current (1994) CSO control policy, permittees are required to characterize their sewer systems, demonstrate implementation of the nine minimum controls (NMCs) established by the policy and develop a long-term CSO control plan. Compliance with the NMCs is documented by the City annually, as required by its WWTF National Pollutant Discharge Elimination System (NPDES) permit. The EPA policy also requires that the long-term CSO control plan be developed using either a “presumption” approach or a “demonstration” approach. Under the *presumption approach*, compliance with water quality standards is presumed if one of the following performance criteria is met:

1. No more than an average of four overflow events per year occur on an annual average basis.
2. The elimination or capture for treatment of no less than 85 percent by volume of the combined wastewater flow collected on a system-wide annual average basis during precipitation events, as clarified in the 1995 EPA Guidance for Long-Term Control Plan document.
3. The elimination or removal of no less than the mass of pollutants causing water quality impairment for the volume reductions noted in Item 2 above.

The *presumption approach* does not release municipalities from the overall requirement of meeting applicable water quality standards. If the permitting authority determines that the long-term CSO control plan will not result in attainment of water quality standards, more stringent controls may be required.

Under the *demonstration approach*, compliance with water quality standards is confirmed through the CSO control planning process. This approach provides flexibility in developing a long-term CSO control plan. While not necessarily satisfying the performance criteria of the *presumption approach*, the plan must be proven to adequately meet water quality standards. The *demonstration approach* depends on a detailed assessment of receiving waters and the impacts of CSO discharges and other sources of wet weather pollutants on water quality.

The *presumption approach* was used in this evaluation.

Massachusetts CSO Control Policy - MassDEP’s August 1997 CSO policy established the following goals:

1. Elimination of receiving water impacts is the primary goal.
2. Where the elimination of CSOs is not feasible, the goal is minimization of impacts to the maximum extent feasible and attaining the highest water quality achievable. In these areas, the identification and protection of critical uses is essential.

6 Development of CSO Abatement Alternatives

A wide variety of technologies and approaches for the abatement of CSO impacts on receiving water quality were considered as part of this evaluation. The CSO abatement technologies ranged from relatively low-cost, "soft" approaches, such as street sweeping and catch basin cleaning, to high-cost, high-tech approaches, such as the construction of satellite treatment or storage facilities to abate CSO discharges. The different types of available CSO abatement technologies and approaches are generally classified under one of the categories listed below, as recommended in EPA's 1995 *Combined Sewer Overflows: Guidance for Long-Term Control Plan*:

- Source controls
- Collection system controls
- Storage technologies
- Treatment technologies

Although it is recommended that the City pursue many of the source controls and collection system controls described in the report, such as the removal of infiltration/inflow (I/I) sources previously identified in the wastewater collection system, the majority of the source controls and collection system controls identified are expected to provide only a small (or no) reduction in CSO discharges. As such, the abatement alternatives developed in this report have focused on those abatement measures that are expected to have a significant impact on CSO discharges, including sewer separation, stormwater storage, CSO storage, satellite CSO treatment and upgrading the existing wastewater treatment facility.

6.1 Screening Level Analysis

A screening level analysis was performed that compared the screening level costs for sewer separation, storage and treatment for each CSO. In accordance with the approved Work Plan, costs were developed for CSO storage and treatment facilities that reduce the number of untreated overflows per year to no greater than 0, 4, or 8 in this screening level analysis. This comparison was used to identify alternatives that could be eliminated from further review. Generally, sewer separation is the preferred abatement alternative, where affordable, as noted in the 1997 Massachusetts Guidance for Abatement of Pollution from CSO Discharges. As such, where sewer separation was determined to be a lower cost than storing or treating CSO discharges (or a similar cost to CSO storage or treatment), then sewer separation was recommended. Note that the sewer separation costs were primarily compared to the cost of CSO facilities that reduce the number of untreated overflows per year to no greater than 4. As noted previously, one of the Federal CSO policy performance criteria under the *presumption approach* is that no more than an average of 4 overflow events per year occur on an annual average basis.

The screening level costs include estimated capital costs and operation and maintenance costs over a 20-year period. The capital costs include construction costs and engineering costs. The construction costs include material costs, installation costs, general conditions costs, the contractor's overhead and profit, and a 30% contingency. The sewer separation costs include the cost of rehabilitating existing combined sewer piping that will either be converted to a storm drain or a sanitary sewer. The inclusion of these costs is appropriate since during design some existing piping is typically found to be in poor condition, requiring rehabilitation. In order to compare CSO treatment/storage facility alternatives to sewer separation alternatives on an equivalent basis, the cost of rehabilitating existing piping was also included in the CSO facility alternatives since these piping improvements will still be needed.

Sewer separation was determined to be the least expensive alternative for CSOs 2, 8, 18A, 19, 20 and 23. CSO storage and treatment facilities were less expensive for CSO 18 and a CSO treatment facility was less expensive for CSO 21. Conveyance of the CSO 7 overflows to the South Interceptor was determined to be less expensive than sewer separation, storage or treatment.

Where CSO storage or treatment was determined to be a lower cost, a siting analysis was performed to determine whether there is available land that is suitable for construction of a storage or treatment facility. The siting analysis considered land ownership, space available, neighborhood impacts, and necessary site improvements.

6.2 CSO 18 Alternatives Analysis

For CSO 18, The only open land identified near the CSO regulator and outfall large enough to accommodate a storage or treatment facility is park land owned by the City (Pulaski Park). The park is bordered by a residential neighborhood to the south, Route 202 to the west, and the Connecticut River and the First Level Canal to the north and east. Pulaski Park is over 14 acres in size and includes walking paths, benches, a playground, a spray park, a basketball court, a volleyball court and a skate board park. The majority of these park facilities are located at the eastern end of the park. The Highland Park Wastewater Pump Station is located at the western end of the park. The most western section of the park is located between the pump station and Route 202 and is a wooded area adjacent to the railroad tracks. Because there are currently no developed recreational facilities within this wooded section of the park, this location was selected for a proposed CSO treatment or storage facility.

Concerns related to siting a CSO facility at this location include:

1. The park land is protected under Article 97 of the Amendments to the Constitution of the Commonwealth, EOAA Land Disposition Policies, and a change in its use would require special legislation. As such, acquisition of this land for a CSO facility may be difficult.
2. Pulaski Park was placed on the National Historic Register in 2004. Because the park is a historic location, construction of a CSO facility at the park may not be allowed.
3. Pulaski Park has been the focus of restoration efforts by the City, as is noted in the City's 2013-2018 Open Space and Recreation Plan. As evidence of this, over the last 10 years the City constructed a new playground, spray park, skate park, a cross-fit training facility, and benches.
4. A new CSO facility at the park could have a negative aesthetic impact on park users and the adjacent residential neighborhood.
5. There is the potential for odors associated with storing and/or treating wastewater flow, which may impact park users and the adjacent residential neighborhood.

Because of the siting concerns noted, additional abatement alternatives for CSO 18 were considered through supplemental analyses.

6.2.1 Supplemental CSO 18 Analyses

A more detailed analysis of CSO abatement alternatives for Drainage Area 18 was performed that included refining CSO storage and treatment costs. In addition, because of the concerns noted regarding siting a CSO facility in Drainage Area 18, at Pulaski Park, partial sewer separation alternatives were developed that result in 4, 8 and 16 overflows per year. The

alternatives that would result in 4 or 8 overflows per year were established based on the Work Plan. The remaining partial sewer separation alternative was developed to reduce costs based on the configuration of the existing piping in this drainage area. Hydraulic modeling simulations indicate that this lower cost partial sewer separation alternative results in 16 overflows per year.

Complete sewer separation provides the greatest level of abatement but is the most expensive alternative. Partial sewer separation alternatives provide the advantage of allowing the City to more easily implement additional abatement in this drainage area, if determined to be necessary, when compared to CSO storage/treatment alternatives. In addition, the sewer separation alternatives provide the benefit of not requiring the construction of a CSO facility in Pulaski Park, which may not be allowed because the park is protected land and a historic location. Partial sewer separation that results in 8 overflows per year is not recommended since it provides a lower level of abatement than sewer separation that results in 4 overflow per year with only a small reduction in cost.

As noted above, there are significant siting concerns related to construction of a storage or treatment facility at Pulaski Park. The CSO 18 alternatives were reviewed in greater detail as part of the development of system-wide alternatives.

6.3 CSO 21 Alternatives Analysis

For CSO 21, because the CSO 21 Regulator is located at the bottom of a steep embankment, the most appropriate location for a CSO treatment facility is at the bottom of this embankment. However, flat ground at the bottom of the embankment is limited. As such, significant earthwork/regrading would be needed in order to construct a treatment facility at this location and provide vehicle access to it. The cost of a CSO treatment facility at this location was increased to reflect the difficult site conditions.

Concerns related to siting a CSO facility at this location include:

1. The property where the CSO 21 Regulator is located and the proposed location of the CSO 21 treatment facility is privately owned; the property owner may not be willing to sell the property to the City. If the City were to attempt to take the land by eminent domain, significant legal action may be necessary.
2. Construction of a CSO treatment facility at this location will be challenging due to the small area of flat land and the steep slopes.
3. The treatment facility would be located in a residential neighborhood; the construction of a CSO treatment facility at this location may not be accepted by the nearby residents.
4. There is the potential for odors associated with treating wastewater flow at this location, which may impact the adjacent residential neighborhood.

Considering the above concerns and the fact that there is only a small difference in cost between sewer separation in Drainage Area 21 and the cost of constructing a CSO treatment facility (1% difference), sewer separation is recommended over construction of a CSO treatment facility at CSO 21.

Sending additional combined flow to the WWTF or the Berkshire Street CSO Treatment Facility were also considered during the screening level analysis. It was determined that neither facility has surplus capacity to accommodate additional flow and that there is little space available to expand these facilities. In addition, it was noted in the report that improvements at the WWTF to provide additional nitrogen removal may be necessary in the future and that these improvements may require use of the little space available to

construct additional tankage to meet nitrogen removal requirements. In addition, in order to convey additional combined flow from upstream areas (CSOs 18, 19, 20, 21 and 23) to the existing treatment facilities, a new interceptor would need to be constructed because the Front Street Interceptor has insufficient surplus capacity to accommodate the upstream CSO discharges.

6.4 Day Brook Alternatives Analysis

Day Brook is a significant water course that enters the combined sewer system at the upstream end of the CSO 9 Drainage Area. In order to reduce untreated CSO 9 discharges, detention and removal of Day Brook from the sewer system were evaluated in this study. The cost to detain flow peaks from Day Brook during wet weather events was estimated as approximately \$2.0 million and this alternative would reduce the annual volume of overflow during a typical year by 6.8 MG. Several Day Brook removal pipeline alternatives were considered in this evaluation. The estimated capital cost of the preferred layout for a new storm drain that would convey Day Brook to the canal system is \$12.8 million. The removal of Day Brook from the sewer system would reduce the annual overflow volume by approximately 7.9 MG during a typical year and reduce the average daily flow to the WWTF by approximately 1.2 MGD.

6.5 System-Wide Alternatives Analysis

A total of six system-wide alternatives to reduce the annual number of CSO activations and volume were developed and are summarized in Table EX-2.

Model simulations indicate that during a typical year each of the six alternatives will reduce the total City-wide CSO flow volume by 90% or more. In addition, model simulations indicate that each alternative will result in the elimination or capture for treatment of no less than 85 percent by volume of the combined wastewater flow collected on a system-wide annual average basis.

The Federal CSO policy indicates that under the *presumption approach* compliance with water quality standards is achieved if one of the following performance criteria is met:

1. No more than an average of four overflow events per year occur on an annual average basis.
2. The elimination or capture for treatment of no less than 85 percent by volume of the combined wastewater flow collected on a system-wide annual average basis (during precipitation events), as clarified in the 1995 EPA Guidance for Long-Term Control Plan document.
3. The elimination or removal of no less than the mass of pollutants causing water quality impairment for the volume reductions noted in Item 2 above.

Based on Criteria 2 above, each of the six system-wide alternatives developed meets the CSO policy goals.

TABLE EX-2
Summary of System-Wide Alternatives⁸

System-Wide Alternatives (Costs in \$M)	Capital Cost (\$M) ^{1,3,4}	Total Project Cost (\$M) ^{2,3,4}	No. of Overflow Activations Remaining	Annual CSO Volume Removed (MG)	% CSO Removal ⁵	Annual % of System Flow Removed/ Captured ⁶	Advantages	Disadvantages
Alternative 1								
7 - Sewer separation -	\$4.7	\$4.7	0				-Greatest level of abatement	
Day Brook - Remove Flow From Sewer System ⁷ -	\$12.8	\$10.2	3	131	93%	94%	-Greatest reduction in flow to the WWTF	-Highest cost alternative
18 - Full Sewer Separation -	\$51.5	\$51.5	0				-Eliminates CSO discharges to a sensitive area of the river (just upstream of dam at CSO 18)	-Will likely take the longest to complete
Separation of 2, 8, 18A, 19, 20, 21, 23 -	\$51.2	\$51.2	0					
Subtotal	\$120.1	\$117.5					\$/gal: \$0.90	
Alternative 2								
7 - Convey overflow to the South Interceptor -	\$0.2	\$0.7	4				≤4 activations/year achieved at all CSOs	-Area 18 storage facility would be located on Parks & Rec land; change in use requires special state legislation
Day Brook - Detention -	\$1.4	\$1.8	3	124	92%	95%	-Reduces CSO discharges to a sensitive area of the river (just upstream of dam at CSO 18)	
18 - Storage - 4 Activations (2.5 MG) -	\$20.8	\$31.6	4					
Separation of 2, 8, 18A, 19, 20, 21, 23 -	\$51.2	\$51.2	0					
Subtotal	\$73.6	\$85.2					\$/gal: \$0.68	
Alternative 3								
7 - Convey overflow to the South Interceptor -	\$0.2	\$0.7	4				- ≤4 activations/year achieved at all CSOs	-Area 18 treatment facility would be located on Parks & Rec land; change in use requires special state legislation
Day Brook - Do Nothing -	\$0.0	\$0.0	3	122	91%	95%		
18 - Treatment - 4 Activations (62 MGD) -	\$20.5	\$33.8	4				-Lower cost than Alts 1 & 2	-Does not reduce the number of CSO discharges to the river, although treatment would be provided
Separation of 2, 8, 18A, 19, 20, 21, 23 -	\$51.2	\$51.2	0					
Subtotal	\$71.9	\$85.7					\$/gal: \$0.70	
Alternative 4								
7 - Convey overflow to the South Interceptor -	\$0.2	\$0.7	4				-≤4 activations/year achieved at all CSOs	-Area 18 storage facility located on Parks & Rec land; change in use requires special state legislation
Day Brook - Do Nothing -	\$0.0	\$0.0	3	117	90%	94%		
18 - Storage - 4 Activations (2.5 MG) -	\$20.8	\$31.6	4				-Lower cost than Alts 1, 2, & 3	
Separation of 2, 8, 18A, 19, 20, 21, 23 -	\$51.2	\$51.2	0					
Subtotal	\$72.2	\$83.5					\$/gal: \$0.71	
Alternative 5								
7 - Convey overflow to the South Interceptor -	\$0.2	\$0.7	4				-≤4 activations/year achieved at all CSOs	
Day Brook - Do Nothing -	\$0.0	\$0.0	3	122	91%	95%	-Reduces CSO discharges	
18 - Partial Sewer Separation - 4 Activations -	\$39.5	\$40.8	4				-Does not rely on obtaining Parks & Rec land for siting a CSO facility	-High cost
Separation of 2, 8, 18A, 19, 20, 21, 23 -	\$51.2	\$51.2	0				-Additional abatement is more easily implemented	
Subtotal	\$90.9	\$92.6					\$/gal: \$0.76	
Alternative 6								
7 - Convey overflow to the South Interceptor -	\$0.2	\$0.7	4				-Lowest cost alternative	
Day Brook - Do Nothing -	\$0.0	\$0.0	3	116	90%	93%	-May be completed in a shorter timeframe	
18 - Partial Sewer Separation - 16 Activations -	\$25.4	\$27.8	16				-Does not rely on obtaining Parks & Rec land for siting a CSO facility	-CSO 18 still >4 activations per year; contingent on approval of 85% reduction
Separation of 2, 8, 18A, 19, 20, 21, 23 -	\$51.2	\$51.2	0				-Additional abatement is more easily implemented	
Subtotal	\$76.8	\$79.7					\$/gal: \$0.69	

¹Capital cost estimates include construction costs, engineering costs (20%) and a construction contingency (30%).

²Total cost includes total capital cost, O&M, and an allowance for routine sewer system lining/replacement.

³Costs are based on a December 2019 Engineering News Record Construction Cost Index of 11,381.

⁴These are Engineer's Opinions of Probable Costs. Tighe & Bond has no control over the cost or availability of contractor's labor, equipment or materials, or over market conditions or the contractor's method of pricing, and the Opinions of Probable Cost are made on the basis of Tighe & Bond's professional judgment and experience. Tighe & Bond makes no guarantee nor warranty, expressed or implied, that the cost of the Work will not vary from the Opinions of Probable Cost.

⁵Percentage of 1976 annual total combined sewer system flow that is no longer released untreated to the river. The original volume, prior to any CSO abatement (subsequent to the 2000 draft CSO LTCP), is estimated to be 475 MG per the 2019 model results.

⁶Percentage of 1976 annual total combined sewer system flow that will be captured for treatment or eliminated during storm events, based on the sewer system flows in place prior to the implementation of CSO improvements after the 2000 draft CSO LTCP was completed. The dry weather flow is not included in the calculation.

⁷The total project cost includes the reduction in operation and maintenance costs at the WWTF related to the reduction in average daily flow once Day Brook is removed from the sewer system.

⁸This comparison excludes abatement of CSO 11 since the abatement approach will be the same for each alternative. Sewer separation has been designed for Drainage Area 11 and construction is expected to begin in 2020.

The system-wide analysis evaluated, through hydraulic modeling, the total impact on the wastewater collection system of the proposed improvements under each alternative. The following components of the system-wide alternatives were considered for this analysis:

- **Day Brook** – Three alternatives were considered for Day Brook: do nothing, detention to reduce peak flows during storm events, or completely removing the brook flow from the sewer system through the construction of a drain pipe to convey the brook to the Connecticut River or the canal system. Model results indicate that if Day Brook is not detained or removed from the sewer system, the number of untreated discharges to the Connecticut River at CSO 9 would still be reduced to 4 per year, on average, due to the proposed improvements in other areas.
- **WWTF Upgrades** - Similar to the above, if no improvements to the WWTF are made to accommodate additional flow, the number of untreated discharges to the Connecticut River at CSO 9 would still be reduced to 4 per year, on average, due to the proposed improvements in other areas.
- **CSO 7** - The South Interceptor is expected to have the capacity to accommodate the overflow from CSO 7 since the flow removed through separation in Drainage Areas 2 and 8 is predicted to be greater than the flow added by the CSO 7 overflow during each of the storms measured in 1976 (the typical year used for the model simulation).
- **CSO 18** – As discussed above, CSO abatement through complete sewer separation, partial sewer separation, storage, and satellite treatment, was considered.
- **CSOs 2, 8, 18A, 19, 20, 21, and 23** - Each alternative included the complete sewer separation of Drainage Areas 2, 8, 18A, 19, 20, 21 and 23, which were determined to be more appropriate and/or cost effective than satellite treatment or storage alternatives during the screening analysis.

Note that System-Wide Alternative 1 was developed to represent the alternative that is expected to provide the greatest level of abatement. However, this alternative would have the highest cost.

6.5.1 System-Wide Alternative Selection

The system-wide alternatives analysis determined that the most cost-effective approach to achieving the CSO policy goals is to implement all or part of Alternative 6, which includes the following components listed in Table EX-2:

TABLE EX-3

Alternative 6 Components²

Drainage Area	Recommended Abatement	Capital Cost (\$M)	Total Project Cost (\$M)
11 ¹	Sewer separation	\$8.6	\$8.6
2, 8, 18A, 19, 20, 21 & 23	Sewer separation	\$51.2	\$51.2
7	Divert flow to South Interceptor	\$0.2	\$0.7
18	Partial sewer separation (≤16 overflows/year)	\$25.4	\$27.8
TOTAL		\$85.4	\$88.3

¹Design of sewer separation in this area is complete and construction is expected to begin in the spring of 2020.

²This alternative will eliminate or capture for treatment no less than 85 percent by volume of the combined wastewater flow collected on a system-wide annual average basis, which is one of the acceptable performance criteria described in the National CSO policy under the *presumption approach*.

Alternative 6 is the lowest cost system-wide alternative and meets the federal CSO policy goal under the *presumption approach* of eliminating or capturing for treatment of no less than 85 percent by volume of the combined wastewater flow collected during rain events on a system-wide annual average basis. Alternative 6 results in a 90% reduction in overflow volume annually and results in the capture or elimination of 93% by volume of the combined wastewater flow collected on a system-wide annual average basis.

Advantages of this system-wide alternative include:

1. Lowest cost.
2. Meets the water quality goals under the *presumption approach*.
3. Likely to be more quickly implemented than more expensive alternatives.
4. It does not require the construction of a CSO treatment or storage facility at Pulaski Park in Drainage Area 18, which might not be allowed because the park is a historic site and is protected land in accordance with under Article 97 of the Amendments to the Constitution of the Commonwealth, EOAA Land Disposition Policies (a change in its use would require special legislation). In addition, the construction of a CSO facility at Pulaski Park has the potential to impact the adjacent neighborhood and park users.
5. Partial sewer separation of Drainage Area 18 removes more overflow volume than treatment or storage for the same number of overflows.
6. Additional abatement is more easily implemented with sewer separation alternatives, if determined to be necessary in the future.

In addition, to the above, note that Alternative 6 provides only a slightly lower level of abatement than Alternative 1, which provides the greatest level of abatement, as shown below:

Alternative	Total Project Cost (\$M) ¹	% CSO removal
1	\$126.1	93%
6	\$88.3	90%

¹Includes capital costs, operation & maintenance costs over a 20-year period, and an allowance for sewer lining/replacement over the 20-year period. Costs include Drainage Area 11 sewer separation.

6.6 Recommended CSO Abatement

A more detailed assessment of System-Wide Alternative 6 revealed that not all of the CSOs in the City would need to be abated in order to comply with the federal CSO control policy using the *presumption approach*.

The City proposes to implement the abatement projects described in Table EX-4, which would comply with federal CSO policy goals by achieving 87% capture or elimination of the combined flow within the wastewater collection system during wet weather events on an average annual basis, when considered in conjunction with prior CSO abatement projects. The abatement of these CSOs would also result in an 86% reduction in annual CSO volume, when considered in conjunction with prior CSO abatement projects.

TABLE EX-4

Recommended CSO Abatement Plan – 86% CSO Removal and 87% Capture

CSO No.	CSO Description	Recommended Abatement	Capital Cost (\$M)	Annual CSO Volume Removed (MG)¹	Cumulative % CSO Volume Reduction	\$/CSO Gal Removed Annually
Previously Implemented CSO Abatement Projects				316.3	66.0%	---
11	Jackson St.	Sewer Separation	\$8.60	17.8	69.7%	\$0.48
8	Springdale Park	Sewer Separation	\$9.56	21.4	74.2%	\$0.45
21	River Terrace	Sewer Separation	\$16.67	58.4	86.4%	\$0.29
TOTAL	---		\$34.83	413.9	---	---

¹Based on a total annual overflow volume of 479.2 MG in 2000.

These three areas were selected for abatement because their implementation is the most cost-effective and would eliminate 3 of the 4 CSOs with the greatest overflow volume.

No further CSO abatement is proposed or required to comply with the federal CSO control policy.

7 Climate Vulnerability Assessment

The impact of climate change on the selection of CSO abatement alternatives was considered in this report. As part of this effort, historical rainfall and river level/flow data in the Holyoke area were reviewed. In addition, reports on regional rainfall and river level/flow trends were reviewed. This data and literature review confirmed that rainfall amounts and river flows have increased over the last 70+ years. In addition, the data indicates that there has been an increase in the number of extreme rain events.

The impact of climate change on the CSO abatement alternatives was evaluated as part of this assessment. Sewer separation is typically performed by installing new sewers to convey sanitary sewage and converting the existing combined sewers to storm drains. Generally, the quantity of sewage flow is not expected to be impacted by climate change and, correspondingly, the cost of sewer separation is not expected to be impacted by climate change. In addition, the level of abatement provided by sewer separation is not expected to be impacted by climate change.

Both the CSO treatment and storage facilities would be sized to prevent more than 4 overflows during a typical year. Climate change has resulted in an increase in the number of larger, more intense rain events. If this trend continues, a CSO treatment or storage facility sized based on the storms experienced today may not be large enough to prevent more than 4 overflows/year in the future. As such, a CSO treatment or storage facility is more likely to be impacted by climate change than sewer separation alternatives.

8 Affordability Analysis

The affordability of the recommended CSO abatement plan and the City's other non-CSO wastewater needs has been assessed as part of this study. The affordability analysis includes an evaluation of the financial impacts of CSO abatement on an "average" community based on income using an approach specifically developed by EPA for the CSO abatement program. The EPA analysis is commonly used as a first step in evaluating

project affordability. However, it is important to note that Holyoke is not an “average” community and this approach does not fully portray actual cost impacts. Since Holyoke is one of the most economically disadvantaged communities in the Commonwealth of Massachusetts, other considerations that assess Holyoke’s ability to fund CSO abatement are also presented in this report (based primarily on the 2017 American Community Survey).

The following information confirms the greater financial challenges facing the City of Holyoke and its residents than an “average” community (based on economic conditions):

- Holyoke’s median household income (MHI) of \$37,954 is the third lowest in Massachusetts; Holyoke’s MHI is only half of the state average of \$74,167.
- Holyoke has the second highest poverty rate in Massachusetts; 29% of Holyoke’s residents live below the poverty level vs. the state average of 11%.
- The number of Holyoke residents below the poverty level has nearly doubled since 1970.
- One quarter of the City’s population that lives in the downtown area is especially impoverished with a median household income of \$16,450; 55% of these residents live below the poverty level.
- Holyoke is one of only ten public school systems statewide that applied for and received approval for its schools to provide universal free lunch due to high poverty levels.
- Holyoke’s unemployment rate of 10.2% is almost double the state average of 6.0%; in addition, Holyoke’s Labor Participation Rate of 57% is well below the state average of 67%.
- Approximately 53% of the City’s revenue is from state aid, which is well above the state average of 14%.
- 21% of the housing in Holyoke is subsidized or available for low-income residents.

The EPA financial capability approach compares the total annual residential costs for wastewater collection, treatment and CSO abatement with the median household income. In addition, certain indicators of the City’s economic health are rated individually, and then combined for an overall rating. These two factors, the average annual residential sewer cost expressed as a percentage of the median household income (the Residential Indicator) and the consolidated rating of the economic indicators are then used to provide information on the impact of a project on the community, using the criteria established by EPA and summarized in Table EX-5.

TABLE EX-5

EPA Financial Capability Matrix

Permittee Financial Capability Indicator (Socio-economic, Debt and Financial Indicators)	Residential Indicator (cost per household as a % of median household income)		
	Low	Mid-Range	High
	(< 1.0%)	(1.0 - 2.0%)	(> 2.0%)
Weak (< 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (> 2.5)	Low Burden	Low Burden	Medium Burden

The City's Permittee Financial Capability Indicator score is 1.5 (at the low end of Mid-Range), based on its current bond rating, unemployment rate, median household income (MHI), and sewer enterprise system fee collection rate. This Permittee Financial Capability rating of Mid-Range is the result of the A1 bond rating score being "Strong". However, the other indicators that consider unemployment rate, MHI, and the sewer enterprise system fee collection rate are all considered weak, with scores of 1.0. The unemployment rate, MHI, and the sewer enterprise system fee collection rate provide a more accurate indication of how economically depressed the City is and therefore a "Weak" rating should be applied to Holyoke.

With a Permittee Financial Capability Indicator that is "Weak", the EPA methodology indicates that a High Burden is placed on a community when the Residential Indicator is greater than or equal to 1%, as shown in Table EX-5.

The City's current Residential Indicator is 1.0, based on its current wastewater operation and maintenance and debt service costs. This indicates that the City's wastewater costs currently place a High Burden on households earning the median household income. Note that the existing wastewater costs place an even higher burden on the City's large low-income population which earn well below the City's MHI of \$37,954 (per the 2017 American Community Survey). As noted above, one quarter of the City's population that lives in the downtown area has a median household income of only \$16,450.

The City's future wastewater costs were projected in this evaluation and included in the affordability assessment. Future wastewater costs include improvements expected to be necessary at the WWTF and within the wastewater collection system over the next 20 years, as well as the recommended CSO abatement. The most significant WWTF improvement anticipated is the potential need for nitrogen removal upgrades to comply with anticipated changes in permit requirements. The cost of these upgrades is estimated to be approximately \$137 million based on a prior study performed for MassDEP. Within the wastewater collection system, we have assumed that 2% of the separated sewers and the combined sewers that are not included in the recommended plan will need to be rehabilitated or replaced over the next 20 years. In addition, we have assumed that rehabilitation of the Front Street Interceptor and the Day Brook Sewer will be needed over the next 20 years. Portions of these major sewer mains are over 150 years old. We also assumed that the Springdale Park Pump Station will be replaced during this 20-year period.

The calculated Residential Indicator values using the EPA affordability methodology are shown in Table EX-6 and illustrate that even if CSO abatement costs are not considered, the anticipated wastewater costs will place a High Burden on City residents. If WWTF nitrogen removal upgrades are required, the projected wastewater costs will be unaffordable without

supplemental grant funding assistance (regardless of whether CSO abatement is implemented).

TABLE EX-6Residential Indicator Summary¹

Condition	Residential Indicator-without WWTF Nitrogen Removal Upgrades	Residential Indicator-with WWTF Nitrogen Removal Upgrades
Existing WW Costs	1.0	1.0
Future WW Costs (Non-CSO only)	1.7	2.8
Future WW Costs (NON-CSO + CSO)	2.0	3.0

¹The Residential Indicator is calculated as the estimated wastewater cost per household divided into the median household income.

More detailed financial models were also developed that confirmed the significant impacts that the CSO abatement projects and other anticipated wastewater needs will have on City residents, as described below.

1. A supplemental analysis of affordability was performed using the EPA methodology described above, modified as follows:
 - a. Annual wastewater costs were developed based on proposed implementation and payback periods for each anticipated wastewater project and proposed CSO abatement project, rather than assuming equal annual costs over the implementation period. Design and construction periods were assumed using this approach. Refer to Figure EX-2.
 - b. Longer implementation periods than 20 years were considered to reduce impacts to residents and businesses.
 - c. It was assumed that CSO abatement projects will receive State Revolving Fund (SRF) loans at a 2% interest rate and that significant projects that are not expected to receive SRF loans will be funded with a 4.5% interest loan; 20-year bond periods were assumed.
 - d. Construction costs were escalated from present day costs based on the change in the ENR Construction Cost Index from 2009 to 2018.
 - e. Wastewater operation and maintenance (O&M) costs were escalated from present day costs based on the changes in the City's wastewater O&M costs from Fiscal Year 2000 to Fiscal Year 2018.
 - f. The median household income (MHI) in Holyoke was escalated from present day costs based on the average percent change in the MHI from 2009 to 2017.

Note that funding from supplemental special grants is not included in the analysis.

The financial impacts are illustrated in Figure EX-3 and confirm that the proposed CSO abatement projects will place a High Burden on City residents with Residential Indicator values exceeding 1.5. In addition, Figure EX-3 confirms the need for significant funding assistance in the form of grants in order to implement either CSO abatement improvements or WWTF nitrogen removal upgrades (beyond an SRF loan, which has already been considered in the analysis).

2. A supplemental analysis of affordability was performed using an alternate methodology developed by several consultants for the American Water Works Association (AWWA), the National Association of Clean Water Agencies (NACWA), and the Water Environment Federation (WEF). This effort was prepared in anticipation of the EPA updating its financial capability assessment guidelines. This approach determines affordability using the following two indicators:
- Household Burden Indicator (HBI)** - The HBI is calculated as the basic household water service costs (water and sewer combined) as a percentage of the 20th percentile household income (the Lowest Quintile of Income (LQI) for the service area). The basic water services costs per household are based on an assumed 50 gallons per person per day. The HBI attempts to reflect the economic impact on relatively low-income households. The benefit of using the fixed water consumption value noted is that it allows the analysis to focus on non-discretionary, basic water service costs, rather than average costs, which are more relevant to low-income households.
 - Poverty Prevalence Indicator (PPI)** - The PPI is calculated as the percentage of community households at or below 200% of the Federal Poverty Level (the Federal Poverty Level is \$24,600 for a family of four). The PPI reflects the degree to which poverty is prevalent in a community, which indicates the prevalence of economic distress across the community. In Holyoke, 50% of the population live below 200% of the federal poverty level, per the 2017 American Community Survey Census data. This methodology indicates that PPI's greater than 35% place the highest burden on a community in this category.

In combination, the HBI and PPI metrics reflect both the household burden and the financial health of the community. The matrix presented in Table EX-7 provides benchmarks for determining the water/wastewater cost impacts on those households with incomes at or below the LQI. Note that for communities such as Holyoke with a PPI of greater than 35%, an HBI greater than 7% would place a High Burden on its residents.

TABLE EX-7

Benchmarks for Recommended Household Affordability Metrics

HBI ¹	PPI ²		
	>35%	20% to 35%	<20%
>10%	Very High Burden	High Burden	Moderate-High Burden
7% to 10%	High Burden	Moderate-High Burden	Moderate-Low Burden
<7%	Moderate-High Burden	Moderate-Low Burden	Low Burden

¹The Household Burden Indicator (HBI) is calculated as the basic household water service costs (water and sewer combined) as a percentage of the 20th percentile household income (the Lowest Quintile of Income for the service area).

²The Poverty Prevalence Indicator (PPI) is calculated as the percentage of community households at or below 200% of the Federal Poverty Level.

The financial impacts using this alternate methodology are illustrated in Figure EX-4 and confirm that the proposed CSO abatement projects will place a High Burden on City residents with Household Burden Indicator values exceeding 7.0 and, if WWTF nitrogen upgrades are implemented, exceeding 10.0. Similar to the supplemental EPA methodology, this alternate analysis confirms the need for significant funding assistance in order to implement either CSO abatement improvements or WWTF nitrogen removal upgrades.

9 Funding

Funding sources that may be available for CSO abatement projects include:

- The State Revolving Fund (SRF) Loan Program for wastewater improvements
- Federal/state grant funding

The State Revolving Fund (SRF) loan program for wastewater improvements has been established by the Commonwealth to assist communities in funding a wide variety of wastewater projects, including replacing/rehabilitating sewers, pump stations and wastewater treatment facilities. CSO improvements would also be eligible for funding under this program. Communities currently compete for low interest loans (2% for a 20-year loan) under this program. Disadvantaged communities can also qualify to receive partial loan forgiveness on the loan principal.

Over the past 20 years, limited federal and state grants have been made available for CSO abatement along the Connecticut River. The Mosher Street area, Jones Ferry Road area and Appleton Street area sewer separation projects were partially funded through federal grants. These grants funded 55% of the proposed improvements.

Grant funding is available to communities through the Community Development Block Grant (CDBG) program. The Community Development Fund (CDF) awards grants to eligible cities and towns to meet a broad range of community development needs in housing, infrastructure, revitalization, economic development and public social services. These grants could be applied to a future wastewater improvement project such as CSO abatement.

Due to the economic distress of the City and its extremely high poverty levels, supplemental grant funding will be required in order for the proposed CSO abatement improvements to be affordable. Without additional funding, it will be very difficult for the City to afford the three CSO projects, regular sewer rehabilitation and replacement, and regular wastewater system operation and maintenance; and it will not be possible to afford the WWTF nitrogen removal upgrades. In addition, it may be necessary to extend the implementation schedule beyond 20 years to lessen the financial burden on the City, depending on the amount of funding assistance available.

10 Recommended Plan

The City of Holyoke has been reducing CSO discharges over the last 20 years since the draft CSO LTCP was prepared. Completed CSO abatement projects include the Green Brook Separation Project that reduced CSO 21 discharges (2001), the Mosher Street Area Sewer Separation project that eliminated CSO 14 (2007), the Berkshire Street Satellite Treatment Facility that reduced untreated CSO 9 discharges (2007), the Front Street/Appleton Street CSO Regulator Adjustment (2007) that reduced CSO 16 discharges, the Jones Ferry Road Area Sewer Separation Project that eliminated CSO 3 (2012), and the Appleton Street Area Sewer Separation Project that eliminated CSO 13 (2012). These projects have reduced the annual CSO volume by approximately 316 million gallons (66%).

Proposed CSO abatement projects based on the results of this CSO LTCP Update include:

- Jackson Street Area (CSO 11) Sewer Separation
- Springdale Park (CSO 8) Sewer Separation
- Riverview Terrace (CSO 21) Sewer Separation

Design of the Jackson Street Area Sewer Separation Project has been completed and construction is scheduled to commence in 2020.

Abatement of CSO discharges from CSOs 8, 11, and 21 is recommended because:

1. Abatement of these three CSOs provides the lowest cost per gallon of CSO volume removed ("the biggest bang for the buck") and would eliminate 3 of the 4 CSOs with the greatest overflow volume.
2. Elimination of these CSOs, along with the prior CSO abatement described above, will result in greater than 85% removal of annual CSO volume over the next 20± years (86%). This abatement goal has been recommended by EPA for other CSO communities.
3. Elimination of these CSOs, along with the prior CSO abatement described above, will result in the elimination or capture for treatment of greater than 85 percent by volume of the combined wastewater flow collected on a system-wide annual average basis (from 76% under current conditions to 87%), which complies with the federal CSO abatement policy.

We recommend that CSOs 8, 11 and 21 abatement be implemented over the next 20 years, as summarized in Table EX-8. However, it is important to note that because Holyoke is one of the most economically disadvantaged communities in the state, significant grant funding assistance is needed in order for the City to afford either the proposed CSO abatement or WWTF nitrogen removal upgrades. In addition, it may be necessary to extend the implementation schedule beyond 20 years to lessen the financial burden on the City, depending on the amount of funding assistance available.

TABLE EX-8

Recommended CSO Abatement Plan

CSO No.	CSO Abatement Description	Capital Cost (\$M)	Annual CSO Volume Removed (MG)	Cumulative % CSO Volume Reduction ²	Implementation Schedule ¹
Previously Implemented CSO Abatement Projects			316.3	66.0%	---
11	Jackson St. sewer separation	\$8.60	17.8	69.7%	2020-2022
8	Springdale Park sewer separation	\$9.56	21.4	74.2%	2025-2029
21	River Terrace sewer separation	\$16.67	58.4	86.4%	2035-2039
TOTAL	---	\$34.83	413.9	---	---

¹Includes design and construction.

²Based on a total annual overflow volume of 479.2 MG in 2000.

No further CSO abatement is proposed or required to comply with the federal CSO control policy.

Acknowledgments

We wish to thank you and Robert Peirent for your assistance throughout the project and the development of this report.

This report was prepared by Tighe & Bond personnel under the general supervision of William Hardy, PE and David Popielarczyk, PE.

Very truly yours,

TIGHE & BOND, INC.



William N. Hardy, PE
Chief Operating Officer

TIGHE & BOND, INC.



David J. Popielarczyk, PE
Principal Engineer/Associate

Enclosure

J:\H\H1471 Holyoke LTCP Update\003 LTCP Update\Report\Phases 1 & 2 Report-Draft\Rev 1\Executive Summary-Phases 1 And 2-Rev 1.Doc

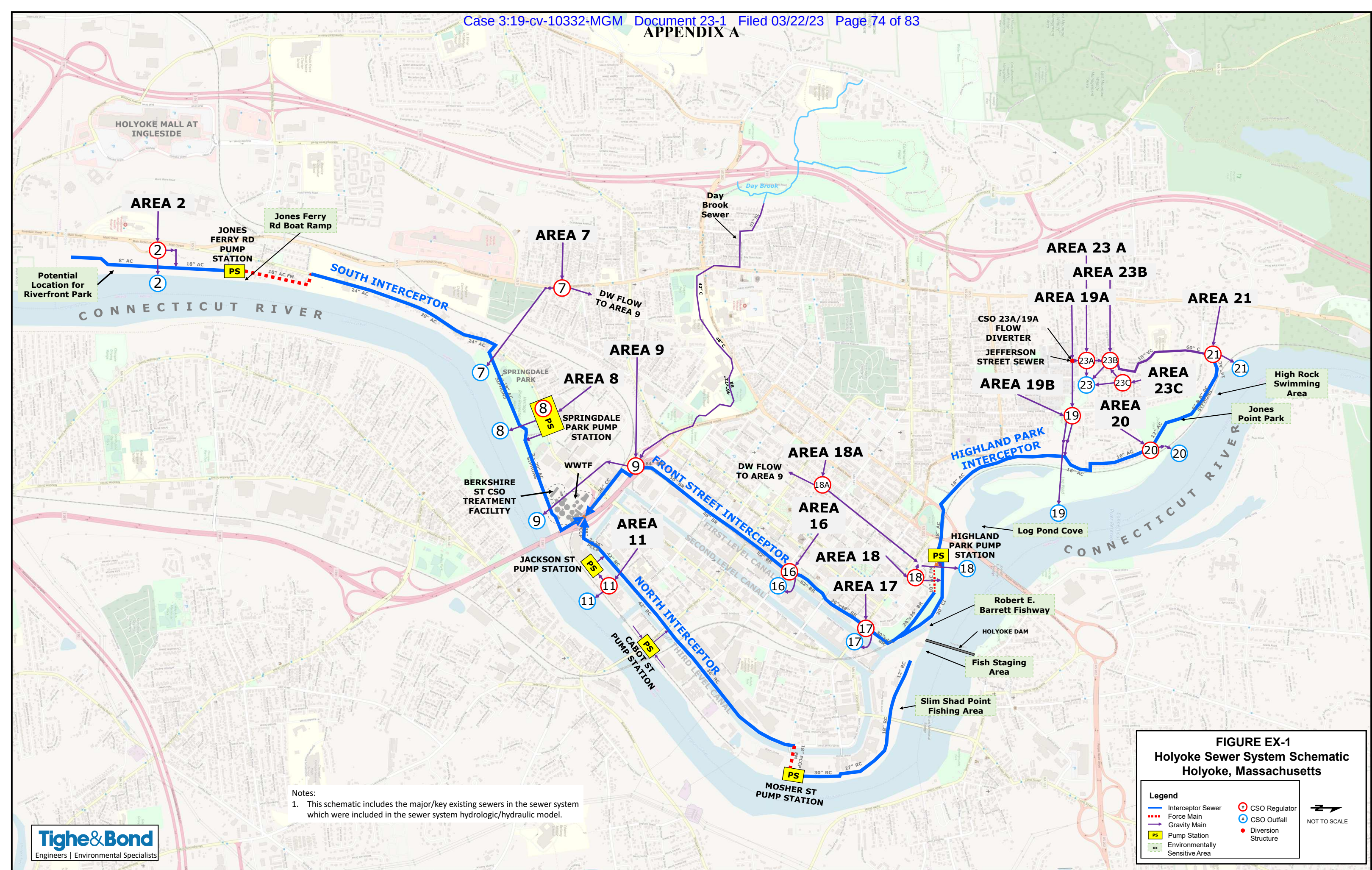


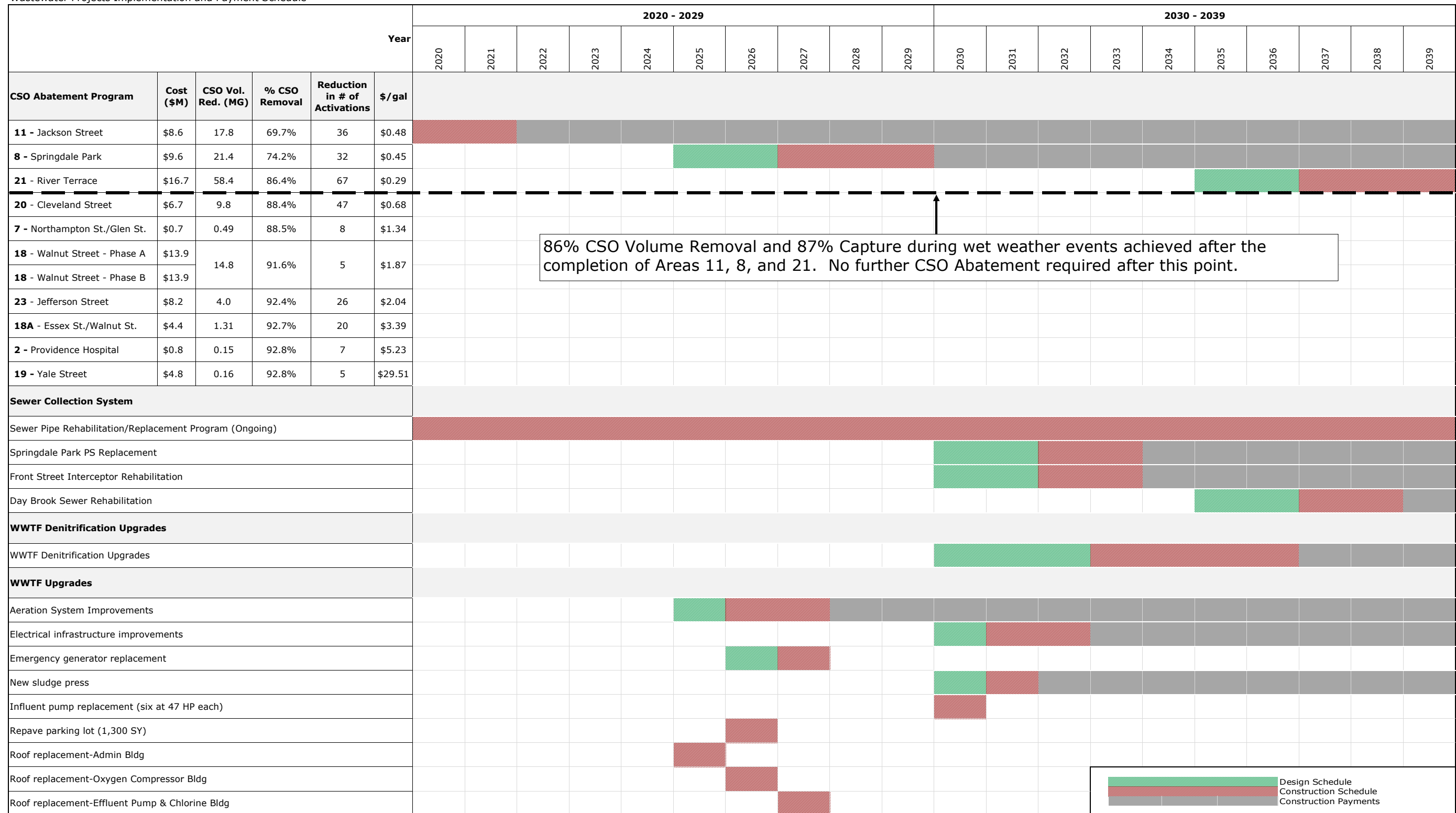
FIGURE EX-1
Holyoke Sewer System Schematic
Holyoke, Massachusetts

Legend

- Interceptor Sewer
- - - Force Main
- Gravity Main
- PS Pump Station
- xx Environmentally Sensitive Area
- CSO Regulator
- CSO Outfall
- Diversion Structure

NOT TO SCALE

FIGURE EX-2
Wastewater Projects Implementation and Payment Schedule



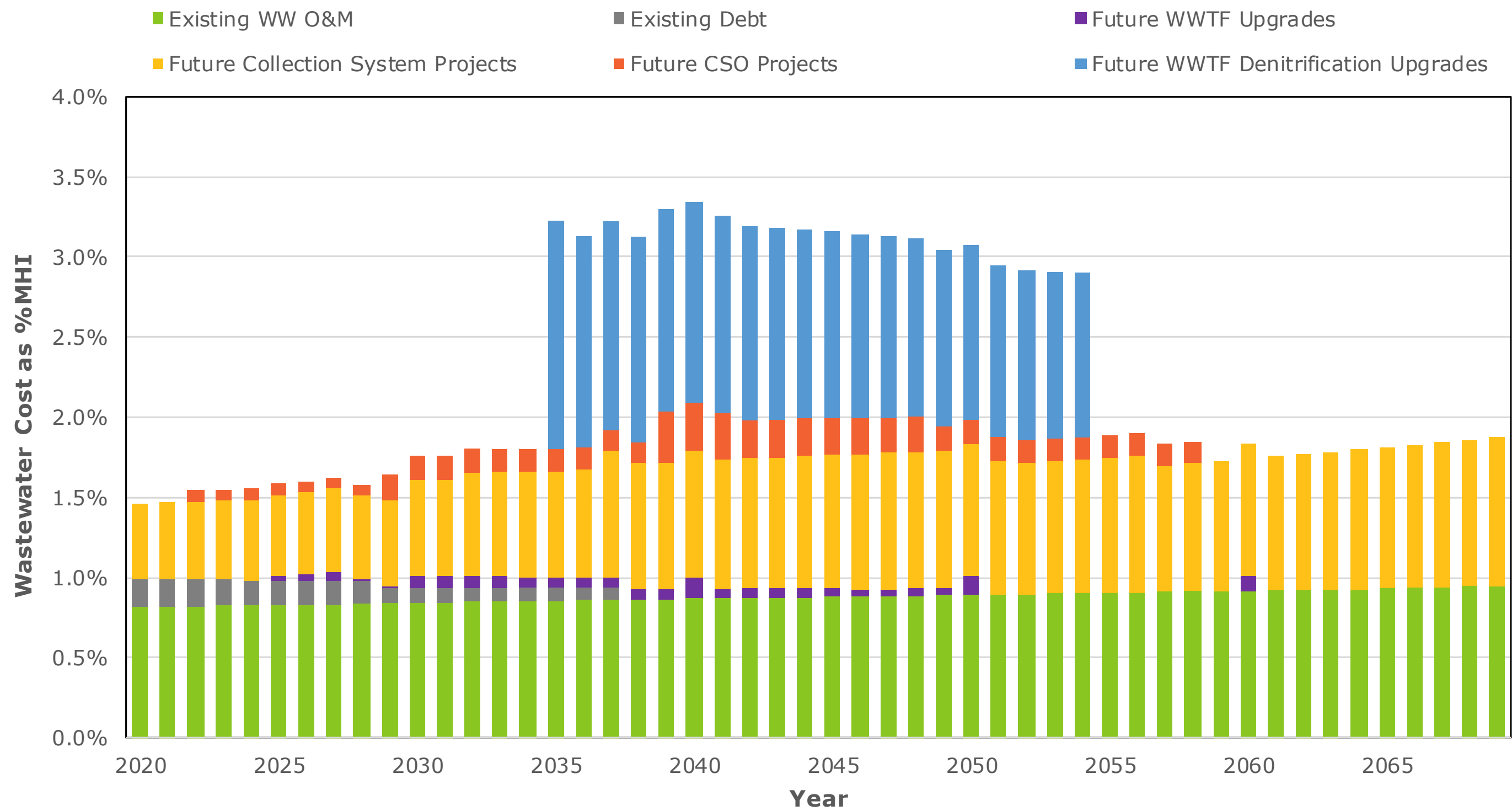


Figure EX-3
Annual Wastewater Cost as Percent MHI

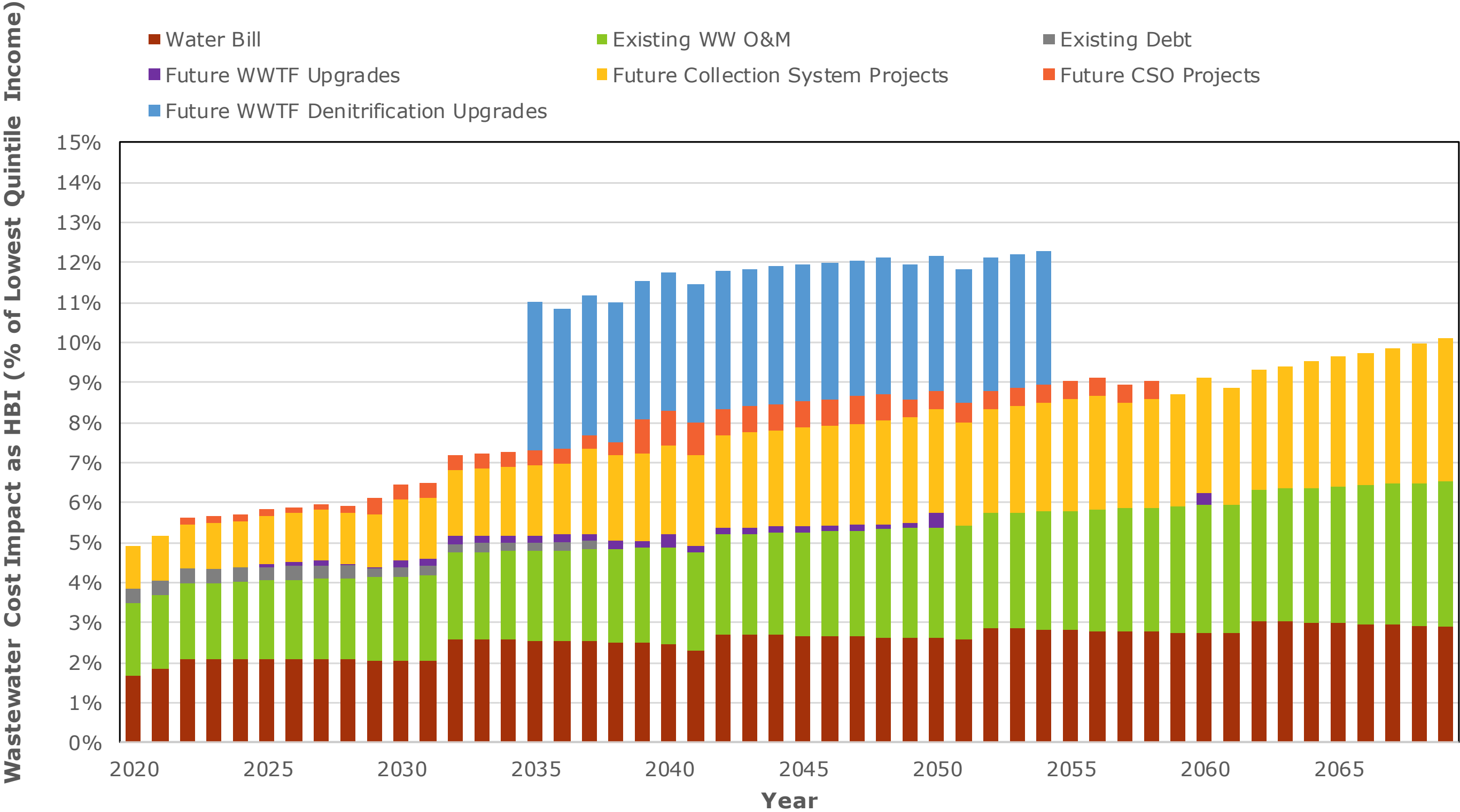


Figure EX-4

Annual Combined Water & Sewer Cost as Percent LQI

Kudarauskas, Elizabeth A.

From: Robert Peirent <[REDACTED]>
Sent: Monday, April 4, 2022 3:19 PM
To: Koopman, Douglas
Cc: Kurpaska, Daniel J (DEP); Sokop, Matthew (DEP); Harrington, Brian D (DEP); Joshua Garcia
Subject: Re: Holyoke LTCP meeting

Follow Up Flag: Follow up
Flag Status: Flagged

Doug

Following up on our discussion earlier today, I've expanded upon the timeline for completion of CSO Area 8. The ultimate completion date hasn't changed but I have provided milestone dates for beginning the design and bidding/construction of the project. The new text is highlighted in yellow.

Please let me know if you have any questions or require any additional information.

- Completion of the Springdale Pond Drain Relocation Project (part of CSO Area 8) - December 31, 2022
- Completion of River Terrace Area 21A - December 31, 2027
- Completion of River Terrace Area 21B - December 31, 2029
- **Begin design of CSO Area 8 - January 1, 2033**
- **Beginning bidding/construction of CSO Area 8 - January 1, 2035**
- Completion of CSO Area 8 - December 31 2037

On Tue, Mar 22, 2022 at 4:33 PM Robert Peirent <[REDACTED]> wrote:
Doug

I reviewed the following timeline with Mayor Garcia this AM and received his approval to propose the following schedule.

- Completion of the Springdale Pond Drain Relocation Project (part of CSO Area 8) - December 31, 2022
- Completion of River Terrace Area 21A - December 31, 2027
- Completion of River Terrace Area 21B - December 31, 2029
- Completion of CSO Area 8 - December 31 2037

These schedule changes were made in response to EPA's May 28, 2020 draft LTCP review letter. As requested, completion of Area 21 has been prioritized over Area 8. In addition, these projects have been accelerated somewhat from what was proposed in the draft LTCP.

APPENDIX B

A portion of Area 8, the Springdale Pond Drain Relocation Project was designed inhouse and the construction contract for this work has been awarded. It will be funded with ARPA funds. The remaining projects are anticipated to be funded using the MA Clean Water State Revolving Fund. The design of the River Terrace project is ongoing and is expected to continue through at least June 30, 2023, subject to availability of additional MassDEP/CT River Cleanup funds.

Given the City's ongoing financial challenges and the significant burden that projects like these place on the City's already stressed ratepayers, the two Area 21 projects are expected to coincide with year 3 and year 5 of EPA's BIL allocation to the MA Clean Water Trust Fund to maximize the potential for principal forgiveness as well as to coincide with retirement of a portion of the City's current SRF debt service.

We believe that the timeline presented above is a reasonable response to EPA's review comments and represents a good faith attempt by the City to continue to improve our compliance with the Clean Water Act and EPA's National CSO Control Policy.

Please let me know if you have any questions or require any additional information.

On Tue, Mar 8, 2022 at 4:34 PM Koopman, Douglas <[REDACTED]> wrote:

Bob

That is fine with me. I appreciate the update and your commitment to this project.

Lets shoot for March 25th

Thank you

Doug

Douglas Koopman

[REDACTED]

[REDACTED]

EPA Region I

5 Post Office Square, Suite 100

Mail code 04-03

Boston MA, 02109-3912

From: Robert Peirent <[REDACTED]>
Sent: Tuesday, March 8, 2022 3:51 PM

APPENDIX B

To: Koopman, Douglas <[REDACTED]>
Cc: Kurpaska, Daniel J (DEP) <[REDACTED]> Sokop, Matthew (DEP) <[REDACTED]>
 Harrington, Brian D (DEP) <[REDACTED]>
Subject: Re: Holyoke LTCP meeting

Doug - I'm coming up on my 60 day promised deadline for presenting a proposed schedule for completion of the City's CSO related projects that can be incorporated in an updated consent decree. I'd like to request pushing the deadline for submitting this schedule out to the COB March 25th. Things remain very hectic in Holyoke since we remain without a long-term DPW superintendent with Mike McManus' departure in early November. In addition, during this period a new mayor came on board along with multiple new City Councilors. We've also turned over 3 members of our BPW since then.

The good news, amongst all this transition, is that we continue to make progress on our CSO projects. Jackson St restarts on 3/21 with sewer lining and site restoration activities to complete, our Springdale Pond drain relocation project bids tomorrow, and our next phase of work on the River Terrace Area 21 project is underway.

Part of my reason for asking for more time is that I'm heading out on vacation on Thursday 3/10 and won't return until Friday 3/18. I will be getting together with Mayor Garcia when I return to confirm his commitment to the schedule that I will present to you by the 25th.

My last bit of news is that I'll be stepping away from my position as City Engineer on June 23rd. I've reached the point in life that I need to find a way to work less hours than I do in my current position. I don't know what my next adventure will be but expect that I'll figure something out.

Thanks

On Tue, Jan 4, 2022 at 10:26 AM Koopman, Douglas <[REDACTED]> wrote:

Thank you all for getting back to me

This coming Tuesday works for a meeting

If I remember correctly, the original schedule of work that the City proposed was to due area 8, Springdale Park and then area 21 River Terrace.

We had discussed doing the Area 21 River terrace work first followed by area 8 work. all the while completing the Separation of CSO 11 and working on getting the discharge from Springdale pond out of the system. Also we had some discussion of blocking up CSO 17 over time as it has not been active.

I think where we are at is to get an updated schedule from the City which will be incorporated into the CD.

I might not have this completely correct but I think we can use it as a starting point for discussion.

Thank you

Talk to everyone on Tuesday

Doug

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APPENDIX B

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In person appointments available upon request. Please email or call with preferred time and date and I will confirm availability.

Bob Peirent, P.E.

Holyoke City Engineer



City Hall Annex, Room 300

20 Korean Veterans Plaza

Holyoke, MA 01040-5019

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